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**Datasheet for the decision
of 19 May 2016**

Case Number: T 0528/13 - 3.3.10

Application Number: 08726365.3

Publication Number: 2131877

IPC: A61L24/00, A61L24/06

Language of the proceedings: EN

Title of invention:

BONE CEMENT WITH ADAPTED MECHANICAL PROPERTIES

Applicant:

Synthes GmbH

Headword:

Relevant legal provisions:

EPC Art. 54, 83, 84, 111(1), 123(2)

Keyword:

Sufficiency of disclosure and clarity of claims - (yes) -
reasons for refusal now moot
Novelty - (yes)
Appeal decision - remittal to the department of first instance
(yes)

Decisions cited:

G 0010/93

Catchword:



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Case Number: T 0528/13 - 3.3.10

D E C I S I O N
of Technical Board of Appeal 3.3.10
of 19 May 2016

Appellant: Synthes GmbH
(Applicant) Eimattstrasse 3
4436 Oberdorf (CH)

Representative: Carpmaels & Ransford LLP
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Decision under appeal: Decision of the Examining Division of the
European Patent Office posted on 15 October 2012
refusing European patent application No.
08726365.3 pursuant to Article 97(2) EPC.

Composition of the Board:

Chairman P. Gryczka
Members: J. Mercey
F. Blumer

Summary of Facts and Submissions

- I. The present appeal lies from the decision of the Examining Division to refuse European patent application no. 08726365.3.
- II. *Inter alia* the following documents were cited in the examination proceedings:
- (1) EP-A-111759
 - (2) EP-A-701824 and
 - (3) DE-A-19641775.
- III. The application was refused on the grounds that the subject-matter of the then pending main request and auxiliary request 1 did not fulfil the requirements of Articles 83 or 84 EPC and that of auxiliary request 2 lacked novelty over documents (1), (2) and (3).
- IV. At the oral proceedings before the Board held on 19 May 2016, the Appellant (Applicant) submitted a main request comprising a set of 5 claims, independent claim 1 of which read as follows:
- "1. A method of forming bone cement, comprising:
forming a fluid phase, including mixing methyl methacrylate (MMA) and a polymerising agent;
adding a powder phase to the fluid phase; and
adding N-methyl pyrrolidone to the fluid phase."
- V. The Appellant submitted that the subject-matter of the claims found support in original claims 23 and 31, and thus complied with the requirements of Article 123(2) EPC.

The Appellant further argued that the subject-matter of the claims was novel over documents (1), (2) and (3) because document (1) did not disclose a bone cement comprising N-methyl pyrrolidone at all, and documents (2) and (3) did not disclose a bone cement comprising the specific combination of methyl methacrylate monomer and N-methyl pyrrolidone.

VI. The Appellant requested that the decision under appeal be set aside and that the case be remitted to the department of first instance on the basis of claims 1 to 5 (sole request) as filed during oral proceedings before the Board.

VII. At the end of the oral proceedings, the decision of the Board was announced.

Reasons for the Decision

1. The appeal is admissible.

2. *Amendments (Article 123(2) EPC)*

2.1 Claim 1 is based on original claims 23 and 31, wherein the non-limiting features of "identifying a mechanical property of bone" and "to modify a mechanical property of cured bone cement to substantially match the mechanical property of bone" have been deleted.

2.2 Dependent claims 2 to 4 are based on original claims 24 to 26, respectively. Original claim 18, although being a claim to a bone cement *per se*, provides a basis for claim 5, as it is clear from the Table of the Example, that bone cements with such an elastic modulus may be obtained by the method of claim 1.

2.3 Therefore, the amendments made to the claims do not generate subject-matter extending beyond the content of the application as filed, such that the Board concludes that the requirements of Article 123(2) EPC are satisfied.

3. *Articles 83 and 84 EPC*

The objections in the decision under appeal under Articles 83 and 84 EPC are now moot, as the unclear and insufficiently disclosed feature present in claim 5 of the then pending main request and claim 1 of the then pending auxiliary request 1 giving rise to said objection, namely "adding a miscible substance to the fluid phase, to modify a polymerization reaction between the methyl-methacrylate and the polymerizing agent; and thereby to modify a mechanical property of the cured bone cement to match the identified mechanical property of the bone to be treated" has been replaced by "adding N-methyl pyrrolidone to the fluid phase". Said specific compound is a miscible substance which achieves the desired result and was considered by the Examining Division in the context of the then pending auxiliary request 2 to fulfil the requirements of Article 83 and 84 EPC.

4. *Novelty*

4.1 Documents (1), (2) and (3) are cited in the decision under appeal as anticipating the subject-matter of claims of the then pending auxiliary request 2.

4.1.1 Document (1) discloses a method of making a bone cement, comprising forming a fluid phase comprising methyl methacrylate monomer, dimethyl-p-toluidine and a

non-polymerisable organic liquid which is miscible with methyl methacrylate, such as polyethylene glycol (see Exs. 4 and 5), and adding thereto a powder comprising polymethyl methacrylate (PMMA) and a polymerising agent, namely dibenzoyl peroxide. Various liquid esters and ethers (see claim 1 and Examples 2 to 16) are disclosed as the organic liquids which are miscible with methyl methacrylate which may be added to the fluid phase.

However, document (1) does not disclose a method of making bone cement comprising N-methyl pyrrolidone, only liquid esters and ethers being disclosed as the organic liquids which may be added to the fluid phase, such that the subject-matter of claim 1 is novel with respect to this document.

- 4.1.2 Document (2) discloses a method of making bone cement by mixing a powdery polymer, which optionally contains a polymerisation agent, and a liquid component comprising an acrylic acid ester and/or a methacrylic acid ester monomer, and adding an organic solvent to the liquid or solid component (see claim 1), wherein said solvent may be 2-pyrrolidone, N-methyl pyrrolidone, DMSO, tetrahydrofuran, dioxane, ethylene glycol, propanediol or combinations thereof (see claim 6). The Example of document (2) specifically discloses a method of making bone cement by mixing *inter alia* methyl methacrylate monomer and 2-pyrrolidone, and adding thereto a powder comprising *inter alia* a PMMA/PMA-copolymer, monomer and polymer both containing dibenzoyl peroxide.

However, claim 1 of document (2) discloses only methacrylic acid ester monomers in general, and not **methyl** methacrylate monomer, such that a combination of

claims 1 and 6 of document (2) does not disclose the particular combination of methyl methacrylate and N-methyl pyrrolidone. The Example of document (2) does indeed specifically disclose methyl methacrylate monomer, but in combination with 2-pyrrolidone, and not N-methyl pyrrolidone. Thus, since document (2) does not disclose a method of making bone cement comprising the specific combination of adding N-methyl pyrrolidone to a methyl methacrylate-containing fluid phase, the subject-matter of claim 1 is novel with respect to this document.

- 4.1.3 Document (3) discloses a method of making bone cement by mixing a powdery polymer with a liquid component comprising an acrylic acid ester and/or a methacrylic acid ester monomer, and adding an organic solvent to the liquid component (see claim 1), wherein said solvent may be 2-pyrrolidone, N-methyl pyrrolidone, vinylpyrrolidone, DMSO, tetrahydrofuran, dioxane, ethylene glycol, propanediol or combinations thereof (see claim 4). The powdery polymer contains a polymerisation agent (see page 3, lines 62 to 64). The Examples of document (3) specifically disclose a method of making bone cement by mixing a powder comprising PMMA containing dibenzoyl peroxide with a liquid component comprising methyl methacrylate and propanediol.

However, similarly to document (2), methyl methacrylate monomer is not specifically disclosed in claim 1, such that a combination of claims 1 and 4 of document (3) does not disclose the particular combination of methyl methacrylate and N-methyl pyrrolidone. The Examples of document (3) do indeed specifically disclose methyl methacrylate monomer, but in combination with propanediol, and not N-methyl pyrrolidone. Thus, since

document (3) does not disclose a method of making bone cement, comprising the specific combination of adding N-methyl pyrrolidone to a methyl methacrylate-containing fluid phase, the subject-matter of claim 1 is novel with respect to this document.

- 4.2 Therefore, the Board concludes that the subject-matter of claim 1, and thus also of dependent claims 2 to 5, is novel within the meaning of Articles 52(1) and 54 EPC *vis-à-vis* the disclosures of each of documents (1) to (3).

5. *Remittal*

Having so decided, the Board has not taken a decision on the whole matter, since the decision under appeal dealt exclusively with Articles 54, 83 and 84 EPC. Proceedings before the Boards of Appeal in *ex-parte* cases are primarily concerned with examining the contested decision (see decision G 10/93, OJ EPO 1995, 172, points 4 and 5 of the Reasons), fresh issues normally being left to the Examining Division to consider after a referral back, so that the Appellant has the opportunity for these to be considered without loss of an instance. Special circumstances leading to another conclusion were not given in the present case. The Board thus considers it appropriate to exercise its power conferred on it by Article 111(1) EPC to remit the case to the Examining Division for further prosecution on the basis of the claims according to the request filed during the oral proceedings before the Board in order to enable the Examining Division to decide on the outstanding issues.

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 for further prosecution on the basis of claims 1 to 5 (sole request) as filed during oral proceedings before the Board.

The Registrar:

The Chairman:



C. Rodríguez Rodríguez

P. Gryczka

Decision electronically authenticated