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D E C I S I O N
of 20 April 1998

Case Number: T 0530/94 - 3.3.1

Application Number: 89903542.2

Publication Number: 0387307

IPC: C09K 11/07

Language of the proceedings: EN

Title of invention:
Chemical reactions in reverse micelle systems

Applicant:
Battelle Memorial Institute

Opponent:
-

Headword:
Reverse micelle systems/BATTELLE

Relevant legal provisions:
EPC Art. 84, 111(1)

Keyword:
"Clarity - yes, after amendment"
"Broad claims not unclear (yes)"

Decisions cited:
G 0010/93, T 0238/88, T 0393/91, T 0456/91, T 0688/91

Catchword:
-



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Boards of Appeal

Chambres de recours

Case Number: T 0530/94 - 3.3.1

D E C I S I O N
of the Technical Board of Appeal 3.3.1
of 20 April 1998

Appellant: Battelle Memorial Institute
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Decision under appeal: Decision of the Examining Division of the
European Patent Office posted 10 February 1994
refusing European patent application
No. 89 903 542.2 pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: A. J. Nuss
Members: R. Freimuth
S. C. Perryman

Summary of Facts and Submissions

I. The appeal lies from the decision of the Examining Division posted on 10 February 1994 refusing European patent application No. 89 903 542.2 (European publication No. 0 387 307), published as WO-A-89/05336.

II. The decision of the Examining Division was based on claims 1 to 13 filed on 15 September 1992 and claims 14 to 25 as originally filed according to the then pending request. Claim 1 read as follows:

"1. A method of carrying out chemical reactions in a first reverse micelle or reverse microemulsion system having a substantially discontinuous phase of a polar fluid in a substantially continuous phase of a non-polar or low-polarity fluid;

which is characterised by introducing a first reactant into said first reverse micelle or reverse microemulsion system; maintaining said continuous phase in a near-critical or supercritical state; and carrying out a chemical reaction using said first reactant to form a reaction product."

III. The Examining Division held that claim 1 and some - unidentified - further claims of the then pending request did not meet the requirements of Article 84 EPC. More particularly, the Examining Division considered that claim 1 was too broad and solely comprised of the unclear terms "chemical reaction", "polar, non-polar, low-polar fluids" and that some other - unidentified - claims were too comprehensive in view of the terms "energy source, organic- and inorganic-salts, aqueous fluids, acidic or basic materials". Furthermore the Examining Division questioned that a first reactant cannot react with itself to form a reaction product. Claim 1 must

illuminate the subject-matter in a manner that the skilled reader is able to understand the invention without having to work through the whole description and the examples.

- IV. The Appellant (Applicant) submitted in his Notice of Appeal filed 8 April 1994 that claim 1 and its dependent claims met the requirements of Article 84 EPC. He observed that each of the terms objected to would be clear to the skilled person and that the objection of excessive breadth in the present case was inappropriate. The Appellant relied *inter alia* on decision T 292/85 (OJ EPO 1989, 275) in support of the proposition that giving one way of carrying out an invention was sufficient.
- V. In a communication from the Board pursuant to Article 110(2) EPC objections as to clarity were raised as regards the use of the terms "first" and "substantially continuous/discontinuous phase". The Appellant's attention was also drawn to the documents
- D1: Organized Surfactant Assemblies in Supercritical Fluids, ACS Symposium Series, 373, 92 to 107; and
- D2: J. Amer. Chem. Soc., No. 3 (1987), 920 - 921
- cited in the International Search Report as possibly giving rise to objections as to lack of novelty and inventive step.
- VI. In reply the Appellant filed on 13 May 1997 an amended set of claims 1 to 24, indicating that these overcame all clarity objections, as well as the new objections relating to lack of novelty and inventive step. He submitted that postpublished document D1, which is a report of an earlier held symposium, would not truly

reflect what was actually said at that symposium. The Appellant also submitted that for the Board to decide on newly raised issues would prejudice him by not affording him an opportunity to argue the matter before the Examining Division.

VII. Subsequently, after a telephone conversation with the rapporteur, a revised claim 1 was filed on 16 April 1998 which read as follows:

"1. A method of carrying out chemical reactions in reverse micelle or reverse microemulsion systems having a substantially discontinuous phase of a polar fluid in a substantially continuous phase of a non-polar or low-polarity fluid;

which is characterised by introducing a first reactant and a second reactant into said reverse micelle or reverse microemulsion system; maintaining said continuous phase in a near-critical or supercritical state; and carrying out a chemical reaction using said first and second reactant to form a reaction product."

VIII. The Appellant requested that the contested decision be set aside and that the case be remitted to the Examining Division for further prosecution on the basis of claim 1 filed on 16 April 1998 and claims 2 to 24 filed on 13 May 1997, and that otherwise oral proceedings be appointed.

Reasons for the Decision

1. The Appeal is admissible.

2. *Scope of examination on appeal*

2.1 While Article 111(1) EPC gives the Boards of Appeal the power to raise new grounds in ex-parte proceedings where the application has been refused on other grounds, 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), other objections 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.

2.2 In the present case the Board, thus restricts itself to considering whether the amended claims meet the requirements of Article 123(2) EPC, and whether claim 1 and some of the dependent claims overcome the objections as to lack of clarity pursuant to Article 84 EPC which are stated in the decision under appeal as being the grounds for refusal of the application.

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

3.1 The omission in the claim 1 now put forward of the feature "first" when defining the reverse micelle or reverse microemulsion systems finds support on page 1 line 11 of the application as originally filed. The specification of these systems as "having a substantially discontinuous phase" in a "substantially continuous phase" is supported by original page 1 lines 12 and 19. The presence of a second reactant is based on claim 4 and page 2 lines 11 and 12 of the application as originally filed. Page 1, lines 27 and 30 of the original application provide a basis for the feature of "maintaining" said continuous phase in a near-critical or supercritical state.

3.2 The further claims 2 to 24 find a basis in claims 2, 3 and 5 to 25 as originally filed.

3.3 These claims thus meet the requirements of Article 123(2) EPC.

4. *Article 84 EPC*

4.1 The term "chemical reaction" is self-explanatory and defines a process in which a substance is changed into another (cf. Chambers Science and Technology Dictionary, reprinted 1984, keyword *chemical reaction*). The terms "polar, non-polar, low-polarity" serve to classify the fluids used in the reverse micelle or reverse microemulsion system according to their polarity. All these terms being conventional in the art their technical meaning is known to the skilled person (cf. Römpps Chemie-Lexikon, 8th edition 1983, keyword *Lösungsmittel* page 2397, left column penultimate line to right column line 5). This is further supported by the fact that the application exemplifies as polar fluid aqueous fluids, i.e. water, and as non/low-polar fluids gas, e.g. propane, (cf. application page 1 lines 12, 21 and page 6 line 13). The Board therefore sees no difficulty for a person skilled in the art to interpret the terms objected to and thus considers that under Article 84 EPC second sentence requiring that the claims "shall be clear" no objection arises in respect of these terms.

4.2 Claim 1 now specifies a second reactant to be present in addition to the first reactant and that the chemical reaction uses these reactants. The terms "first" and "second" thus become meaningful, and claim 1 defines unambiguously all those substances involved in the chemical reaction.

- 4.3 The Board finally accepts Appellant's explanation with respect to the term "substantially" defining the discontinuous/continuous phase, namely that it covers situations where there is not a complete phase separation in which case there would be a small amount of polar fluid in the non/low-polar continuous phase and vice versa, thus, reflecting physical reality.
- 4.4 In the contested decision claim 1 and some of the dependent claims have also been objected to under the heading of clarity as being "too broad". However, broadness as such is not equivalent to lack of clarity. It is established case law of the Boards of Appeal that clarity of a claim is not at stake by the mere breadth of a term of art contained in it, if the meaning of such term is unambiguous for a person skilled in the art, either *per se* or in the light of the description (see for example decision T 238/88 (OJ EPO 1992, 709) point 5.1 of the reasons; decision T 393/91 of 12 October 1994, point 2.9 of the reasons; decision T 456/91 of 3 November 1993, point 3.1 of the reasons; and decision T 688/91 of 21 April 1993, point 3.4 of the reasons (the latter not published in OJ EPO)). The terms in claim 1 objected to in the decision under appeal, i.e. "chemical reaction, polar, non-polar, low-polar", are clear as set out above in point 3.1 of this decision. The same applies to some other terms found in dependent claims, namely "energy source, organic- and inorganic-salts, aqueous fluids, acidic or basic materials". Although objected to in the decision under appeal as being "too comprehensive", they also are self-explanatory and well known in the art. All the terms objected to being unambiguous for a person skilled in the art, the result is a claim whose subject-matter is broad but clear. Therefore the present claims cannot be challenged under Article 84 EPC solely for their breadth.

4.5 If an objection intended by the Examining Division was that the description suggested that something was essential to the working of the described invention, but that this essential feature was lacking from the claim 1, so that this claim was not supported by the description contrary to the requirement of Article 84 EPC, then such an objection has not been adequately identified by the Examining Division for the Appellant to respond to it or for the Board to consider it.

4.6 It follows from the above, that by substantially amending refused claim 1, the Appellant has overcome the objections raised in the decision under appeal. The examination not yet having been concluded and the appellant having requested remittal, the Board exercises its power under Article 111(1) EPC to remit the case to the Examining Division for further prosecution.

4.7 The Board has noted some possible inconsistencies and lack of conciseness in the other claims, namely:

- dependent claim 5 is no longer in line with claim 1 having regard to the term "first";
- dependent claim 6 indicates to incorporate the first reactant "into said water-insoluble" fluid although independent claim 1 which it refers to, does not contain this specific feature, but non-polar or low polarity fluids;
- dependent claim 9 indicates the insolubility in "water" although independent claim 1 which it refers to, does not contain this specific feature, but only subsequent claim 10;

- in both dependent claims 9 and 19 the definition of the product as being the "reaction" product is missing;
- claims 18 and 20 are drafted as independent claims although they refer to preferred embodiments within the ambit of claim 1.

Any corrective action is left to the Appellant and the Examining Division.

Order

For these reasons it is decided that:

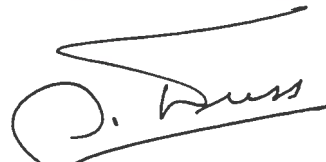
1. The decision under appeal is set aside.
2. The case is remitted to the Examining Division for further prosecution on the basis of claim 1 filed on 16 April 1998 and claims 2 to 24 filed on 13 May 1997.

The Registrar:



P. Martorana

The Chairman:



A. Nuss