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**Datasheet for the decision
of 28 September 2012**

Case Number: T 1407/09 - 3.3.05

Application Number: 00969800.2

Publication Number: 1218304

IPC: C03C 13/00

Language of the proceedings: EN

Title of invention:

A glass fiber composition

Patentee:

STM Technologies S.r.l.
URSA International GmbH

Opponent:

SAINT-GOBAIN ISOVER

Headword:

Glass fiber/STM-URSA

Relevant legal provisions:

EPC Art. 54(1)(2)(3), 56, 84

Keyword:

"Main request and first auxiliary request: Novelty (no) -
Prior use novelty-destroying"

"Second auxiliary request: Novelty (yes), Inventive step (yes)
- prior use conveying implicitly a teaching as starting point
- non obvious alternative"

Decisions cited:

T 0221/91, T 0055/01, T 0234/09

Catchword:

-



Case Number: T 1407/09 - 3.3.05

D E C I S I O N
of Technical Board of Appeal 3.3.05
of 28 September 2012

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(Patent Proprietors)

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Decision under appeal:

Interlocutory decision of the Opposition
Division of the European Patent Office posted
26 May 2009 concerning maintenance of the
European patent No. 1218304 in amended form.

Composition of the Board:

Chairman: G. Raths
Members: J.-M. Schwaller
S. Hoffmann

Summary of Facts and Submissions

I. The present appeals lie from the decision of the opposition division concerning maintenance of European patent No. 1 218 304 on the basis of amended claims filed as first auxiliary request on 17 March 2009 during the oral proceedings before the first instance, with claim 1 thereof reading:

"1. A biologically-degradable or bio-soluble glass fiber composition, characterized in that it comprises the following components expressed in percent by weight:

- SiO_2 : 61 to 66;
- Al_2O_3 : 1.1 to 1.8;
- $(\text{CaO} + \text{MgO})$: higher than 9;
- CaO : 6 to 9;
- MgO : 0 to 5;
- Na_2O : higher than 17.5 to 18.50;
- K_2O : 0.6 to 1;
- B_2O_3 : 5 to 15;
- P_2O_5 : 0 to 5;
- SO_3 : 0 to 1;
- Fe_2O_3 : 0 to 0.5;
- *Others*: less than 2."

II. The following documents filed during the opposition proceedings are relevant for the present decision:

A1: EP 1 048 625 A1

A1a: Translation of Spanish patent application
No. P9900960, dated 30 April 1999, priority of A1

A2: FR 2 764 597 A1

A3: US 5 108 957

A4: WO 95/32927

A5: WO 98/30509

A7: US 5 055 428

Declaration of Mr PICARD dated 26 January 2009

B1: Analysis sheet dated 19 April 1999 of a sample of "Fibralene PV 200" glass fibers

B1a: Pictures of a FIBRAVER glass fiber mat before and after opening of its packaging, as well as of its product label, undated

B1b: Image enlargement of the product label in B1a, undated

B1d: Request for analysis dated 2 March 1999 of a sample of "Fibralene PV 200".

III. The contested decision can be summarised as follows:

Regarding the alleged prior use based on document B1, neither the date nor the circumstances relating to the alleged use had been determined.

The subject-matter of claim 1 as granted lacked an inventive step over the glass fiber composition known from document A2, example 8B.

The claims of the first auxiliary request involved an inventive step because starting from any of the documents A2 or A3, it was not obvious for a skilled person to modify the known compositions by changing at least two ingredients in such a way that he would arrive at the claimed composition.

IV. With its statement of grounds of appeal, the opponent (hereinafter "appellant I") contested the above decision in particular on the basis of the alleged prior use of the commercially available glass fibers Fibralene PV 200. Appellant I further argued that the subject-matter as upheld by the opposition division, on the one hand, lacked novelty over the individual disclosure of documents A1 or A2 and, on the other hand, lacked an inventive step over the above prior use or alternatively over the individual disclosure of documents A2 or A3.

V. With their statement of grounds of appeal dated 2 October 2009 the patent proprietors (hereinafter "appellant II") requested that the decision be reversed and that the patent be upheld as granted, i.e. with claim 1 reading as follows (*differences to claim 1 as maintained by the opposition division highlighted by the board*):

"A biologically-degradable or bio-soluble glass fiber composition, characterized in that it comprises the following components expressed in percent by weight:

- SiO_2 : 61 to 66;
- Al_2O_3 : 1.1 to 1.8;
- (CaO + MgO): higher than 9;
- (**$\text{Na}_2\text{O} + \text{K}_2\text{O}$**): **higher than 18;**

- ~~CaO: 6 to 9;~~
- ~~MgO: 0 to 5;~~
- ~~Na₂O: higher than 17.5 to 18.50;~~
- ~~K₂O: 0.6 to 1;~~
- B₂O₃: 5 4 to 15;
- P₂O₅: 0 to 5;
- SO₃: 0 to 1;
- Fe₂O₃: 0 to 0.5;
- Others: less than 2."

Alternatively, appellant II filed three auxiliary requests, with the set of claims according to auxiliary request 2 being identical to the one upheld by the opposition division.

Claim 1 of auxiliary request 1 reads as follows (amendments in comparison to claim 1 as granted emphasised by the board):

"Glass fibers consisting of a biologically-degradable or bio-soluble glass fiber composition, characterized in that it ~~comprises~~ consists of the following components expressed in percent by weight:

- SiO₂ : 61 to 66;
- Al₂O₃: 1.1 to 1.8;
- (CaO + MgO): higher than 9;
- (Na₂O + K₂O): higher than 18;
- B₂O₃: 4 to 15;
- P₂O₅: 0 to 5;
- SO₃: 0 to 1;
- Fe₂O₃: 0 to 0.5;
- Others: less than 2."

VI. With a letter dated 2 December 2009, appellant I contested in particular the claims of the 1st auxiliary request under Articles 54, 56 and 123(3) EPC and those of the 2nd auxiliary request under Articles 84, 54 and 56 EPC.

VII. Further observations were received from the parties as follows:

From appellant II (patent proprietors): with letter dated 9 February 2010;

From appellant I (Opponent): with letters dated 20 August 2012 and 20 September 2012, each in particular accompanied by a declaration by Ms LESIEUR. The letter dated 20 September 2012 was faxed to appellant II by the board of appeal on the same day.

VIII. With a further letter dated 28 August 2012, appellant II filed two additional sets of amended claims as auxiliary requests 4 and 5, respectively.

IX. At the oral proceedings, which took place on 28 September 2012, appellant II requested as a procedural matter that the declaration by Ms Lesieur filed on 20 September 2012 be disregarded because of its late filing. If this declaration was accepted by the board, appellant II requested the postponement of the oral proceedings.

Appellant I held the claims as granted and those of the first auxiliary request to lack novelty over the alleged prior use of the commercial glass fibers "Fibralene PV200". The subject-matter of claim 1 of

auxiliary request 2 lacked clarity because its wording was contradictory. The subject-matter of claim 1 of auxiliary request 2 further lacked novelty over the disclosure of documents B1, A1 and A2 taken individually, also lacked inventive step over the teachings of documents B1 or A3.

In the course of the discussion, appellant II filed **an amended auxiliary request 2** which differed from the one upheld by the opposition division in that **dependent claims 5, 6 and 9 to 11 were deleted**. Claim 1 thereof reads as indicated in point I. above and the new claims 2 to 6 represent particular embodiments of the subject-matter of claim 1 on which they depend.

X. The parties' requests were established as follows:

Appellant I requested that the decision under appeal be set aside and that the patent be revoked.

Appellant II requested that the decision under appeal be set aside and that the patent be maintained as granted (main request) or, alternatively, that the patent be maintained on the basis of the claims according to auxiliary request 1 filed on 2 October 2009 or, alternatively, that the patent be maintained on the basis of the claims according to auxiliary request 2 filed during the oral proceedings before the board.

Reasons for the Decision

1. *Admissibility of the second declaration - request for postponement of the oral proceedings*

1.1 The second declaration of Ms Lesieur stating that the analysis sheets from the "Centre de Recherches Industrielles de Rantigny" (hereinafter "CRIR") always expressed the oxide amounts in weight percentages was filed on 20 September 2012. This declaration was preceded by a first one dated 20 August 2012, by which Ms Lesieur declared that the chemical analysis of the glass product Fibralene PV200 had been carried out by using X-Ray fluorescence spectrometry, which allowed the determination of the weight amount of a specific chemical element.

1.2 In the board's view it is undeniable that the declaration of 20 September 2012 was filed at a very late stage of the appeal proceedings, since it was received one week before the oral proceedings.

However, the question whether the elemental amounts in B1 were indicated on a molar or a weight basis had always been a critical issue in the present proceedings. The board observes that appellant II was aware of the first declaration and of its content, since this first declaration had been filed earlier - in November 2010 - in another case involving both parties, namely the opposition proceedings on EP 1048625. Appellant II could not be surprised by the content of the further declaration of 20 September 2012 in which Ms Lesieur simply confirmed and expanded on the first declaration.

1.3 It follows from the above that the board does not see any reason not to admit this declaration into the proceedings. The board does also see no reason to postpone the oral proceedings, since the above topic had always been a critical issue and in this respect appellant II had sufficient time before the oral proceedings to prepare the necessary counter-arguments.

2. *Main request - novelty/prior use*

2.1 Appellant I having alleged that the glass fiber "Fibralene PV 200" had been made available to the public by means of a commercial prior use before the priority date of the contested patent, the first question to be answered is whether the analytical data shown in B1 - an analysis sheet from the CRIR dated 19 April 1999 reproduced hereinafter - directly and unambiguously disclose a glass composition which falls under the wording of claim 1 as granted.

				LIMITES ANALYTIQUES	
Composant	Formule	%	Remarques	MINI	MAXI
Silice	SiO ₂	64,3		40,4	71,3
Anhydride sulfurique	SO ₃	0,26		0,05	0,60
Fer total	Fe ₂ O ₃	0,15		0,05	0,61
Alumine	Al ₂ O ₃	1,75	hors limites	2,04	23,30
Chaux	CaO	6,5		4,06	30,00
Magnésie	MgO	3,30		1,05	18,70
Oxyde de sodium	Na ₂ O	17,80	hors limites	2,20	16,74
Oxyde de potassium	K ₂ O	0,37	hors limites	0,67	3,58
Anhydride borique	B ₂ O ₃	5,20	hors limites		
Baryte	BaO	0,00	ASQ		
Anhydride phosphorique	P ₂ O ₅	0,000			
Fluor	F				

Oxygène à déduire	-O ₂				
Oxyde de zirconium	ZrO ₂	0,009	hors limites	0,0168	0,0515
Oxyde de manganèse	MnO	0,007		0,0018	0,272
Oxyde de chrome	Cr ₂ O ₃	0,0025	hors limites	0,008	0,067
Oxyde de titane	TiO ₂	0,05		0,024	0,201
Oxyde de molybdène	MoO ₃	0,0050		0,005	0,04
Oxyde de nickel	NiO	0,002	hors limites	0,0048	0,0452
TOTAL		99,71			

2.1.1 It is undisputed that the individual numerical values indicated in the above table fall within the corresponding ranges defined in claim 1 at issue.

2.1.2 Appellant II however did not accept that a glass composition according to claim 1 as granted was directly and unambiguously disclosed by B1. It argued in particular that:

- (a) B1 did not say whether the data values were by "weight%" or "mole%", and the software associated with the X-ray fluorescence spectrometer used for the analysis could probably have generated both values at the push of a button. Furthermore, the declaration of Ms Lesieur that the values were always expressed "by weight" was void since she was not yet working at the CRIR in April 1999;
- (b) the analytical results for Al₂O₃, Na₂O, K₂O and B₂O₃ were outside the analytical limits of the measurement method.

2.1.3 The board does not accept the above arguments for the following reasons.

Document B1's form and content show that the analysis values were recorded on it as a routine task and a basis for further work. Its failure to specify the "%" values means that the CRIR must have operated a standard practice of using always "weight%" or "mole%"; otherwise, the values would have been too vague and given rise to total confusion. Even if Ms Lesieur had not been in charge of working on the analysis values at the time when sheet B1 had been produced, she must have been aware of any change in its standard documentation practice, from "weight%" to "mole%" or vice versa. Otherwise, she could not herself have worked with values documented prior to her employment. Her statement that the CRIR always used "weight%" convinces the board that the data in B1 are based on "weight%".

As explained in point 3 of Ms Lesieur's first declaration of 15 November 2010, the remark "outside of the limits" ("hors des limites") in the above table meant that data had been measured with a lower accuracy in comparison to data falling inside the "analytical limits" ("limites analytiques") of the measurement method. It follows that even if the accuracy for Al_2O_3 , Na_2O and K_2O is not the highest, one has to admit that the data recorded on sheet B1 fall within the ranges of values defined in claim 1 at issue.

It follows from the above that the composition of the glass fiber sample analysed in April 1999 and recorded on sheet B1 directly and unambiguously falls within the terms of claim 1 at issue.

- 2.2 The second question to be answered is whether the analysed sample had been made commercially available

before the priority date or whether, as alleged by appellant II, it could have been subject to a confidentiality agreement between appellant I and FIBRAVER, manufacturer of the glass fiber "Fibralene PV 200".

- 2.2.1 The board cannot uphold appellant II's allegations, because if the sample at issue had been obtained within the terms of a confidentiality agreement, clarification was to be expected in the present case, since as established during these appeal proceedings FIBRAVER merged with Poliglas, which itself later merged with URSA, co-proprietor of the contested patent. In any case, as established in a case similar to the one at issue, it was incumbent upon appellant II to seek clarification on this issue (see T 0221/91, point 2 of the reasons, which concerned an alleged prior use of a tyre).
- 2.2.2 Regarding the alleged commercial availability of the glass fiber sample analysed in April 1999, the analysis sheet B1 reveals that the sample was a glass fiber ("FV: fibre de verre") called "Fibralene PV 200" produced in BEAUCAIRE (FRANCE). The sheet further discloses that the sample was collected on 3 March 1999 and analysed on 16 April 1999, i.e. well before the priority date - 30 September 1999 - of the contested patent.
- 2.2.3 According to Mr Picard's declaration of 26 January 2009, the glass fiber sample whose data are documented in analysis sheet B1 originates from the packaged/unpackaged glass fiber mat shown on the photographs in document B1a, said mat having the label shown on the photographs in documents B1a and B1b. This product was

freely obtained on the market and was purchased within the framework of the follow-up of the competitors' products. Mr Picard explained - as confirmed by document B1d - that the analysis of the glass sample had been requested on 2 March 1999 by Mr Marle, who was in charge of said product. This corroborated the date of receipt (3 March 1999) of the glass fiber sample at the CRIR, as documented in document B1.

2.2.4 Appellant II argued that there was a contradiction between B1 (which indicated that the product stemmed from a factory in "BEAUCAIRE") and the label in B1a/B1b (which indicated "PRODUCED IN FRANCE, 77442 MARNE-LA-VALLEE CEDEX 2"). The board disagrees, because as indicated by the "Avis technique 5/00-1468" filed by appellant I on 20 August 2012, the factory of FIBRAVER is located in Beaucaire, while its headquarters are located in MARNE-LA-VALLEE.

2.2.5 The board observes that the glass fiber roll called "Fibralène PV Monocouche PV 200" shown on the photographs in document B1a was produced by FIBRAVER. Its packaging (enclosed in a plastic foil) and conditioning (width: 1.20 m, thickness: 200 mm, length: 4 m, kraft paper on one side) are similar to those that can be purchased e.g. in do-it-yourself stores for similar mineral wool products. The label shown on the photograph on document B1a, also reproduced and enlarged on document B1b, furthermore bears the "ACERMI" certificate, which means that said fiber glass roll was certified by the French association for certification of insulating materials.

2.2.6 For the board, all these pieces of evidence lead to the conclusion that the roll of glass fibers shown in documents B1a/B1b and analysed in document B1 was commercially available in April 1999, i.e. well before the priority date of the contested patent.

2.2.7 Appellant's II argument that no receipt or bill was provided in order to show that the product was purchased in a shop can be disregarded because, in analogy to case T 0055/01 (see catchword) which concerned televisions, glass fiber mats or rolls are *"mass-produced consumer products and thus no further evidence is necessary to prove that they were actually sold to specified customers"*.

2.3 For the above reasons, the board is satisfied that all the requirements for establishing prior use are met and that the roll of glass fibers "Fibralene PV 200" had been made available to the public before the priority date of the contested patent, therefore belongs to the state of the art according to Article 54(2) EPC. As its composition - as established in document B1 - falls within the terms of claim 1 as granted, the latter lacks novelty under Article 54(1) and (2) EPC.

3. *Auxiliary request 1 - novelty/prior use*

Claim 1 of this request concerns "glass fibers consisting of" the glass composition defined in claim 1 of the main request. Since the commercially available product anticipating the subject-matter of claim 1 is precisely in the form of glass fibers, the same reasoning as in points 2.1 to 2.3 above applies to the present request.

4. *Auxiliary request 2*

4.1 Amendments

The board is satisfied - and nor was it in dispute - that the amended claims find a basis in the application as filed and that the amendment to the sole independent claim 1 is of a restricting nature. Amended claim 1 finds in particular a basis in claims 1, 4 and 5 of the application as filed.

The subject-matter of claim 1 of the second auxiliary request thus meets the requirements of Article 123(2) and (3) EPC.

4.2 Clarity

Appellant I argued that the second auxiliary request lacked clarity, because - by analogy to decision T 0234/09 - there was a contradiction between the three features: i) " $(CaO + MgO)$: *higher than 9*", ii) " CaO : 6 to 9" and iii) " MgO : 0 to 5" defined in claim 1 at issue.

The board observes that T 0234/09 is not applicable in the present case because feature i) above already existed as such in claim 1 as granted while features ii) and iii) already existed as such in dependent claim 2 as granted. Thus, even if there were a contradiction between the above features, it is established case law that an objection under Article 84 EPC cannot be raised if the lack of clarity already existed, as here, in the granted claims.

4.3 Novelty

4.3.1 The commercial glass fiber "Fibralene PV 200", for which prior use has been acknowledged above, does not anticipate the subject-matter of claim 1 of this request because its K_2O content (0.37%) as disclosed in **document B1** is lower than the one claimed (0.6 to 1 wt.%).

4.3.2 **Document A1** is state of the art under Article 54(3) EPC. Irrespective of whether its priority is valid or not, in particular as regards its claim 3 and Example C6, in the board's view it does not anticipate the subject-matter of claim 1 of this request.

The glass fibers according to Example C6 have a lower K_2O content (0.47%) and a higher Al_2O_3 content (1.85%) than those defined in the claimed subject-matter.

The glass fibers according to claim 3 also do not anticipate claim 1 at issue because, apart from their B_2O_3 and MgO content which fall within the corresponding ranges in claim 1 at issue, the ranges of values for the other glass constituents defined in claim 3 (namely SiO_2 62-68; Al_2O_3 1.5-2.5; Na_2O > 17; K_2O 0-3; CaO 5-8) overlap with the corresponding ranges in claim 1 at issue. There is however no disclosure in A1, including its examples, of the five selections to be made in order to fall directly and ambiguously within the particular ranges defined in claim 1 of auxiliary request 2 at issue.

The board agrees with appellant I that the disclosure of a document is not restricted to its examples.

However, in the present case, even if - as argued by appellant I - the skilled person would seriously contemplate values which are close to those defined in example C6 and which simultaneously fall within the ranges of values defined in claim 3, there is still a multiple choice to be performed to arrive at the wording of claim 1 at issue:

- the first choice concerns K_2O and whether the value to be chosen is lower or higher than the one (0.47%) in example C6;
- the second choice concerns Al_2O_3 and whether the value to be chosen is higher or lower than the one (1.85%) in example C6.

Only the choice of a lower value for Al_2O_3 and a higher value for K_2O would lead to subject-matter falling within the terms of claim 1 at issue; each of the other three choices necessary would lead outside the claimed subject-matter. However, document A1 gives the skilled person no information about how these choices are to be done, and it is constant case law that, if more than one choice has to be made in order to arrive at the subject-matter claimed, novelty has to be acknowledged.

- 4.3.3 In the board's view, **document A2**, state of the art under Article 54(2) EPC, also does not anticipate the subject-matter of claim 1 at issue. The specific glass fibers exemplified in A2 are distinguished from the claimed subject-matter by three or more differentiating features. The sole fiber which is distinguished therefrom by only two differences is the one according to Example 7B.

If, as argued by appellant I, the skilled person would take into consideration the entire disclosure of document A2 and in particular seriously contemplate the broader glass composition disclosed at page 9, lines 20 to 29 - i.e. the glass composition B - reproduced hereinafter:

- SiO₂ : 55 to 65%; preferably 58 to 62%
- Al₂O₃: 0 to 3%; preferably 1 to 2.5%
- CaO : 6 to 10%; preferably 7 to 9%
- MgO : 0 to 5%; preferably 1 to 4.5%
- Na₂O: 15 to 22%; preferably 16 to 20%
- K₂O : 0 to 3%; preferably 1 to 2.5%
- B₂O₃: 3 to 10%; preferably 4 to 8%
- P₂O₅: 0 to 3%,

he would have to make multiple choices to arrive directly and unambiguously within the terms of claim 1 of this request. For similar considerations as in point 4.3.2 above, claim 1 of this request is therefore novel over A2.

4.3.4 The board is satisfied that the subject-matter of claim 1 at issue is also novel over the content of the documents in the proceedings.

4.3.5 It follows from the above that claim 1, and claims 2 to 6 which depend thereon, meet the requirements of Article 54(1), (2) and (3) EPC.

4.4 Inventive step

4.4.1 The contested patent relates to a biologically degradable or biosoluble glass fiber composition

adapted for production of glass wool panels commonly used as heat insulators and/or sound-proofing materials (paragraphs [0001] and [0007]).

4.4.2 As regards the starting point for assessing inventive step, appellant I took the commercial glass fibers "Fibralene PV 200" discussed earlier (see in particular point 2.1). According to EEC directive 97/69/EC, "it seems justified under certain circumstances to exclude some man-made vitreous (silicate) fibres from classification as "carcinogen". The classification as carcinogen need not apply if it can be shown that the substance fulfills" a short-term biopersistence criterion. Appellant I argued in particular that since said commercial fibers were available on the market in 1999 and since their packaging shown on photographs Bla and Blb did not contain any warning that they were potentially hazardous for health, this implicitly meant that they met the requirements of EEC directive 97/69/ECC adopted in December 1998, that mineral wool had to dissolve at an acceptable rate if it entered the human system. It followed that these fibers provided for the same effect as those defined in claim 1 and, since they were distinguished from the subject-matter of claim 1 by only one differentiating feature, they represented the closest state of the art. Alternatively it stated that the closest state of the art document would be A3, as also suggested by appellant II.

Even if according to the jurisprudence of the boards of appeal the closest state of the art is normally a prior-art document disclosing subject-matter aiming at the same objectives as the claimed invention and having the most relevant technical features in common, the

board in the present case accepts that the fibers for which prior use has been acknowledged represent the most promising springboard towards the invention, since it appears plausible that they pertain to subject-matter conceived for the same purpose (see EEC directive 97/69/EC), namely a biosoluble glass fiber composition, and require the minimum of structural modifications (the sole difference being the K₂O content) to arrive at the subject-matter claimed.

4.4.3 As regards the technical problem to be solved in the light of this state of the art, the parties agreed that it consisted in the provision of a biologically degradable glass fiber with an alternative composition to that of the commercial fibers "Fibralene PV 200".

4.4.4 As a solution to this problem, the contested patent proposes the glass fiber composition according to claim 1, which is characterised in particular by a K₂O content of **from 0.6 to 1 wt.%**.

4.4.5 The next step is to verify the success of the proposed solution. The patent in suit contains biopersistence tests to prove biodegradability in Examples 1, 2 and 3: weighted mean life of fibers lower than the 10 days required by the EEC directive. The examples and figures in paragraphs [0038] to [0052] show that fibers with the claimed glass composition fulfil the biodegradability requirements of EEC directive 97/69/CE. The board is satisfied that the technical problem as defined under point 4.4.3 is effectively solved.

4.4.6 On the question whether the above solution is obvious in view of the cited prior art, in particular documents

B1 and A3 on which appellant I relied, the board observes the following.

Document B1 discloses the chemical composition of the commercial glass fiber "Fibralene PV 200", but does not disclose or suggest any alternative biodegradable glass fiber composition.

Appellant I argued that it was within the competence of a person skilled in the art to find alternatives to the above glass fiber by trying glass compositions close to the specific one disclosed in B1, or alternatively by using the teaching of document A3.

The board cannot follow this approach because even if further alternatives can easily be found by trial and error experimentation around the particular composition disclosed in document B1, the skilled person would not necessarily focus on K_2O and increase its content to at least 0.6% with the hope of obtaining a biodegradable glass fiber composition. As he has a multitude of other options at his disposal, he could for instance decrease the K_2O content, or vary the content of the other elements (SiO_2 , Al_2O_3 , MgO , CaO , Na_2O , P_2O_5 , Fe_2O_3 or "Others"), again with two further options: to either increase or reduce the content of each of these oxides.

In the presence of this multitude of options and in the absence of any indication of the specific direction in which to go, the skilled person would not arrive in an obvious manner at the proposed solution.

In the board's view, A3 also does not lead to the claimed subject-matter. Claim 1 of this document

discloses a glass fiber decomposable in a physiological medium and comprising:

SiO₂: 57 to 70 wt %;
CaO: 5 to 10 wt %;
Na₂O + K₂O: 13 to 18 wt %;
B₂O₃: 2 to 12 wt %;
Al₂O₃: up to about 5 wt %;
MgO: up to about 5 wt %;
F: up to about 1.5 wt %;
Impurities: less than 2 wt %; and
P₂O₅ in an amount effective in combination with the B₂O₃ and, when present, the Al₂O₃, but less than about 4 wt %, to cause the fiber to be decomposable in a physiological medium; wherein said fiber contains more than 0.1% by weight of P₂O₅ when the percentage by weight of alumina is greater than or equal to about 1%.

In its preferred embodiments, A3 (column 2, lines 42 to 53, claims 3 and 4) requires less Na₂O (14 to 17%) than the amount present in the glass fiber "Fibralene PV 200". However, the composition of "Fibralene PV 200" does not fall within the broad definition for biosoluble fibers given in A3, its Na₂O + K₂O content (18.17%) being higher and its P₂O₅ (0%) lower than required in the above claim 1 of A3.

It follows that if the skilled person seeking an alternative glass fiber composition to "Fibralene PV 200" was encouraged by the teaching in A3, he would clearly reduce the Na₂O content to less than 17% and increase the P₂O₅ content to more than 0.1%, but by doing so would obtain a composition falling outside the

subject-matter defined in claim 1 of the present request.

If, as an alternative, the skilled person started from document A3 as representing the closest state of the art, he would also not arrive at the claimed subject-matter. Indeed - as argued by appellant I - there is a broad overlap between the subject-matter of claim 1 at issue and that of claim 1 of document A3. However, none of the glass fibers exemplified in A3 comprise more than 15.9% Na₂O (i.e. 1.6% below the lowest limit of the Na₂O range defined in claim 1 at issue). Moreover, among those with a SiO₂ content in line with the amount required in claim 1 at issue, none of them has an Al₂O₃ content which would fall within the range defined in claim 1 at issue. So the skilled person starting from A3, in particular from its examples, does not have any incentive to adjust the Na₂O and Al₂O₃ content to the ranges defined in claim 1 at issue.

- 4.4.7 For the above reasons, the board concludes that the subject-matter of claim 1 at issue is not obvious for the skilled person in the light of the disclosures of documents B1 and A3, taken either alone or in combination.
- 4.4.8 The remaining documents cited during the opposition and appeal proceedings do not contain further information pointing towards the claimed solution of the technical problem stated under point 4.4.3.
- 4.5 For the reasons indicated above, the board concludes that the subject-matter of claim 1 at issue, and by the same token that of dependent claims 2 to 6, which

include all the features of claim 1, is not obvious to the skilled person from the cited prior art.

Therefore, the subject-matter of claims 1 to 6 according to the second auxiliary request involves an inventive step within the meaning of Articles 52(1) and 56 EPC.

5. In summary, the patent in its amended form is found to meet the requirements of the EPC.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the department of first instance with the order to maintain the patent on the basis of claims 1 to 6 of the second auxiliary request submitted during the oral proceedings of 28 September 2012, and a description to be adapted accordingly.

The Registrar:

The Chairman:

C. Vodz

G. Rath