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**Datasheet for the decision
of 7 November 2007**

Case Number: T 1126/05 - 3.3.03

Application Number: 99953103.1

Publication Number: 1141029

IPC: C08B 11/20

Language of the proceedings: EN

Title of invention:

Process and apparatus for making cellulose ethers

Patentee:

DOW GLOBAL TECHNOLOGIES INC.

Opponent:

SE Tylose GmbH & Co. KG

Headword:

-

Relevant legal provisions:

EPC Art. 54

Keyword:

"Novelty - yes"

Decisions cited:

T 0079/96

Catchword:

-



Case Number: T 1126/05 - 3.3.03

D E C I S I O N
of the Technical Board of Appeal 3.3.03
of 7 November 2007

Appellant: DOW GLOBAL TECHNOLOGIES INC.
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office dated 05 July 2005 and
posted 28 July 2005 revoking European patent
No. 1141029 pursuant to Article 102(1) EPC.

Composition of the Board:

Chairman: C. Idez
Members: M. Gordon
H. Preglau

Summary of Facts and Submissions

I. Mention of the grant of European Patent No. 1 141 029 in the name of Dow Global Technologies Inc. in respect of European patent application No. 99953103.1, filed on 7 October 1999 as international application No. PCT/US99/23475, published as WO 00/32637 on 8 June 2000, and claiming priority of US patent application No. 09/203,324 dated 1 December 1998, was announced on 28 May 2003 (Bulletin 2003/22) on the basis of 10 claims, claim 1 of which read as follows:

"1. A process for making a cellulose ether, comprising:

- a) alkalizing a cellulose pulp;
- b) etherifying the alkalized cellulose pulp to form a cellulose ether;
- c) washing the cellulose ether;
- d) drying the cellulose ether to a reduced moisture content;
- e) milling the cellulose ether to a particulate form;
- f) adjusting the temperature of the particulate cellulose ether to 50°C to 130°C;
- g) continuously tumbling the particulate cellulose ether in a reactor, the reactor being rotated axially or end over end in an oven or a controlled-temperature chamber or room while simultaneously contacting the cellulose ether with an acid to partially depolymerise the cellulose ether such that a two percent aqueous solution of it has a viscosity of 200 cP or less at 20°C; and
- h) partially or substantially neutralizing the acid by contacting it with a basic compound."

Claims 2-7 were directed to preferred embodiments of the process of claim 1.

Claim 8 was an independent apparatus claim and read as follows:

"8. An apparatus for making cellulose ethers, comprising:

- a) a first reactor for alkalizing and etherifying a cellulose pulp to form a cellulose ether;
- b) a washer for washing the cellulose ether;
- c) a dryer for drying the cellulose ether to a reduced moisture content;
- d) a mill for milling the cellulose ether to a particulate form;
- e) a second reactor which is adapted to tumble the particulate cellulose ether by axial rotation or rotation end over end while contacting it with an acid and subsequently with a basic compound, the reactor being located in an oven or a chamber or room adapted for temperature control."

Claims 9 and 10 were directed to preferred embodiments of the apparatus of claim 8.

II. Notices of opposition against the grant of the patent were filed on 15 January 2004 by Wolff Cellulosics GmbH & Co. KG (OI) and on 21 February 2004 by SE Tylose GmbH & Co. KG (OII).

Both opponents invoked the grounds of opposition pursuant to Art. 100(a) EPC. Specifically, it was submitted that the subject matter of independent claims 1 and 8 of the patent in suit was neither novel

(Art. 54 EPC) nor founded on an inventive step (Art. 56 EPC).

The following document, *inter alia* was cited in support of the oppositions:

D3': EP-B-210 917.

In their written submissions both opponents took the position that steps a)-e) of claim 1, leading to the cellulose ether were implicitly disclosed in the prior art, for example D3'. It was also submitted that feature f) of claim 1 was explicitly disclosed in D3'. This position was accepted by the proprietor at the oral proceedings before the opposition division insofar as features a)-e) were concerned. It was however disputed that feature f) was disclosed by D3'.

III. By a decision announced orally on 5 July 2005 and issued in writing on 28 July 2005 the opposition division revoked the patent.

The decision was based on a main request, consisting of the claims of the patent as granted and three auxiliary requests, all submitted during the oral proceedings before the opposition division.

(a) With respect to the main request (claims as granted), the decision held that feature f) was anticipated by the disclosure of D3'. The decision further held that the term "room" in feature g) of claim 1 was to be interpreted in a broad way as meaning "an extent of space occupied by or sufficient or available for something" and not in

a narrow way as "room of a building", "closed system", or "space filled with gas". The term "room" could only be interpreted in this narrow fashion if such definition was unambiguously derivable from the patent or the prior art which however was not the case for the term "room" in the patent in suit. Accordingly, the disclosure of a water bath in document D3' was considered to correspond to the "controlled-temperature room" of claim 1, feature g).

(b) The further features introduced into the claims of the auxiliary requests were likewise held not to establish novelty over D3'.

(c) Accordingly the patent was revoked.

IV. The proprietor, now the appellant, filed an appeal against this decision on 31 August 2005, and paid the fee on the same day.

V. The statement of grounds of appeal was filed on 25 November 2005.

(a) It was requested that the decision of the opposition division be set aside and the patent be maintained unamended. As an auxiliary request maintenance of the patent in amended form on the basis of a set of 9 claims was requested. Claim 1 of this set differed from claim 1 as granted in that in section g) it was specified that an anhydrous gaseous acid was employed. As a consequence granted claim 4 was deleted and the following claims renumbered. A corresponding

amendment was made to section e) of claim 7 (formerly claim 8).

(b) With respect to novelty, it was submitted that the feature "an oven or a controlled temperature chamber or room" related to extents of space entirely surrounded by solid walls which were continuous and uninterrupted, whereby a room was larger than a chamber and a chamber larger than an oven.

A water bath, as employed in D3' had no upper wall and hence was not entirely surrounded by solid walls. Accordingly the term "water bath" did not fall within the scope of the term "room".

It was further submitted that it was clear that the flask was not "in" the water bath but only partially immersed therein.

VI. The opponents, now respondents, replied in letters received 10 April 2006 (OII) and 2 June 2006 (OI). The appellant's interpretation of "room" was disputed. The respondents pleaded for the broader definition employed by the opposition division (see section III.(a) above).

Inter alia the following document was cited:

D27: Perry's Chemical Engineers' Handbook, 7th Edition, Perry, R.H., Green, D.W. (Ed) 1997, pages 11-64 and 12-66.

Accordingly the subject matter of claim 1 of the main request lacked novelty. It was also submitted that this disclosure anticipated the subject matter of claim 8 of the main request.

VII. By a letter dated 21 June 2007 OI withdrew its opposition.

VIII. On 10 August 2007 the board issued a summons to attend oral proceedings.

In a communication, dated 27 August 2007 the board provisionally held that the term "room" as employed in operative claim 1 was to be interpreted in the narrow sense petitioned by the appellant. The consequence of this interpretation would be that the subject matter of the main request would be considered not to be anticipated by the disclosure of D3'.

IX. In a submission of 3 October 2007 the appellant indicated agreement with the provisional view of the board with respect to novelty.

X. Oral proceedings were held on 7 November 2007.

(c) The appellant submitted that the decision under appeal had applied an incorrect linguistic interpretation of the term "room". Further, from the technical features of the claim it was evident that the reactor was located **in** an oven, chamber or room, which was enclosed. Were the room not enclosed or the reactor partially outside the room then the feature "controlled-temperature" would be meaningless. The interpretation of the opposition

division according to which the term "room" encompassed a water bath was submitted to be an inadmissible *ex post facto* interpretation, influenced by the disclosure of D3'.

It was further submitted that the interpretation of terms in a claim of a patent had to be technically meaningful. Although the term "room" had many definitions it was not possible to interpret this as encompassing a water bath. With regard to the temperature range of 50°C to 130°C specified in step f) of claim 1 (see sections I and II above) the appellant conceded that this feature was anticipated by the temperature range of 60-80°C disclosed at page 3 line 19 of D3'.

- (d) The respondent referred to decision T 79/96 (20 October 1998, not published in the OJ EPO), according to which when assessing novelty an expression in a claim must be given its broadest technically sensible meaning.

Rooms could in any case take many forms, including without a ceiling. The claims of the patent in suit imposed no restriction on the size or shape of the room.

D3' disclosed that the reaction vessel was tumbled in a water bath. It was disputed that this necessarily implied any specific configuration, for example a "Rotovap" apparatus, which equipment was in any case not intended for use as a reaction vessel. It was also within the scope of the claims to employ a cylindrical reaction vessel in a water bath as described in D27, figure 11-59a.

Regardless of the type of apparatus employed, the

disclosure of D3' encompassed the possibility that the vessel was entirely submerged in the water. It also could not be excluded that the water bath was provided with a lid so that it was enclosed on all sides and not open to the air. Even in the case that the vessel was only partially submerged, a water film would remain on the part of the vessel emerging from the water and, as it would not immediately detach itself from the surface of the vessel, would maintain the heat transfer. This was shown in D27, page 11-64 figure 11-59a.

Accordingly, a water bath such as disclosed in D3' - whether entirely or partially submerging the vessel, and whether or not provided with a lid - provided an environment with even temperature distribution. This was therefore technically equivalent to the effect of a controlled temperature room.

- (e) With regard to the issue of inventive step, while the appellant requested that the case be remitted to the first instance for consideration thereof, the respondent indicated its preference for the board to deal with this at the oral proceedings.

XI. The appellant (patentee) requested that the decision under appeal be set aside and that the case be remitted to the first instance for further prosecution on the basis of the main request (claims as granted), or in the alternative on the basis of the auxiliary request submitted with letter dated 22 November 2005.

The respondent (opponent II) requested that the appeal be dismissed.

Reasons for the Decision

1. The appeal is admissible.

Main request

2. *Novelty*

As noted in section II above there is consensus among the parties that features a)-e) of claim 1 are known in the prior art, specifically D3'.

The appellant also conceded at the oral proceedings before the board that feature f) is known in D3' (see section X.(a) above).

The issue in dispute is the definition of the term "room" as employed in subparagraph g) of claim 1, the relevant part of which reads as follows (emphasis added by the board):

"g) ...the reactor being rotated axially or end over end **in an oven or a controlled temperature chamber or room...**".

- 2.1 *The meaning of the term "room" as employed in claim 1*

- 2.1.1 From the construction of the highlighted part of the claim, it is apparent that the term "room" is disclosed in conjunction with the indefinite article "a", even though not in direct juxtaposition therewith. In languages with a plurality of genders for non-personal nouns (for example German) it is usual or even necessary to precede each noun by the appropriate definite or indefinite article. This is however not the

case in the English language wherein non-personal nouns are all neuter. Accordingly the correct construction of the indicated phrase of the claim is that the indefinite article "a" applies both to "controlled temperature chamber" and to "room" such that the claim would be understood to read "...in an oven or a controlled temperature chamber or **a** controlled temperature room".

- 2.1.2 As the board noted in the communication (see section VIII above), the term "room" occurs in the English language in two forms, namely the non-countable (or "mass") noun and the countable (or "count") noun.
- 2.1.3 The non-countable, or mass noun "room" (i.e. the form which cannot be modified by a numeral or by a quantificational determiner and cannot occur in singular or plural form) corresponds to the broader definition, i.e. "an extent of space occupied by or sufficient for something". It was this definition which was employed in the decision under appeal (see section III.(a) above).
- 2.1.4 However the countable noun "room" (i.e. the form which can be modified by a numeral or by a quantificational determiner and occurs in both singular and plural form) refers to an enclosed space, e.g. a room in a building, having walls, a ceiling and a floor, i.e. bounded on all sides.
- 2.1.5 Since, as explained in section 2.1.1 above the term "room" is employed in the claim in conjunction with the indefinite article "a" which, denoting "one" is a quantificational determiner, it follows that the claim

employs the countable noun "room". Accordingly, the "broadest technically sensible meaning" of the term "room" (cf. T 79/96, cited by the respondent at the oral proceedings, reasons 2.1.3) is that of an enclosed space bounded on all sides and not some other type of undefined, unbounded volume.

2.2 *The disclosure of D3'*

According to the examples of D3' a glass-made vessel of 2 litres capacity was tumbled in a water bath at 75°C. No details of the form of this water bath are given. In particular it is not stated whether this is open to the air or is in some way enclosed such as by being provided with a lid, thus forming a volume bounded on all sides which would fall within the terms of "oven", "chamber" or "room" as employed in the claim.

In particular D3' does not disclose the extent to which the vessel is immersed in the water bath.

Accordingly the water bath as disclosed in D3' does not anticipate feature g) of operative claim 1.

2.3 At the oral proceedings before the board, the respondent argued, with reference to the disclosure of D27 that the water bath of D3' was technically equivalent to an oven in that it provided a controlled temperature environment (see section X.(b) above).

2.3.1 However according to the consistent case law of the boards of appeal, a narrow concept of novelty is applied such that the disclosure of a prior art document does not include equivalents (see "Case Law of the Boards of Appeal of the European Patent Office", 5th Edition 2006, section I.C.2.5.)

Therefore this approach is invalid and cannot succeed.

2.3.2 In any case, in advancing this argument the respondent makes a number of assumptions about D3', concerning *inter alia*:

- The extent to which the glass vessel is covered by the water;
- Whether the water bath is provided with a lid or is open to the air;
- The geometry of the vessel;
- The angle of inclination thereof to the surface of the water bath;
- The speed of rotation;
- The nature of the surface of the vessel.

However none of these parameters is disclosed, even implicitly, in D3'.

2.3.3 Accordingly, even in the case that the EPC and the Case Law were to consider technical equivalents to constitute valid novelty-destroying disclosures, the evidence of D3' does not allow it to be concluded that the conditions disclosed therein did constitute such a technical equivalent of "an oven or a controlled temperature chamber or room".

2.4 Since D3' does not disclose the features of subsection g) of claim 1 (main request) the subject matter of claim 1 of the main request is novel. The subject matter of claims 2-7 of the main request, which are dependent on claim 1 is accordingly also novel.

- 2.5 This conclusion applies *mutatis mutandis* to the subject matter of apparatus claim 8 of the main request.

Accordingly the subject matter of claim 8 of the main request, and of the dependent claims 9 and 10 is also novel.

3. As indicated above in section III the opposition division revoked the patent on the ground of lack of novelty, and as a consequence did not express its opinion in respect of the ground of lack of inventive step.

Having regard to the request of the appellant for remittal, the board considers it appropriate to make use of its discretionary power under Art. 111(1) EPC and to remit the case to the first instance for further prosecution.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the first instance for further prosecution on the basis of the main request.

The Registrar:

The Chairman:

E. Görgmaier

C. Idez