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**Datasheet for the decision
of 21 March 2025**

Case Number: T 0406/23 - 3.3.03

Application Number: 16195370.8

Publication Number: 3205671

IPC: C08B11/08, C08L1/28, C08B11/20

Language of the proceedings: EN

Title of invention:

POROUS WATER-SOLUBLE NONIONIC CELLULOSE ETHER HAVING EXCELLENT SOLUBILITY AND METHOD FOR PRODUCING THE SAME

Patent Proprietor:

Shin-Etsu Chemical Co., Ltd.

Opponent:

DuPont Nutrition Biosciences ApS

Relevant legal provisions:

EPC Art. 100(b), 54, 56
RPBA 2020 Art. 12(4)

Keyword:

Amendment to case - amendment admitted (yes)
Grounds for opposition - insufficiency of disclosure (no)
Novelty - availability to the public - (yes)
Inventive step - (yes)



Beschwerdekammern

Boards of Appeal

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Case Number: T 0406/23 - 3.3.03

D E C I S I O N
of Technical Board of Appeal 3.3.03
of 21 March 2025

Appellant: DuPont Nutrition Biosciences ApS
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Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 19 December
2022 rejecting the opposition filed against
European patent No. 3205671 pursuant to Article
101(2) EPC.**

Composition of the Board:

Chairman D. Semino
Members: D. Marquis
L. Basterreix

Summary of Facts and Submissions

I. The appeal lies against the decision of the opposition division to reject the opposition filed against European patent No. 3 205 671.

II. Granted claims 1, 4 and 7 read as follows:

"1. A porous water-soluble nonionic cellulose ether having an average pore size of 36 μm or smaller and an average particle size of from 30 to 300 μm , where the average pore size is measurable using a mercury intrusion porosimeter on 0.05g of the cellulose ether at initial mercury pressure of 7 kPa, and where the average particle size is measurable using a laser diffraction particle size distribution analyser at a measurement concentration of 2% by weight, a measurement time of 2 seconds and a shape factor of 1.0."

"4. A method for continuously producing a porous water-soluble nonionic cellulose ether having an average pore size of 36 μm or smaller and an average particle size of from 30 to 300 μm , comprising the steps of:

pulverizing a first water-soluble nonionic cellulose ether to obtain a first pulverized product, and
sieving the first pulverized product through a sieve having an opening of from 40 to 400 μm to obtain a first residue-on-sieve and a first sieve-passing fraction,
wherein a portion or all of the first residue-on-sieve containing particles having particle sizes smaller than and greater than the opening of the

sieve is re-pulverized together with a second water-soluble nonionic cellulose ether in the step of pulverizing to obtain a second pulverized product, which is sieved to obtain the porous water-soluble nonionic cellulose ether as a second sieve-passing fraction containing the re-pulverized particles; and

wherein each of the first and second residues-on-sieve contains 10% by weight or more of particles having particle sizes smaller than the opening of the sieve."

"7. A method for continuously producing a porous water-soluble nonionic cellulose ether having an average pore size of 36 μm or smaller and an average particle size of from 30 to 300 μm , comprising the steps of:

pulverizing a first water-soluble nonionic cellulose ether to obtain a first pulverized product, and

sieving the first pulverized product through a sieve having an opening of from 40 to 400 μm to obtain a first residue-on-sieve and a first sieve-passing fraction,

wherein a portion or all of the first residue-on-sieve containing particles having particle sizes smaller than and greater than the opening of the sieve, and a portion of the first sieve-passing fraction, are re-pulverized together with a second water-soluble nonionic cellulose ether in the step of pulverizing to obtain a second pulverized product, which is sieved to obtain the porous water-soluble nonionic cellulose ether as a second sieve-passing fraction containing the re-pulverized particles."

III. The following documents were *inter alia* cited in the opposition proceedings:

- D1: Declaration by Dr. Matthias Knarr dated 7 December 2020
- D3/D3a: Shin-Etsu USP Hypromellose METOLOSE SR, printed 2000
- D6: Reports of particle size distributions obtained with measurements with a HELOS&RODOS laser diffraction particle size analyser of Sympatec GmbH filed with the notice of opposition
- D10: US 2001/0025101 A1
- D17a-d: Excerpts of shin-Etsu webpage order form for Metolose® types of years 2013 and 2015
- D18: Academical thesis of J. Tonnelier, 2008
- D19: JP 2014-20582 A

IV. The decision under appeal, as far as it is relevant to the present appeal, concluded that granted claim 1 was sufficiently disclosed, that D1 and D3 were not part of the state of the art and that on that basis novelty and inventive step were to be acknowledged.

V. The opponent lodged an appeal against the decision of the opposition division and submitted documents D24 (Brochure "Metolose SR", ShinEtsu (5/2005)) and D25 (wayback tracker webpage ShinEtsu) with their statement of grounds of appeal.

VI. Oral proceedings before the Board were held on 21 March 2025.

VII. The final requests of the parties were as follows:

- The appellant (opponent) requested that the decision under appeal be set aside and the patent be revoked. In addition the appellant requested that documents D24 and D25 be admitted into the proceedings.
- The respondent (patent proprietor) requested that the appeal be dismissed, or in the alternative, that the patent be maintained on the basis of the claims of auxiliary requests 1-3 filed on 10 June 2021 or auxiliary requests 4 and 5 filed on 12 September 2022. In addition the respondent requested that documents D24 and D25 not be admitted into the proceedings.

VIII. The parties' submissions, in so far as they are pertinent, may be derived from the reasons for the decision below. The disputed points concerned the admittance of documents D24 and D25 into the proceedings, sufficiency of disclosure of granted claim 1, novelty of granted claim 1 over D1 and D3/D3a/D24 as well as inventive step in view of D3/D3a/D24.

Reasons for the Decision

Main request (claims as granted)

1. Admittance of D24 and D25
 - 1.1 The appellant submitted documents D24 and D25 with their statement of grounds of appeal. The admittance of these documents into the appeal proceedings was contested by the respondent (rejoinder, section C).
 - 1.2 The appellant argued that D24 and D25 were filed in appeal in order to address the conclusion of the

opposition division on the public availability of D3/D3a.

1.3 It is apparent from the facts of the case that the objection against the public availability of D3/D3a was raised during the oral proceedings before the opposition division for the first time (minutes, page 2, last three paragraphs and decision under appeal, page 13, second paragraph). It is also apparent that the appellant, then opponent, tried to address the objection by filing at that stage after a 1-hour break of the oral proceedings documents which were not admitted into the proceedings by the opposition division (decision under appeal, section 2.3.2.1). In view of this, the Board finds that the filing of D24 and D25 at the earliest point in time in appeal can be considered as a legitimate reaction to a point raised at the last opportunity at the oral proceedings before the opposition proceedings.

1.4 The Board therefore finds it appropriate to exercise its discretion under Article 12(4)-(6) RPBA by admitting documents D24 and D25 into the appeal proceedings.

2. Sufficiency of disclosure

2.1 Sufficiency of disclosure of the granted claims (main request) was dealt with in section 2.2 of the decision under appeal. The opposition division addressed the determination of the average particle size (section 2.2.1-2.2.2) and the question of reproducibility of the invention (sections 2.2.3-2.2.7) and came to the conclusion that a skilled person would know how to measure the average particle size referred to in the claims and to perform the subject matter of the claims

over their whole scope. The appellant contested these conclusions in appeal (statement of grounds of appeal, sections 3.1 to 3.3).

2.2 Claim 1 as granted concerns a porous water-soluble nonionic cellulose ether which is defined by an average pore size of 36 μm or smaller and an average particle size of from 30 to 300 μm whereby claim 1 specifies that the average particle size is measurable using a laser diffraction particle size distribution analyser at a measurement concentration of 2% by weight, a measurement time of 2 seconds and a shape factor of 1.0.

2.3 The appellant argued that the granted claims were insufficiently disclosed because the patent did not disclose which average particle size was meant and which method had to be used for its determination (statement of grounds of appeal, pages 2 and 3). The appellant in particular argued that there were several types of average particle sizes such as the Sauter mean diameter (SMD) or the volume mean diameter (VMD) which differed significantly from one another. The different measurements of average particle sizes reported in D1 (Table 1) showed that the values of average particle size of a given product differed depending on which type of particle size was considered (median based on volume distribution, Sauter mean diameter or volume mean diameter). This meant that the mention of the average particle size without specifying which type of particle size was used in granted claim 1 created an ambiguity as to the values of average particle size defined in granted claim 1, which resulted in lack of sufficiency of disclosure.

- 2.4 The Board does not see how that ambiguity in the definition of the type of average particle size would prevent a skilled person from obtaining the porous water-soluble nonionic cellulose ethers as defined in granted claim 1. Granted claims 4 and 7 disclose two methods for obtaining the particles which are shown in the examples of the patent in suit and which were not shown by the appellant not to lead to a product according to granted claim 1.
- 2.5 In fact, D1 describes the measurement of average particle size of several samples of porous water-soluble nonionic cellulose ethers with a laser diffraction particle size distribution analyser as referred to in granted claim 1. It is apparent from D1 that the analyser gives in one measurement the values of the relevant average particle sizes as $X_{50.3}$ (medium based on volume distribution), SMD (Sauter mean diameter) and VMD (volume mean diameter) as shown in table 1. In this respect D1 shows that there would be no difficulty for a skilled person in obtaining a value of the average particle size of each type in one measurement for several porous water-soluble nonionic cellulose ethers which fall under the definition of granted claim 1.
- 2.6 D1 indeed shows that for a given sample of porous water-soluble nonionic cellulose ether the laser diffraction method provides values of average particle size based on $X_{50.3}$, SMD and VMD that differ from one another. Thus, for sample 1 table 1 of D1 discloses a $X_{50.3}$ of 72.5 μm , SMD of 55.5 μm , and VMD of 96.1 μm . Among the five samples of porous water-soluble nonionic cellulose ethers reported in table 1, all but one sample appear to be according to the range of average particle size and average pore size defined in granted

claim 1. While the average particle size based on SMD for sample 5 (29.1 μm) is just below the range defined in granted claim 1 (30-300 μm), the Board derives from table 1 that the range of granted claim 1 is in itself not a particularly difficult range to achieve. The differences between the values and the fact that one type of average particle size in one case (SMD for sample 5) does not fall under the claimed range show that there might be some ambiguity concerning the definition of the average particle size in granted claim 1 but that as such is not evidence of a lack of sufficiency of disclosure as long as products according to claim 1 can be obtained without undue burden. The appellant seems to consider that in order for granted claim 1 to be reproducible the definition of the average particle size must be such that the claimed subject matter must solve the problem laid out in the patent in suit. The question of whether an effect is achieved is however a question that is relevant to inventive step but not to sufficiency of disclosure when, as in the present case, the wording of granted claim 1 does not require any effect to be achieved and does not define the problem to be solved.

- 2.7 The appellant additionally relied on decision T 1305/15 in support of their argumentation (statement of grounds of appeal, page 2, penultimate paragraph). The present Board, however, finds that the case at hand is not comparable to T 1305/15 where an embedding of the outer side of a claimed membrane (the embedding being applied for the purpose of measurement) had such an influence on the measurement of the claimed parameter (namely the "zeta potential on the inner surface [of the membrane]") that "an extensive research programme" was required for its selection (Reasons 4.12 and 4.17). In the case at hand, the board does not see such an

influence of an external entity as the embedding in T 1305/15.

2.8 The appellant additionally raised in the statement of grounds of appeal issues relating to the lack of a definition in the patent in suit of the type of derivatization and the degree of substitution of the porous water-soluble nonionic cellulose ethers (passage bridging pages 3 and 4), the lack of a lower limit of the pore size range in granted claim 1 (page 4, second paragraph), the lack of guidance about the pulverization conditions (section 3.2) and the case of a particle distribution with particles of very different sizes (section 3.3). For all these objections, however, the appellant did not support their argumentation with verifiable facts that would have been necessary to justify any serious doubt that the alleged issues would prevent a skilled person relying on the teaching of the patent and on their common general knowledge from obtaining a porous water-soluble nonionic cellulose ether according to granted claim 1 or performing the methods of granted claims 4 and 7.

2.9 The Board therefore concludes that it has not been shown that the ground under Article 100(b) EPC prejudices the maintenance of the patent as granted.

3. Novelty

3.1 Novelty of the granted claims was addressed with respect to D1 (prior use) and D3/D3a (brochure) in the decision under appeal. The opposition division came to the conclusion that it had not been proven that the five samples relied upon in D1 had been made available to the public before the priority date of the patent in

suit (decision under appeal, page 10, last full paragraph and section 2.3.1.3). It was also concluded that it had not been established that the brochure D3/D3a was made available to the public before the priority date of the patent in suit (section 2.3.2.2). The appellant contested these conclusions (statement of grounds of appeal, section 4).

3.2 D1 is a declaration of Dr. Knarr including an experimental report showing measurements of average pore size, average particle size and loose bulk density of five samples. According to the declaration, Dr. Knarr was asked to collect five retain samples (samples 1-5) of commercially available cellulose ethers that his "employer or an affiliated company" had obtained before 27 October 2015, i.e., the priority date of European patent EP 3 205 671 B1, and that were allegedly properly stored in a collection of retain samples.

3.3 The opposition division addressed the allegation of public prior use and analysed the following conditions according to established case law of the Boards of Appeal:

(i) when the prior use occurred, (ii) what was made available to the public through that use and (iii) the circumstances of the use, i.e. where, how and by whom the subject-matter was made public through that use (Case Law of the Boards of Appeal, 10th Edition 2022, I.C.3.2.4.a).

3.4 In view of the evidence put forward by the opponent in D1 in the form of a declaration and photos of five samples bearing dates (D1, pages 5 and 7, samples 1 and 2, date: November 2012; pages 9, 11 and 13 samples 3 to 5, date: 19.06.09), the opposition division concluded

that the evidence was insufficient to establish that the samples had been made publicly available before the priority date of the patent in suit. The appellant contested that conclusion in appeal (statement of grounds of appeal, sections 4.2-4.5).

3.5 It is apparent from D1 that each of the five different retain samples Dr. Knarr was asked to collect (D1, page 1, fifth paragraph) formally constitutes an allegation of public prior use in itself. The passage on section B on page 3 of D1 states that retain samples 1-5 corresponded to products that were commercially available before the priority date of the patent in suit and the appellant further stated that the samples could be bought without confidentiality agreement (statement of grounds of appeal, page 10, last paragraph).

3.6 Dr. Knarr suggests on the first page of his declaration in D1 that his employer (DDP Specialty Products Germany GmbH & Co. KG, formerly Dow Wolff Cellulosics GmbH & Co. OHG and Wolff Cellulosics GmbH & Co. KG) "or an affiliated company" somehow obtained the retain samples but there is no further detail on the circumstances of the procurement of these samples that could contribute to establish the alleged public availability of the products, such as from whom the retain samples were bought, to whom the retain samples were delivered (it cannot be inferred from the declaration that Dr. Knarr himself received the retain samples before the priority date of the patent in suit), when the samples were effectively delivered to the company of the appellant and whether any confidentiality condition was present.

3.7 The appellant referred to the photos of the retain samples on pages 5, 7, 9, 11 and 13 of the experimental

report contained in D1 as evidence of the public availability of the samples. The appellant relied on the date printed on the container of the retain samples 1 and 2 ("Nov. 2012") but it is apparent from the arguments laid out in the statement of grounds of appeal (page 7, last paragraph) that the meaning of that date was unclear to the appellant themselves as it was acknowledged that the date on the samples could be a manufacturing date and not a delivery date. In this respect, it is apparent that D1 does not clarify the source and delivery date of retain samples 1 and 2, nor the conditions of the sale. The appellant also relied on the print "E=19.06.09" visible at the bottom of samples 3-5 as the date at which the samples were received in the laboratory of the appellant (D1, page 9, first paragraph). Further information on the circumstances of the sale and effective delivery of the retain samples 3-5 are however not provided in D1. The appellant contends that "E=19.06.09" is the date of receipt of the samples that was printed by their recipient at the laboratory of the appellant. No evidence was however provided to confirm that assertion, nor any evidence concerning the conditions of the sale.

- 3.8 D1 therefore does not establish the circumstances of the public prior use of retain samples 1-5. The appellant also acknowledged that they could not present any further evidence of the obtainment of retain samples 1-5 through sale because a voucher or a delivery receipt for any of these sales could not be found any more. Where lack of novelty is alleged, however, the burden of proof lies with the party claiming that the information in question was made available to the public before the relevant date. In the present situation, the appellant has not provided

evidence of the alleged sale and delivery of the retain samples 1-5 of D1, nor of a lack of confidentiality agreement.

3.9 The appellant also referred to D17a-d to provide further evidence concerning the products of retain samples 3 and 4. D17a-d are web archive printouts of datasheets concerning the METOLOSE products dating from 5 November 2013 (D17a and b), 15 July 2015 (D17c) and 14 May 2015 (D17d), before the priority date of the patent in suit (27 October 2015). D17a-d provide technical data on several types of METOLOSE products, in particular those of the 90SH series (that would be of the same family as those of sample 3 (METOLOSE 90SH-4000 SR) and sample 4 (METOLOSE 90SH-100000 SR) of D1), such as their degree of substitution, their substituents and their viscosity grades. There is no data on the average particle size or average pore size of the products in D17a-d and there is more broadly no information on the METOLOSE products in D17a-d from which it could be concluded that the specific products disclosed in samples 3 and 4 of D1 corresponded to the products in D17a-d and were made available to the public when they were published. In this respect the Board does not see how D17a-d could provide relevant insight on the public availability of the specific samples 3 and 4 of D1.

3.10 The appellant additionally referred to D3/D3a as evidence showing that the products of the family METOLOSE 90SH-SR (to which samples 3 (METOLOSE 90SH-4000SR) and 4 (METOLOSE 90SH-100000SR) of D1 belong) had been made available to the public in 2000 (statement of grounds of appeal, page 10, second to fourth paragraphs) and also as a basis for a separate objection of lack of novelty. D3/D3a bears the mention

"Printed 2004.5 /2000" on its last page (page 18) and the mention "Contents of statements in this catalogue as well as the above statements were written on May 15, 2004" on page 17. Sections 2.3.2.2 and 2.3.3 of the decision under appeal however concluded that the reference to the printing date in D3/D3a did not establish the date at which D3/D3a were available to the public.

3.11 The appellant submitted documents D24 and D25 in appeal in order to address the conclusion of the opposition division on the public availability of D3/D3a.

3.11.1 D24 is a brochure found at the web address (http://metolose.ru/files/metolose_sr.pdf) differing from D3/D3a in that the pages are not numbered and the document bears the reference "Printed 2005.5/2000" instead of "Printed 2004.5/2000". It was not disputed that there were no differences as to the technical content of D3/D3a and D24. D25 contains the results of a search for D24 on a web archive. D25 shows on its fourth and fifth pages that D24 was accessible on the internet at a date of 26 November 2010, before the priority date of the patent in suit (27 October 2015). While D25 formally does not concern D3/D3a, it can still show that the technical content of D3/D3a as evidenced by D24 was made publicly available on the internet at the latest on 26 November 2010. Since D3, D3a and D24 refer to the same technical content, the documents will be referred to as D3/D24 hereafter.

3.12 D3/D24 shows the properties of a family of products based on Hypromellose, METOLOSE SR. D3/D24 discloses several types of METOLOSE products (Table 2: SM, 60SH, 65SH and 90SH), an average particle size of around 50 µm being given for METOLOSE SR products (page 4,

penultimate paragraph). D3/D24 further provides information on the use of these products as a hydrophilic matrix agent (page 2, first paragraph) to release encapsulated drugs in water (page 3). There is however no disclosure of an average pore size for any of these products in D3/D24 contrary to the requirement of granted claim 1 (average pore size of 36 μm or smaller). In view of this, no lack of novelty can be established on the basis of D3/D24 alone.

3.13 The remaining question with respect to D3/D24 was whether the product family METOLOSE SR and in particular the specific products METOLOSE 90SH-4000 SR and METOLOSE 90SH-100000 SR disclosed in D3/D24 corresponded to the products of retain samples 3 and 4 bearing the same names disclosed in D1 for which an average pore size was determined. The appellant argued that the products of D3/D24 which include METOLOSE 90SH-SR had an average particle size (sieve analysis) of 40-60 μm (statement of grounds of appeal, page 10, second paragraph).

3.14 The part "Effect of particle size" on page 4 of D3/D24 mentions an average particle size of around 50 μm for METOLOSE SR products which is congruent with the value ($D_{50}=52 \mu\text{m}$) provided in Figure 5 for the product corresponding to 90SH-4000 SR in Figure 4. It is, however, apparent that this average particle size disclosed in D3/D24 for METOLOSE 90SH-4000 SR does not correspond to any of the values of average particle size shown in table 1 of D1 for allegedly the same product ($X_{50.3}$ of 72.5 μm , SMD of 38.1 μm , and VMD of 90.8 μm). It was acknowledged, as argued by the appellant on the basis of Figure 8 of D3/D24, that values of the average particle size measured by sieving, as it is the case for the overall range of

40-60 μm for generic METOLOSE SR products shown in table 6 of D3/D24 (page 8), are generally lower than when laser diffraction is used, but there was no further evidence in D3/D24 from which it could be ascertained that the products shown there were the same as the products of samples 3 and 4 in D1.

3.15 The appellant further argued that the diagrams showing the particle size distribution of METOLOSE SR in Figure 8 of D3/D24 and of METOLOSE 90SH-100000 SR on page 12 of D1 corresponded "fully and exactly" (statement of grounds of appeal, page 10, second paragraph). The appellant concluded that the comparison of these diagrams established that the particle sizes of retain sample 4 in D1 corresponded exactly to the particle sizes as disclosed by the patentee for Metolose® 90SH-SR in figure 8 of D3/D24 (40-60 μm).

3.16 This assertion was however refuted by the respondent at the oral proceedings before the Board, showing that there were subtle but significant differences between the diagrams of Figure 8 of D3/D24 and page 12 of D1. As an example, Figure 8 of D3/D24 showed a compound containing around 10% volume of particles smaller than 20 μm whereas the table on page 4 of D6 for METOLOSE 90 SH-100000 SR disclosed that the same product tested on page 12 of D1 would contain only 7.15% volume of particles in the same range. These differences were considered to be small by the appellant but they nevertheless raise doubts as to whether METOLOSE SR in Figure 8 of D3/D24 and of METOLOSE 90SH-100000 SR on page 12 of D1 are comparable products in terms of their compositions and their properties. Since the respondent raised reasonable doubts as to the comparison of the products METOLOSE SR and METOLOSE 90SH-100000 SR shown in Figure 8 of D3/D24 and page 12 of D1, the Board does

not see how it could be concluded that the product METOLOSE SR according to Figure 8 of D3/D24 corresponded to any of retain samples 3 or 4 of D1.

3.17 The Board therefore came to the conclusion that it could not be concluded that the products shown in D1 were made available to the public at the priority date of the patent in suit so that these products are not prior art according to Article 54(2) EPC. Furthermore, it has not been established that the products disclosed in D3/D24 (which are prior art according to Article 54(2) EPC) corresponded to any of the retain samples 3 and 4 of D1. Granted claim 1 therefore is novel over D3/D24 because D3/D24 does not disclose the average pore size of the products disclosed therein.

4. Inventive step

4.1 The decision under appeal did not address the question of inventive step over D1 and D3 as it was concluded that they did not belong to the state of the art. The appellant considered that the product of granted claim 1 lacked an inventive step in view of either D1 or D3/D24 as document representing the closest prior art (statement of grounds of appeal, point 5, starting on page 12).

4.2 D1 is not prior art according to Article 54(2) EPC and can therefore not represent the closest prior art. The content of D3/D24 however was shown to have been made available to the public before the priority date of the patent in suit.

4.3 The respondent contested the choice of D3/D24 as the closest prior art on the grounds that D3/D24 did not have the same purpose as the patent in suit (rejoinder,

page 14, item 84).

- 4.4 The patent in suit is concerned with the preparation of porous water-soluble nonionic cellulose ethers having an improved dissolution rate in a small amount of water and being used in chemical fields, pharmaceutical fields and the like (paragraphs 1 and 11). As a result of their improved dissolution properties the porous water-soluble nonionic cellulose ethers are usable as a drug or food binder, a disintegrant, a thickening agent for various types of solvents, a water retention agent for building materials, or a binder for extrusion molding (paragraph 22).
- 4.5 D3/D24 discloses the production of water soluble cellulose ethers such as Hypromellose (page 1, first paragraph). The Hypromellose compounds of D3/D24 are said to be designed for a hydrophilic matrix agent (page 2, Overview) used to achieve the controlled release of water soluble drugs (page 2, General information on major factors).
- 4.6 Both the patent in suit and D3/D24 therefore relate to water soluble cellulose ethers that can be used as drug release agents and as such it can be acknowledged that they are in the same technical field and concern the same overall purpose or a similar use (Case Law, I.D. 3.2). As a result D3/D24 is not an unreasonable starting point to assess inventive step of the granted claims.
- 4.7 The appellant considered in their analysis of inventive step that granted claim 1 differed from D3/D24 in the average pore size being 36 μm or smaller, the average pore size being not disclosed in D3/D24. That distinguishing feature was not contested by the

respondent (rejoinder, page 14, item 85). In view of the analysis of D3/D24 in the previous section concerning novelty, the Board agrees with this conclusion.

- 4.8 The description of the patent in suit indicates that its object was to provide a porous water-soluble nonionic cellulose ether having an improved dissolution rate in a small amount of water (paragraphs 8 and 9). The respondent saw in the comparison of examples 7 and 8 with comparative example 1 in Table 2 evidence for that effect (rejoinder, pages 14-15, item 86).
- 4.9 The porous water-soluble nonionic cellulose ethers obtained in examples 7, 8 and in comparative example 1 indeed differ from one another in their average pore diameter (30 μm in example 7, 36 μm in example 8 and 38 μm in comparative example 1). The results in table 2 show a shorter dissolution time when the average pore size is within the range in granted claim 1 (140 and 153 seconds for the porous water-soluble nonionic cellulose ether according to examples 7 and 8 respectively, lower than the value of 170 seconds of comparative example 1).
- 4.10 The examples of the patent in suit therefore provide support for the effect of a shorter dissolution over comparative example 1. While the effect derivable from these examples was not disputed by the appellant at the oral proceedings before the Board, the appellant argued that the patent in suit would not show that an effect was obtained beyond the ranges of particle sizes disclosed in table 2 (statement of grounds of appeal, page 14, third paragraph). The effect shown in examples 7 and 8 is, however, plausible over D3/D24 and the other examples 1-6 further show that the dissolution

time remains shorter over a broader range of particle sizes. Since the argument of the appellant concerning the lack of validity of the effect beyond the ranges of particle sizes disclosed in the examples was not supported by facts, the Board does not see any reason to consider that the effect was not obtained over the whole scope of granted claim 1. Therefore, the problem over D1 can be formulated as the provision of a cellulose ether having shorter dissolution time in a small amount of water as proposed by the respondent (rejoinder, page 15, item 87).

- 4.11 The question of obviousness in the present case was therefore whether the prior art would have motivated the skilled person to select an average pore size of 36 μm or smaller in the expectation of obtaining porous water-soluble nonionic cellulose ethers that dissolve quicker in a small amount of water.
- 4.12 The appellant relied on D3, D18 and D19 to show that the solution of the problem posed was obvious. They considered that it was known from D3 to include fine particles which resulted in decreased pore size (as explained in D18), and that it was also known from D19 that the addition of fine particles resulted in an improved dissolution of cellulose ethers (statement of grounds of appeal, page 15, first paragraph).
- 4.12.1 D3/D24 is concerned with the provision of more controllable and reproducible drug release compositions by controlling the properties of the polymer (page 1, last paragraph). D3/D24 mentions the dissolution of the matrix (page 2), which is based on METOLOSE SR, but it does not mention the effect of the pore size of that product on the dissolution of the porous water-soluble nonionic cellulose ether in water. The appellant

referred to page 4 and the dissolution profile of a drug embedded in a matrix comprising METOLOSE 90SH-4000 SR (statement of grounds of appeal, passage bridging pages 11 and 12). The dissolution discussed on page 4 and shown in figures 4 and 5 on page 5, however, refers to the dissolution of the drug out of the matrix to the water medium and not to the dissolution of METOLOSE 90SH-4000 SR itself as the porous water-soluble nonionic cellulose ether in water. Page 6 of D3/D24 which was also cited by the appellant mentions a range of particle sizes (40-60 μm) for METOLOSE 90SH-SR but there is no mention of its dissolution in water or of the effect of the average pore size or particle size on the dissolution. D3/D24 therefore does not contain a teaching that links the dissolution of porous water-soluble nonionic cellulose ethers in water with the selection of a low average pore size, specifically one within the range of 36 μm or smaller as defined in granted claim 1.

- 4.12.2 D18 was cited as a document providing a relevant teaching about the particle size distribution and porosity of a powder (statement of grounds of appeal, page 13 and 14). D18 however does not deal with dissolution properties, even less to the ones of porous water-soluble nonionic cellulose ethers of chosen particle sizes. The teaching of D18 is therefore not relevant to the question of obviousness posed.
- 4.12.3 D19 is a Japanese patent application for which only claims 1-6 were translated into English. The appellant relied on the wording of claim 1 of that document defining a method to "improve the melt dissolution rate with respect to the aqueous medium of the powdery water solubility polysaccharide which adds a fine grain inorganic oxide with a volume medium diameter of 1-23

micrometers which is 0.01-20 mass % with respect to this powdery water solubility polysaccharide to powdery water solubility polysaccharide". The only teaching which can be derived from what is available of D19 is that the measure to be taken in order to obtain an improvement of the water solubility of the polysaccharide is to add inorganic oxide particles of a specific mean diameter in a specific amount. D19 therefore teaches a solution to the problem posed which is not the solution identified in granted claim 1, namely the control of the average pore size of the porous water soluble nonionic cellulose ether in the range of 36 μm or smaller. Moreover, the Board cannot see how a link can be made between D18 and D19, which deal with completely different issues.

4.13 The Board therefore came to the conclusion that the subject matter of granted claim 1 was not shown to be obvious starting from D3/D24 as the closest prior art.

5. As there were no further objections by the appellant (see minutes, page 2, fifth full paragraph), the Board has no further issue to decide upon and the appeal is to be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



D. Hampe

D. Semino

Decision electronically authenticated