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Datasheet for the decision of 23 June 2026

Case Number: T 0609/24 - 3.3.05

Application Number: 17791180.7

Publication Number: 3519627

IPC: D21H27/10, B65D65/42, B65D1/24, D21H17/53, B65D65/38, D21H19/28

Language of the proceedings: EN

Title of invention:
BIODEGRADABLE AND COMPOSTABLE FOOD PACKAGING UNIT FROM A MOULDED PULP MATERIAL, AND METHOD FOR MANUFACTURING SUCH FOOD PACKAGING UNIT

Patent Proprietor:
Huhtamaki Molded Fiber Technology B.V.

Opponent:
Kemira Oyj

Headword:
BIODEGRADABLE AND COMPOSTABLE FOOD PACKAGING UNIT/HUHTAMAKI

Relevant legal provisions:
EPC Art. 56, 114(1)
RPBA 2020 Art. 13(2)

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It can be changed at any time and without notice

Keyword:
Examination of own motion - new formulation of the problem by the board
Amendment after notification of Art. 15(1) RPBA communication - exceptional circumstances (yes)
Inventive step - (no, all requests)

Decisions cited:
G 0009/91, G 0002/19

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Case Number: T 0609/24 - 3.3.05

D E C I S I O N
of Technical Board of Appeal 3.3.05
of 23 June 2026

Appellant: (Patent Proprietor)	Huhtamaki Molded Fiber Technology B.V. Poolsterweg 3 8938 AN Leeuwarden (NL)
Representative:	Arnold & Siedsma Bezuidenhoutseweg 57 2594 AC The Hague (NL)
Appellant: (Opponent)	Kemira Oyj Energiakatu 4 00180 Helsinki (FI)
Representative:	Espatent Oy Kaisaniemenkatu 4 00100 Helsinki (FI)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted/ electronically transmitted on 1 March 2024 concerning maintenance of the European Patent No. 3519627 in amended form.**

Composition of the Board:

Chair	R. Winkelhofer
Members:	R. Elsässer
	S. Besselmann

Summary of Facts and Submissions

I. European patent No. 3 519 627 relates to compostable food packaging units made from moulded pulp material comprising a biodegradable aliphatic polyester and to corresponding manufacturing methods.

II. Both the patent proprietor and the opponent lodged appeals against the opposition division's interlocutory decision to maintain the patent in amended form, based on the request then on file as auxiliary request 4.

III. In a communication under Article 15(1) RPBA, the board set out its preliminary opinion, *inter alia,* on inventive step of the request deemed allowable by the opposition division, which was numbered auxiliary request 5 in the appeal proceedings. At the time, this was the lowest-ranking, most limited request on file. The board held, *inter alia,* that, starting from D7 (EP 0 805 181 A1), the problem to be solved could be seen as providing an alternative, disadvantageous modification of the food packaging item disclosed in D7. Likewise, the board held that, when alternatively starting from D2 (JP H07-119098 A, with machine translation into English D2a), the problem to be solved was providing a food packaging item having reduced deep-drawing capacity. The subject-matter of claim 1 of auxiliary request 5 constituted an obvious solution to either of these problems.

IV. The proprietor responded by filing three new auxiliary requests 6 to 8 and argued, *inter alia,* that the board's reasoning in the preliminary opinion extended beyond what had been presented by the parties. They

argued that this reasoning should not be considered or, alternatively, that the case should be remitted to the opposition division for an "in-depth substantive review". The new auxiliary requests should be admitted as a response to the new reasoning presented for the first time in the preliminary opinion of the board.

V. On substance, the proprietor argued with regard to auxiliary request 5 that the technical problem should instead be formulated as providing a food packaging item (such as disclosed in D2 or D7) that is as strong and stable and more cost effective. The solution proposed in claim 1 of auxiliary request 5 was not obvious. The additional features in auxiliary requests 6 and 8 further supported an inventive step.

These arguments were refuted by the opponent.

VI. Claim 1 of auxiliary request 5 (Aux 5) reads as follows:

"1. Food packaging unit (2, 102, 202, 302, 402, 502, 602) from a moulded pulp material, the packaging unit comprising a food receiving or carrying compartment (48), wherein the moulded pulp material comprises an amount of a biodegradable aliphatic polyester, wherein the biodegradable aliphatic polyester and moulded pulp material are a mixture, wherein the food packaging unit is a compostable food packaging unit wherein the amount of biodegradable aliphatic polyester is in the range of 0.5-9 wt.%, wherein the biodegradable aliphatic polyester comprises an amount of one or more of PBS, PHB, PHA,PCL, PLA, PGA, PHBH and PHBV."

In claim 1 of auxiliary request 6, the last feature of the claim is amended to read:

"wherein the biodegradable aliphatic polyester comprises an amount of PBS."

In claim 1 of auxiliary request 7, the following feature has been added:
"and wherein the moulded pulp and the biodegradable aliphatic polyester are refined."

In claim 1 of auxiliary request 8, the amendments of auxiliary requests 6 and 7 are combined.

In each of these requests, further claims have also been amended accordingly, but these amendments are not relevant for the decision.

VII. On substance, appellant I (opponent) requests that the decision under appeal be set aside and amended such that the patent be revoked.

Appellant II (proprietor) requests that the decision under appeal be set aside and amended such that the opposition be rejected (main request), or the patent be maintained on the basis of one of auxiliary requests MRa, MRb, Aux 1, Aux 2, Aux 3, Aux I, Aux Ia, Aux Ib, Aux II, Aux IIa, Aux IIb, Aux 4, Aux 5, or 6 to 8.

Reasons for the Decision

1. Inventive step, auxiliary request 5 (Aux 5)

This request corresponds to auxiliary request 4 found allowable by the opposition division. Claim 1 of this request is reproduced under point VI.

The claimed invention is directed to biodegradable food packaging, based on pulp and a biodegradable polyester.

The opponent has attacked claim 1 starting, *inter alia*, from D2 and D7.

1.1 D7 (e.g. see column 4, line 53 to column 5, line 2) discloses food packaging units injection moulded from a mixture of e.g. pulp and a biodegradable polyester (claim 1; column 2, line 35; embodiment 3), where the biodegradable polyester can be e.g. PLA (embodiments 1 and 3; column 2, line 30) or PBS (column 2, line 33). The units contain between 20 and 80% polyester (claim 1; column 2, lines 38-46), which is above the claimed range.

The proprietor took the view that the claimed subject-matter also differed from D7 in that it did not disclose that the biodegradable material was compostable.

However, even taking into account paragraph [0008] of the patent, it is not apparent that this term implies a clear limitation going beyond what is already implied by the term "biodegradable" (see claim 1 of D7).

The proprietor also argued that the material of D7 was only usable for food for a very short time.

This is not convincing either since claim 1 is not limited in this respect. Neither the type of food nor the storage time is specified in the claim.

Therefore, claim 1 is distinguished over the general disclosure of D7 only by the lower amount of

biodegradable polyester.

1.1.1 The object of the contested patent is to provide food packaging that is sustainable (paragraph [0005]), strong and stable (paragraph [0019]). The proprietor stated that the packaging of the invention was also more cost effective.

1.1.2 As a solution, the patent proposes food packaging units "wherein the amount of biodegradable aliphatic polyester is in the range of 0.5-9 wt.%".

1.1.3 There is no reason to doubt that the claimed subject-matter solves the problem set out in the patent in that the food packaging units according to claim 1 are sustainable. It is conclusive that the units are more sustainable than conventional, plastic-based food packaging units (see paragraph [0005] of the patent).

However, the same applies to the units of D7, which also consist of materials that are explicitly disclosed as biodegradable. Therefore, this aspect of the problem has to be reformulated in a less ambitious manner as no improvement of the biodegradability has been shown.

1.1.4 Likewise, no improvement with regard to the mechanical stability of the packaging units has been shown. According to paragraphs [0018] and [0019] of the patent, food packaging items having a polyester content in the claimed range are stable and strong. An example is provided of a material comprising 7.5% PLA which outperforms a "conventional" product in a compression test (paragraph [0062]). However, no structural information about this conventional product is provided. In any case, there is no reason to assume that it is in any way representative of the material of

D7. Thus, an improvement in this regard is not shown.

1.1.5 To the contrary, the units according to claim 1 will apparently have inferior strength and stability, compared to the units of D7 since D7 teaches that the strength of the material will deteriorate if the amount of polyester is reduced. This is reasonable from a technical point of view since the polyester acts as a hot-melt binder and consolidates the pulp fibres into a coherent structure. Therefore, reducing the amount of polyester will make the products weaker and not stronger. This is confirmed by the disclosure in column 2, lines 42 to 46 of D7, where it is set out that if the amount of polyester is reduced below 20%, the material strength will be lower.

1.1.6 Regarding cost effectiveness, there is no evidence on file that showed that products according to the invention would be less costly than the products of D7. The vague statements in paragraphs [0015], [0029] and [0060] of the patent in suit are not sufficient in this regard.

1.1.7 Based on this assessment, the objective problem to be solved starting from D7 can only be seen as providing an alternative food packaging, while tolerating certain disadvantages, in particular reduced material strength.

1.1.8 Starting from D7, the solution to this problem proposed in claim 1 is obvious. As set out above, the document teaches that reducing the polyester content below a certain threshold will lower the strength (see the above-mentioned passage in column 2, lines 42-46). Faced with the problem to be solved, which allows for such disadvantageous properties, reducing the amount of

polyester is an obvious measure.

1.1.9 The proprietor's argument that this passage taught away from the claimed subject-matter is not convincing. It would teach away from using less polyester if the problem to be solved required a level of strength and stability comparable to the products of the invention of D7 or, in other words, if the problem was providing an alternative product having equivalent properties. However, as set out above, the problem is a different one.

1.1.10 In view of the less ambitious problem set out above, using less polyester is an obvious choice for the skilled person since the passage in column 2 of D7 already mentions that such inferior products can be obtained when using less than 20% polyester. Claim 1 merely covers these inferior products, without offering a technical solution to the problem of the reduced material strength mentioned in D7.

1.1.11 The proprietor contested the formulation of the problem as set out above, arguing that the skilled person would not want to provide an alternative, disadvantageous modification. However, the logic of the problem-solution approach is that a technical effect brought about by a distinguishing feature is used to formulate the problem to be solved. Where the distinguishing feature increased the strength of an item, the problem would be formulated accordingly as providing an item with improved strength. Likewise, in a case like the current one where the distinguishing feature, namely the reduced amount of polyester, reduces the strength of the item, the problem must also take into account this effect.

1.1.12 Furthermore, the proprietor argued that the passage in column 2, lines 42-46 mentioned above related to vegetation pots only. However, this is not correct since food packaging material is also mentioned.

1.1.13 They also argued that D7 was exclusively directed to injection moulding, and with this technique products with lower amounts of polyester could not be made. The latter allegation is, however, not backed up by evidence. Moreover, claim 1 does not exclude injection moulded products.

1.1.14 Therefore, the subject-matter of claim 1 does not involve an inventive step over D7.

1.2 Similar arguments apply to D2

1.2.1 As with D7, the only distinguishing feature is the polyester content.

At the oral proceedings before the board, the proprietor saw a further distinguishing feature in that claim 1 required the polyester and the pulp to be mixed. In contrast, paragraph [0006] of D2/D2a taught to arrange pulp and polyester in a layered fashion. In this context, the proprietor also questioned the quality of the machine translation D2a.

This is not persuasive either. Paragraph [0006] explicitly mentions a "mixture" of pulp and polyester. Even though the quality of the translation of that paragraph is indeed quite poor, this understanding is confirmed by paragraph [0008] and the example in paragraph [0059]. Thus, the only distinguishing feature is the amount of polyester, as apparently already acknowledged by the proprietor in its reply to the

appeal.

1.2.2 The proprietor further argued that paragraph [0047] of D2 taught away from using less than 10% by weight of polyester because with a lower amount, deep drawing could not be performed.

1.2.3 However, as with D7, this is only true if the problem were the provision of a technically equivalent alternative. There is, however, no evidence on file which showed that the claimed subject-matter does not have the disadvantages mentioned in paragraph [0047] of D2, such as limited deep-drawing capacity. Therefore, this effect must be reflected in the problem to be solved, which is therefore to provide a further food packaging unit, in which, in comparison to the products of D2, reduced deep-drawing capacity is tolerated.

1.2.4 For the reasons set out above in relation to the objection starting from D7, the claimed solution thus constitutes a foreseeably disadvantageous modification and, as such, is obvious for similar reasons as set out there.

1.2.5 Moreover, D2 is not limited to deep drawing but also discloses an alternative process, namely the so called deep squeezing (paragraph [0044]), by which the three-dimensional shape is obtained by draining the fibrous pulp-polyester mixture in a three-dimensional mould and optionally heat pressing the intermediate product in a mould having the same shape (paragraphs [0044] and [0059]). Therefore, the loss of deep-drawing capabilities does not mean that the invention of D2 cannot be carried out.

1.2.6 It follows that claim 1 of auxiliary request 5 is not inventive in view of D2 either.

2. Higher-ranking requests

The same conclusion as reached for auxiliary request 5 applies to the higher-ranking requests, namely the main request and the auxiliary requests MRa, MRb, Aux 1, Aux 2, Aux 3, Aux I, Aux Ia, Aux Ib, Aux II, Aux IIa, Aux IIb and Aux 4. In each case, claim 1 is broader in scope than claim 1 of auxiliary request 5, as acknowledged by the proprietor.

3. Procedural issues

3.1 While the objections starting from D2 and D7 were based on those raised by the opponent, the reasoning set out in the board's preliminary opinion went beyond them, at least with regard to the formulation of the problem to be solved. In view of these circumstances, which were exceptional, and in the interest of procedural fairness, auxiliary requests 6 and 8 submitted by the proprietor in response to the preliminary opinion were to be admitted and considered by the board (Article 13(2) RPBA). However, auxiliary request 7 could not be taken into account for the reasons given below.

3.2 In addition or alternatively, the proprietor also requested that the board's new arguments as set out above not be considered, namely that the claimed subject-matter involved a disadvantageous modification and that the problem to be solved had to be formulated accordingly.

This request cannot be granted. Pursuant to

Article 114(1) EPC, the European Patent Office is not, in proceedings before it, restricted to the facts, evidence and arguments provided by the parties. This principle of ex-officio examination is an important element in safeguarding the public interest by ensuring that no European patent is granted which does not meet the requirements of the European Patent Convention (cf. e.g. G 2/19, Reasons B.II.3.(d)). It applies not only to first-instance proceedings but also, albeit to a lesser degree, to appeal proceedings (see e.g. G 9/91, Reasons 18). Therefore, it is within a board of appeal's competence to further develop the inventive-step argument raised by a party where appropriate, while guaranteeing the right to be heard (thereon) of all parties to the proceedings, including the consideration of new claim requests filed as a reaction, if indicated, as is the case here. Correctly formulating the objective technical problem in light of the prior art under consideration is an essential step in the assessment of inventive step.

3.3 The further, subsidiary request that the case be remitted to the opposition division also cannot be granted since auxiliary request 5 had already been dealt with in the decision under appeal, which is under review in these appeal proceedings. In any case, parties have no absolute right to have each and every matter of a case examined at two instances (Case Law of the Boards of Appeal of the EPO, 11th edn., 2026 revision, V.A.9.2.1). The same applies to auxiliary requests 6 and 8.

4. Auxiliary request 6

Claim 1 corresponds to the main request in which the polyester is restricted to PBS (paragraph [0023]).

Both D2 (paragraph [0052]) and D7 (column 2, line 33) already teach to use the same polymer.

The proprietor disputed that the disclosure of a "butanediol/succinic acid copolymer" (D7) amounted to a disclosure of PBS. However, in the context of a document such as D7, which is directed to biodegradable polyester resins, the only technically reasonable understanding of the above-mentioned disclosure is that PBS is meant.

The same applies to D2. Notably, the PBS manufactured in D2 is further reacted with a coupling unit (see paragraphs [0026], [0027] and [0053]). However, the resulting polymer is still a functionalised PBS.

While both documents also disclose alternative polyesters, there is no evidence for an effect arising from using PBS. The example in the patent is irrelevant since it uses another polymer, PLA. The vague statements in paragraphs [0023] and [0024] of the description to which the proprietor referred are not sufficient since they are not backed up by evidence.

Therefore, the selection of PBS from among the polyesters disclosed in D2 and D7 is arbitrary and, for the reasons set out for auxiliary request 5, does not involve an inventive step.

5. Auxiliary request 7

Claim 1 corresponds to auxiliary request 5 with the additional limitation that the moulded pulp and the biodegradable polyester are refined.

This request cannot be considered since it is not convergent with auxiliary request 6. Even in a case like the current one where, in view of the circumstances, the filing of new requests at this late stage of the proceedings may be justified in principle, there is no reason to deviate from the well-established principle that late-filed requests have to be convergent for them to be considered.

6. Auxiliary request 8

Claim 1 combines the amendments of auxiliary requests 6 and 7.

This request does not involve an inventive step either for the following reasons.

The proprietor argued that the products according to claim 1, in which the fibres were refined, were further characterised by a lower weight, compared to conventional products. The weight could be lowered without affecting the performance parameters. However, there is no evidence for these or any other unexpected effects arising from the use of refined filers, be it alone or in combination with the other features of the claim. Moreover, claim 1 is not limited with regard to the weight of the packaging units.

The proprietor referred also to the example of the patent where refined pulp material is used, but there is no comparison with unrefined material. Moreover, as mentioned above, this example (paragraph [0062]) does not use PBS.

Finally, the proprietor referred to paragraphs [0019] and [0048] of the patent, but there is no evidence for

the effects mentioned there. Furthermore, the effects mentioned in paragraph [0019], which in part are reiterated in paragraph [0048], are attributed to "sufficiently refined" material, or the application of a specific refining energy, while the claim does not require any specific extent of refining. Moreover, the comparative conventional products mentioned in paragraph [0019], such as CPET or PP trays, are not representative of the products of D2.

D2, like the contested patent, essentially describes a modified paper making process in which a slurry comprising pulp filers is made, drained and dried, see point 1.2.5. In such a process, using refined fibres is conventional. Moreover, the purpose of the refining recited in paragraph [0048] of the patent, such as reducing the fibre length and fibrillating the fibres, is commonly known.

For these reasons and the reasons set out for auxiliary requests 5 and 6, auxiliary request 8 does not involve an inventive step.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The patent is revoked.

The Registrar: The Chair:

T. Buschek R. Winkelhofer

Decision electronically authenticated