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**Datasheet for the decision  
of 5 December 2023**

**Case Number:** T 2004/21 - 3.3.09

**Application Number:** 09748165.9

**Publication Number:** 2326187

**IPC:** A23G4/06, A23G3/36

**Language of the proceedings:** EN

**Title of invention:**

CONFECTIONERY PRODUCTS PROVIDING AN INCREASED HYDRATION  
SENSATION

**Patent Proprietor:**

Wm. Wrigley Jr. Company

**Opponent:**

Fertin Pharma A/S

**Headword:**

Mouthwatering chewing gum/WRIGLEY

**Relevant legal provisions:**

EPC Art. 56, 83, 123(2)

**Keyword:**

Main request: Added subject matter - (no); Sufficiency of  
disclosure - (yes); Inventive step - (yes)

**Decisions cited:**

**Catchword:**

Formulation of a problem based on an effect neither mentioned nor suggested in the prior art documents avoiding ex-post facto analysis (Reasons 3.11 to 3.16)



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Case Number: T 2004/21 - 3.3.09

**D E C I S I O N**  
**of Technical Board of Appeal 3.3.09**  
**of 5 December 2023**

**Appellant:** Fertin Pharma A/S  
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**Decision under appeal:** **Interlocutory decision of the Opposition  
Division of the European Patent Office posted on  
7 October 2021 concerning maintenance of the  
European Patent No. 2326187 in amended form.**

**Composition of the Board:**

**Chairman** A. Haderlein  
**Members:** A. Veronese  
F. Blumer

## **Summary of Facts and Submissions**

- I. The appeal was filed by the opponent against the decision of the opposition division finding that the European patent as amended according to auxiliary request 1 meets the requirements of the EPC.
- II. With its notice of opposition, the opponent had requested revocation of the patent in its entirety on the grounds under Article 100(a) (lack of novelty and lack of inventive step), 100(b) and 100(c) EPC.
- III. Claim 1 of auxiliary request 1 on which the decision under appeal is based reads as follows:
- "1. A chewing gum comprising a gum base, bulking agent and flavour component in which the bulking agent comprises a blend of granules consisting of erythritol, said blend comprising 50 to 99 wt% of coarse granules which are retained on a sieve of 250 microns, said granules of erythritol forming up to 80 wt% of the chewing gum and wherein the chewing gum comprises at least 20 wt% of the coarse erythritol granules."*
- IV. The documents submitted during the opposition proceedings included:
- D1: EP 0 758 528 A1  
D2: EP 0 430 663 A1  
D3: US 2004/0180110 A1
- V. In its decision, the opposition division found that the combination of features in claim 1 of auxiliary request 1 did not extend beyond the disclosure of the

application as filed. Furthermore, it found that the invention claimed in this request was sufficiently disclosed. The claimed subject-matter was considered to involve an inventive step over the teaching of D1 and D2.

VI. The opponent's (appellant's) arguments may be summarised as follows.

- Claim 1 contained added subject-matter. The application did not disclose granules consisting of erythritol and the combinations of features defining the size and the amount of the granules.
- The claimed invention was not sufficiently disclosed. The size of the granules decreased during the manufacture of the chewing gum, and the patent did not teach how to measure the size of the granules in the finished product.
- The claimed subject-matter did not involve an inventive step starting from D1 or D2 as the closest prior art. The claimed subject-matter differed from the teaching of these documents in the higher amount of coarse granules in the erythritol blend and in the gum. The tests in the patent showed that these differences were not associated with any effect. The technical problem was the provision of an alternative gum. The skilled person would have arrived at the claimed invention just by replacing the erythritol in the chewing gums of D1 and D2 with commercially available erythritol granules. Furthermore, D2 and D3 provided an incentive to increase the amount of erythritol.

VII. The proprietor's (respondent's) arguments can be summarised as follows.

- Claim 8 and paragraphs 6, 18, 20, 21 and 24 of the application as filed provided a basis for claim 1.
- The claimed invention was sufficiently disclosed. The patent provided sufficient information to prepare the claimed chewing gum. There was no evidence that the size of the granules decreased during manufacture.
- The claimed invention involved an inventive step starting from D2 or D1. The claimed chewing gum differed from that of D2, the closest prior art, in the higher amounts of coarse granules in the erythritol blend and in the gum. The patent showed that erythritol granules, in particular the coarse ones, induced the strongest mouthwatering effect. None of the cited documents related to the invention. The appellant's arguments involved hindsight. D2 taught against using high amounts of coarse granules. The claimed subject-matter involved an inventive step, irrespective of whether the problem was formulated as the provision of an improved or alternative chewing gum. D1 was not a suitable starting point because it aimed to solve a different problem.

VIII. The **appellant** requested that the decision under appeal be set aside and that the patent be revoked in its entirety.

IX. The **respondent** requested that the appeal be dismissed or, alternatively, that the patent be maintained on the

basis of one of auxiliary requests 1 to 4 filed with the reply to the grounds of appeal.

## **Reasons for the Decision**

### *Amendments*

- 1.1 The appellant argued that the application as filed did not disclose the following features:
- "granules consisting of erythritol" (emphasis by the board)
  - 50 to 99 wt% of coarse granules retained on a sieve of 250 microns
  - a combination of up to 80 wt% of erythritol granules and at least 20 wt% of coarse erythritol granules in the chewing gum

### *Granules "consisting of erythritol" feature*

- 1.2 The application as filed teaches that the claimed confectionary product contains "erythritol granules" and "erythritol in a form of granules" (see claim 1, paragraphs [0006] and [0009], and the examples).
- 1.3 The skilled person would understand from this wording and the teaching of the application as filed, as a whole, that the disclosed granules are made of erythritol and nothing else. In other words, that they consist of erythritol. Thus, the granules disclosed in the application as filed "consist of erythritol". This is confirmed by the fact that the application as filed does not describe any embodiment or example in which

the granules include other compounds in addition to erythritol.

- 1.4 The appellant disagreed, noting that a chocolate bar, such as a "Mars bar", would not be considered a bar "consisting of chocolate" because it contains caramel in addition to chocolate. However, this comparison is not appropriate. There is a difference between the definition of an organic compound, like erythritol, and that of a product, like chocolate, which typically comprises a mixture of different ingredients.
- 1.5 For these reasons, it is concluded that the wording "granules consisting of erythritol" is directly and unambiguously disclosed in the application as filed.

*Feature 50 to 99 wt% of coarse granules retained on a sieve of 250 microns*

- 1.6 Claim 1 requires that the granule blend in the chewing gum "comprises 50 to 99 wt% of coarse granules which are retained on a sieve of 250 microns". The appellant argued that this feature is not disclosed in the application as filed.
- 1.7 This argument is not persuasive. This feature is based on:
- claim 8 and paragraph [0018] as filed, which define the size of the "coarse granules" in the blend by reference to a sieve
  - paragraph [0021] as filed, which defines the amount of the coarse particles in the blend



1.8 Referring to table 1, the appellant argued that according to the application as filed, the "coarse granules" could include granules smaller than 250 microns. This was confirmed by the statement on paragraph [0021] that a 50:50 blend of commercial coarse and fine granules may contain 40 or 45 wt% coarse particles. In its opinion, since this definition was missing from claim 1, the application contained new subject-matter.

1.9 This argument is not convincing. Table 1 relates to some commercial products and teaches that these may contain fine granules dispersed among the coarse ones. However, paragraph [0021] clearly refers to an amount of from 50 to 99 wt% of coarse granules in the chewing gum, and paragraph [0018] defines those coarse particles, referring to their retention on a #60 ASTM E11 Series Sieve, i.e. on a sieve of 250 microns. Table 1 confirms that products containing 100% coarse granules can be produced. Thus, an amount of 50 to 99 wt% of the claimed coarse granules is disclosed in the application as filed.

*Combination of up to 80 wt% of erythritol granules and at least 20 wt% of coarse erythritol granules*

1.10 Claim 1 requires that the total amount of erythritol granules forms up to 80 wt% of the chewing gum and that the chewing gum comprises at least 20 wt% of the coarse erythritol granules.

1.11 It was not disputed that both features are disclosed in the application as filed: in paragraph [0020], defining a product containing "coarse erythritol, fine erythritol or erythritol blend ranging from about 5% to about 80 wt%", and paragraph [0024], defining an amount

of coarse erythritol granules in the product of "more preferably at least 20 wt%".

1.12 However, according to the appellant, the combination of these features was not disclosed in the application as filed.

1.13 This is not correct. Eighty wt% is the upper limit of the only range defining the amount of erythritol disclosed in the application as filed. Thus, it relates to the broadest embodiment of the invention disclosed in the application. The values given in lines 9 and 10 of page 5, namely "10%, 15%, 20% [...] 65%, 70%, 75%", represent examples of values in the originally disclosed range, but none of them is disclosed as being particularly relevant or preferred.

1.14 The second value of at least 20% is the most preferred of the four values given in lines 3 to 5 of paragraph [0024].

1.15 The selection of this value, which is the preferred one of a short list, and its combination with the aforementioned value of up to 80%, which relates to the broadest definition of the originally disclosed invention, thus does not create new subject-matter.

1.16 For these reasons, claim 1 does not contain originally undisclosed subject-matter.

## 2. *Sufficiency of disclosure*

2.1 According to the appellant, the claimed invention was insufficiently disclosed. The appellant noted that claim 1 related to a chewing gum comprising erythritol granules of a certain size. It also noted that the size

of these granules, which were encased in the elastomeric mass of the chewing gum, could not be measured. It was reasonable to assume that their size was smaller than that of the granules used as the starting material to prepare the chewing gum. The size of the granules was in fact expected to decrease, due to abrasion and breakage, when they were blended into the gum base. The bridging paragraphs of columns 1 and 2 and columns 3 and 4 of D2 confirmed that the size of erythritol granules changed when chewing gums were manufactured. Since the determination of the granules size in the claimed chewing gum was impossible, the invention was insufficiently disclosed.

- 2.2 These arguments fail to persuade. What counts for the claimed invention to be sufficiently disclosed is that the product defined in claim 1 can be manufactured by the skilled person using the information provided by the patent application and common general knowledge.
- 2.3 Paragraphs [0067] and [0068] of the granted patent teach how to produce the claimed chewing gum, and the following paragraphs describe in detail the composition of chewing gums according to the invention.
- 2.4 As submitted by the respondent, there is no evidence that during the manufacture of the chewing gum the size of the erythritol granules will significantly decrease. The passages of D2 mentioned by the appellant do not support this assertion either. To the contrary, as far as D2 might provide evidence that the size of the granules might change during manufacture, it teaches that their size will increase rather than decrease due to re-crystallisation phenomena (see column 4, lines 6 to 19). Thus, D2 does not support the appellant's argument.

2.5 Furthermore, even assuming that an increase of size will occur due to re-crystallisation, there is no evidence that this would prevent the skilled person from preparing the chewing gums defined in claim 1. Claim 1 does not define an upper limit for the size of the coarse granules, and the allowed amount of coarse granules in the chewing gum is very high, 99 wt%.

2.6 For these reasons, it is credible that a chewing gum according to the invention can be prepared by simply blending erythritol granules having the size defined in claim 1 into the chewing gum mass. Furthermore, that there is no need to measure the size of the granules in the mass of the final product to make that product. It is therefore concluded that the claimed invention is sufficiently disclosed.

3. *Inventive step*

3.1 The claimed invention relates to a chewing gum which provides a hydration or "mouthwatering" sensation to a consumer (see paragraph [0001] of the opposed patent). The chewing gum comprises a gum base, a flavour and a bulking agent comprising a blend of erythritol granules which includes an amount of "coarse" erythritol granules having a specific size.

*The closest prior art*

3.2 The appellant considered D1 or, alternatively, D2 to be the closest prior art.

3.3 D2 discloses a chewing gum comprising a blend of erythritol granules of different sizes and another sugar alcohol. The chewing gum should provide desirable

attributes without inducing an abrasive sensation in the mouth (column 1, lines 26 to 34; the passage bridging columns 1 and 2; column 2, lines 29 to 33; and column 3, lines 52 to 57). D2 does not mention a mouthwatering effect. However, since D2, like the opposed patent, relates to a chewing gum inducing a pleasant sensory experience in the consumer, it is, as argued by the respondent, the closest prior art.

- 3.4 D1 relates to a chewing gum comprising granules of erythritol which does not become brittle after storage. The appellant cited a statement in D1 mentioning, in passing, the constant search for chewing gums having better properties in terms of taste, texture and shelf life (page 2, line 11). However, this succinct statement is made in the context of the discussion of the prior art rather than the disclosed invention. The gist of D1 is to increase shelf-life stability so that the chewing gum does not become brittle during ageing and is not too soft to chew (see page 2, lines 31 to 44 and claim 1). This means that D1 focuses on maintaining the mechanical properties of a chewing gum after long storage rather than on the sensorial effects induced in a consumer. Thus, D1 is not the closest prior art.

*Distinguishing features*

- 3.5 The claimed chewing gum differs from that disclosed in in D2 and in particular from the example shown in columns 4 and 5 of this document in that:

- 1) the blend of erythritol granules comprises 50 to 99 wt% of coarse granules which are retained on a sieve of 250 microns

Even assuming the amount of coarse granules of this size contained in the example of D2 to be the highest suggested by the appellant, namely 29 wt% (23 + 6 wt% of the example in column 5), this would still be substantially below that specified in claim 1, namely 50 to 99 wt%.

2) the total amount of coarse erythritol in the chewing gum is at least 20 wt%

As calculated by the appellant, the total amount of coarse erythritol of the claimed size in the example of D2 can be at most 16 wt% (29 wt% of the total amount of erythritol, which is 55 wt%). Thus, this amount is also substantially lower than the minimum amount specified in claim 1 (20 wt%).

*Technical effect*

3.6 The respondent argued that chewing gums containing fine, coarse or a blend of fine and coarse erythritol granules induced a sensation of hydration, i.e. a mouthwatering effect in the consumer. It also argued that the results in the patent showed that this effect was enhanced when the chewing gum comprised a higher proportion of coarse erythritol granules, i.e. granules above 250 microns (see paragraphs [0007], [0009] and [0017] and the examples in the patent).

3.7 The appellant disputed these effects, noting that some tested chewing gums which contained 16 wt% of coarse erythritol granules or did not contain erythritol granules at all performed better than others comprising a higher proportion, namely 21 wt%, of coarse granules. The appellant referred, in particular, to the comparisons between:

- samples 2 and 3, samples 4 and 5, and samples 7 and 9 in tables 3 and 6 of example 1
- samples 4, 5 and 6 in tables 5 and 8 of example 1
- samples 1 and 2 in table 9 of example 2
- samples 2 and 3 and samples 6, 7 and 8 in tables 15 to 17 of example 6

3.8 The board agrees with the appellant that the tests in the patent do not make it credible that a higher proportion of coarse granules enhances the mouthwatering effect. It considers, however, that, as argued by the respondent, the overall picture emerging from the results makes it credible that the inclusion of erythritol granules in a chewing gum induces a mouthwatering effect. This being irrespective of whether the chewing gum comprises "coarse granules" having a size above 250 micron or "fine granules" having a smaller size. This can be seen from the overall trend of the results in tables 3 to 8 and from the results of the consumer tests in table 9, in paragraphs [0083] to [0086] and tables 15 to 17 of the patent, mentioned by the respondent in its written submissions and during the oral proceedings.

3.9 As emerged from the discussion during the oral proceedings, not all chewing gums induce a mouthwatering effect. In fact, paragraph [0003] of the patent teaches that certain chewing gums containing sweeteners may induce a sensation of dry mouth and the need to drink water. This makes it credible that the mouthwatering sensation induced by the tested chewing gums is due to the presence of the erythritol granules and that this effect can be achieved with both coarse and fine erythritol granules.

3.10 As noted by the appellant, although D2 does not mention the mouthwatering effect, the results in the patent make it credible that the chewing gum disclosed in D2, which contains erythritol granules, induces it. There is no evidence that the chewing gum according to the invention induces a stronger mouthwatering effect compared to that of D2. This is because although the chewing gum of D2 contains a lower amount of coarse granules, it also contains a considerable amount of fine granules, which are also effective.

*Underlying technical problem*

3.11 The appellant argued that mouthwatering was an inherent property of the chewing gum of D2 and that this document already provided a solution to the problem of providing a chewing gum inducing mouthwatering. Since there was no evidence that the claimed chewing gum induced a stronger mouthwatering effect than that of D2, the underlying objective problem was merely "the development of an alternative chewing gum". This formulation of the problem followed the established case law of the boards.

3.12 The board does not agree. Under the established case law, if a known problem has already been solved by the prior art and the claimed subject-matter represents a different solution to that problem, the objective technical problem should be formulated as the provision of an "alternative solution" to the known problem (Case Law of the Boards of Appeal, 10th Edition 2020, Chapter I.D.4.5, "*Alternative solution of a known problem*").

3.13 However, the situation in the current case is different. Although the chewing gum of D2 has "inherent" mouthwatering properties, D2 discloses



neither these properties nor the problem of providing a mouthwatering effect in a user. "Mouthwatering" is not mentioned in any of the cited prior-art documents. The claimed chewing gum can therefore not be considered an alternative solution to a known problem.

3.14 When assessing inventive step, an interpretation of the prior-art documents as influenced by the problem solved by the invention where the problem was neither mentioned nor suggested in those documents must be avoided, such an approach being merely the result of a posteriori analysis (Case Law of the Boards of Appeal, 10th Edition 2020, Chapter I.D.6, "*Ex-post facto analysis*").

3.15 Formulating the problem as the provision of an "alternative chewing gum" which is meant, explicitly or implicitly, to solve the problem of inducing mouthwatering would imply that this problem, as well as its solution, was known at the filing date. This would require reading into the teaching of D2 the technical contribution which the patent makes over the prior art, namely the finding that erythritol granules induce a mouthwatering effect. This would inevitably result in an ex-post facto analysis.

3.16 For these reasons, starting from D2, which discloses chewing gums preventing an abrasive sensation, the underlying objective technical problem is to be formulated as the provision of a chewing gum inducing a mouthwatering effect in a consumer.

*Non-obviousness of the claimed solution*

3.17 As mentioned above, none of the cited prior-art documents mentions the problem of providing a chewing

gum providing a mouthwatering effect. This problem was apparently not even known at the filing date.

3.18 This means that, starting from D2, to arrive at the claimed chewing gum, the skilled person would have had to:

- recognise the need to provide chewing gums inducing a mouthwatering effect
- recognise that chewing gums including erythritol granules induced this effect
- modify the chewing gums of D2 by increasing the proportion of coarse erythritol granules

3.19 Without hindsight knowledge of the patent in suit, this would have required inventive skills. In fact, paragraph [0003] of the patent brings up for the first time the need to provide chewing gums inducing a mouthwatering effect in the consumer. Furthermore, the patent provides the first disclosure of the beneficial mouthwatering effect of erythritol granules.

3.20 For these reasons alone, the skilled person confronted with the underlying problem would have had neither any reason nor guidance to prepare the claimed chewing gum by increasing the amount of coarse particles in the chewing gum of D2.

3.21 Furthermore, D2 aims to avoid the "abrasive sensation" which can be induced by chewing gums comprising erythritol granules exceeding 50 microns (column 1, lines 23 to 25 and column 2, lines 1 to 3, 17 to 19 and 29 to 33). D2 teaches that by using a certain manufacturing process, granules having a size up to 300

microns can be used (column 3, lines 31 to column 4, line 6). However, this passage also states that it is preferable that substantially all of the erythritol particles have a size of less than 300 microns and that at least 65% of them are between 100 and 300 microns. In the only chewing gum disclosed in D2, the amount of coarse erythritol granules (16 wt%) is substantially below that (20 wt%) in claim 1 (see point 3.5 above). Therefore, D2 does not suggest providing a chewing gum comprising the claimed amount of coarse erythritol granules and teaches away from the claimed solution.

- 3.22 The appellant argued that D1 and D3 provided a pointer to the claimed solution and that the skilled person would have considered replacing some of the fine erythritol granules used in D2 with larger, commercially available erythritol granules. By doing this, they would have arrived at the claimed invention.
- 3.23 These arguments are not persuasive either because they ignore the teaching of D2, which is to avoid large amounts of coarse granules. Furthermore, D1 suggests incorporating a total amount of erythritol of at most 18 wt% in chewing gums. The amount of erythritol is in fact between 5 and 30 wt% of the total amount of the polyol present which, on its own, is in an amount of from 5 to 60 wt% (see page 2, lines 40 to 53 and claims 1 and 2). Even if all erythritol were in the form of coarse granules, the total amount would still be below the claimed 20 wt%. Although some example compositions in D1 contain higher amounts of erythritol, these were only used to show that higher amounts deteriorated performance. Thus, no incentive can be found in D1 to increase the amount of coarse erythritol granules. That incentive cannot be found in D3 either.

- 3.24 As a corollary to the above, the same conclusion would be arrived at starting from D1 as the closest prior art. This at least for the simple reason that, analogously to what was mentioned above in points 3.17 to 3.20, neither D1 nor any other cited document mentions the mouthwatering effect or the need to provide a chewing gum causing this effect.
- 3.25 For these reasons, the subject-matter of claim 1, as well as that of the following claims, which are narrower in scope, involves an inventive step over the prior art.

**Order**

**For these reasons it is decided that:**

The appeal is dismissed.

The Registrar:

The Chairman:



K. Götz-Wein

A. Haderlein

Decision electronically authenticated