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Datasheet for the decision of 16 April 2025

Case Number:	T 1039/23 - 3.3.03
Application Number:	17836682.9
Publication Number:	3495396
IPC:	C08F2/44, B01J13/18, C08F2/18, C08F220/46, C08F220/48, C08J9/32, C08L27/06
Language of the proceedings:	EN

Title of invention:
HOLLOW RESIN PARTICLES AND APPLICATION THEREOF

Patent Proprietor:
Matsumoto Yushi-Seiyaku Co., Ltd.

Opponent:
Nouryon Chemicals International B.V.

Relevant legal provisions:
RPBA 2020 Art. 12(6), 13(2)
EPC Art. 56, 123(2)

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It can be changed at any time and without notic

Keyword:
Late-filed facts - circumstances of appeal case justify admittance (yes)
Inventive step - All requests (yes)
Amendments - Main request and Auxiliary request 1 - allowable (no) - Auxiliary request 2 - allowable (yes)

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Beschwerdekammern

Boards of Appeal

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Case Number: T 1039/23 - 3.3.03

DECISION
of Technical Board of Appeal 3.3.03
of 16 April 2025

Appellant:
(Opponent)

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Decision under appeal:

Interlocutory decision of the Opposition Division of the European Patent Office posted on 4 April 2023 concerning maintenance of the European Patent No. 3495396 in amended form.

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 concerning maintenance of the European Patent No. 3 495 396 in amended form on the basis of the claims of the main request filed with letter of 7 January 2022, an amended description and the unamended figures.

II. Claims 1, 3, 4 and 8 of the main request read as follows:

"1. Hollow resin particles comprising a thermoplastic resin shell and a hollow part surrounded by the shell; wherein the true specific gravity of the hollow resin particles ranges from 0.01 to 0.10;

wherein the thermoplastic resin is a polymer produced from a polymerizable component containing 0.6 to 3.0 wt% of a crosslinkable monomer having at least two polymerizable carbon-carbon double bonds per molecule and 97 to 99.4 wt% of an uncrosslinkable monomer having one polymerizable carbon-carbon double bond per molecule;

wherein the uncrosslinkable monomer contains a nitrile monomer and wherein the nitrile monomer contains acrylonitrile, the amount of acrylonitrile in the uncrosslinkable monomer ranges from 60 to 93 wt%;

wherein a blowing agent is encapsulated in the hollow resin particles and the blowing agent contains 50 to 100 wt % of an organic compound having a vapor pressure higher than 100 kPa at 25°C; and

wherein the encapsulation ratio of the blowing agent ranges from 3 to 13 wt% of the hollow resin particles."

"3. The hollow resin particles according to Claim 1 or 2, wherein the nitrile monomer contains acrylonitrile and methacrylonitrile in a weight ratio (the weight ratio of acrylonitrile to methacrylonitrile) ranging from 65:35 to 99:1."

"4. The hollow resin particles according to Claim 1 or 2, wherein the uncrosslinkable monomer contains acrylonitrile and methyl methacrylate and the total amount of the acrylonitrile and methyl methacrylate ranges from 90 to 100 wt% of the uncrosslinkable monomer."

"8. A process for producing hollow resin particles comprising;
a step 1 in which an oily mixture containing a polymerizable component and blowing agent is dispersed in an aqueous dispersion medium and the polymerizable component is polymerized into heat-expandable microspheres; and
a step 2 in which the heat-expandable microspheres produced in the step 1 is thermally expanded;
wherein the true specific gravity of the hollow resin particles ranges from 0.01 to 0.10;
wherein, in the step 1, the polymerizable component contains 0.6 to 3.0 wt% of a crosslinkable monomer having at least two polymerizable carbon-carbon double bonds per molecule and 97 to 99.4 wt% of an uncrosslinkable monomer having one polymerizable carbon-carbon double bond per molecule, the uncrosslinkable monomer contains a nitrile monomer and wherein the nitrile monomer contains acrylonitrile, the amount of acrylonitrile in the uncrosslinkable monomer ranges from 60 to 93 wt%, the amount of the blowing

agent ranges from 4 to 15 parts by weight to 100 parts by weight of the polymerizable component, and the blowing agent contains 50 to 100 wt % of an organic compound having a vapor pressure higher than 100 kPa at 25°C."

III. The following documents were *inter alia* submitted during the opposition proceedings:

D1:	EP 1 288 272 A1
D2:	JP 2011-195813
D2a:	English translation of D2
D3:	US 7,232,607 B2
D4:	WO 2007/091960 A1
D5:	WO 2007/091961 A1
D6:	WO 2007/142593 A1
D7:	EP 0 572 233 B2
D8:	Experimental data filed by the patent proprietor with letter of 7 January 2022
D9:	Experimental data filed by the opponent with letter of 25 November 2022
D10:	Experimental data filed by the patent proprietor with letter 16 January 2023

IV. As far as it is relevant to the present appeal, the decision under appeal can be summarized as follows:

- Claims 1, 3, 4 and 8 met the requirements of Article 123(2) EPC.
- D9 and D10 were admitted into the proceedings.
- D2 and not D1 or any of D3-D6 was the document representing the closest prior art for claims 1 and 8 of the main request.
- Claims 1 and 8 of the main request involved an inventive step over D2. The same applied also if D1

was taken as the closest prior art.

V. The opponent (appellant) lodged an appeal against the decision of the opposition division.

VI. The patent proprietor (respondent) filed the experimental report D11 with their rejoinder.

VII. The Board issued a communication dated 23 December 2024 containing a preliminary opinion on the facts of the case.

VIII. The respondent submitted a reply to the communication of the Board together with the experimental report D12 with letter of 3 April 2025.

IX. Oral proceedings before the Board were held on 16 April 2025.

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

- The appellant requested that the decision of the opposition division be set aside and that the patent be revoked.

- The respondent requested that the appeal be dismissed (main request) or that the patent be maintained on the basis of any one of auxiliary requests 1-8 filed with the rejoinder to the statement of grounds of appeal.

Claim 1 of auxiliary request 1 corresponded to claim 1 of the main request with the following amendment: "wherein the uncrosslinkable monomer comprises a nitrile monomer and wherein the nitrile monomer comprises acrylonitrile; **wherein** the amount of acrylonitrile in the uncrosslinkable monomer is in the range of 60 to 93 wt%" (additions in bold as compared to claim 1 of the main request). Claims 3 and 4 were unamended with respect to claims 3 and 4 of the main request.

Claim 1 of auxiliary request 2 differed from claim 1 of the main request in that the uncrosslinkable monomer contained a nitrile monomer "in an amount ranging from 70 to 99.8 wt% of the uncrosslinkable monomer". Claims 2 and 3 corresponded to claims 3 and 4 of the main request defined as dependent only on claim 1. Claim 7 corresponded to claim 8 of the main request with the same amendment as the one in claim 1.

XI. 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 D9, D11 and D12 into the proceedings, the question of inventive step of the claims of the main request and of auxiliary request 2 and the amendments made in claims 3 and 4 of the main request and auxiliary request 1.

Reasons for the Decision

1. Admittance

1.1 The question of admittance in appeal concerned the documents D9, D11 and D12.

1.2 The respondent requested that document D9 filed by the opponent during the opposition proceedings and admitted by the opposition division not be admitted into the proceedings (rejoinder, page 2, section 1.5).

1.3 The admission of D9 into the proceedings was addressed by the opposition division in section 4.2 of their decision; it was concluded that D9 had been filed in reaction to an amendment made in claim 1. The opposition division additionally considered the admittance of D9 under the aspect of its *prima facie* relevance to the question of inventive step, which appears to be an appropriate criterion in the situation (Case Law of the Boards of Appeal, 10th edition 2022, IV.C.4.5.3). There is in this respect no reason to conclude that the opposition division used its discretion to admit D9 into the proceedings in an unreasonable way. There is also no legal basis in the EPC or in the Rules of Procedure of the Boards of Appeal for retroactively excluding evidence that has been correctly admitted into the proceedings and was relied upon by an opposition division in their decision (cf. Article 12(2) RPBA and Case Law, V.A.3.4.4). On this basis document D9 is part of the appeal proceedings.

1.4 The respondent requested the admission of D11 and D12, two experimental reports newly filed in the appeal proceedings. D11 was filed with the rejoinder (section 1.7) and D12 was filed by the respondent with their letter of 3 April 2025. The admittance of D11 and D12 into the proceedings was contested by the appellant (letter of 9 April 2025, page 2, first three paragraphs).

1.4.1 The respondent set forth that D11 should be admitted into the proceedings because it was filed in direct response to the reasoning of the opposition division laid out in section 6.3.1, on page 12, third paragraph of the decision under appeal. In that section of the decision the opposition division established that the examples of the patent in suit did not show that the hollow resin particles showed a positive effect on pressure resistance for amounts of crosslinkable monomer and acrylonitrile taken at the lower limits of the ranges in claim 1 as well as an encapsulation ratio of the blowing agent taken at the upper limit of its range.

1.4.2 D11, as argued by the respondent, directly addresses that point as it contains examples and comparative examples of hollow resin particles with amounts of crosslinkable monomers (0.58 wt.-%, 0.60 wt.-% and 0.63 wt.-% in examples 1, 2 and 3 respectively), acrylonitrile (56.0 wt.-%, 59.1 wt.-% and 61.4 wt.-% in examples 4, 5 and 6 respectively) and encapsulation ratios of the blowing agent (12.5 % and 13.6 % in examples 7 and 8) chosen around the lower limit, respectively upper limit of the corresponding ranges defined in claim 1 of the main request for the crosslinkable monomer (0.6-3.0 wt.-%), the acrylonitrile (60-93 wt.-%) and the encapsulation ratio (3-13 wt.-%). In this respect, filing D11 with the rejoinder is a legitimate attempt to address the decision under appeal on the question of the pressure resistance of the claimed hollow resin particles.

1.4.3 The appellant however argued that D11 should not be admitted into the proceedings as they considered that it could have been filed earlier during the opposition proceedings, in particular in reply to the filing of D9 and the corresponding discussion about the alleged lack of an effect on the pressure resistance of the hollow resin particles resulting from their content in crosslinkable monomer and acrylonitrile (letter of 25 November 2022, section 2.2.2 on page 6 discussing D9).

1.4.4 The appellant had effectively addressed the question of the presence or absence of an effect over the closest prior art D2 in their discussion of D9, the argument made by the appellant in that letter being that the effect allegedly shown in the examples of the patent in suit was in fact not achieved, as allegedly shown by experimental evidence (letter of 25 November 2022, page 6, section 2.2.2.3). Even if that argument of the opponent relates to the pressure resistance of hollow resin particles, it is nevertheless different from that laid out in decision under appeal (section 6.3.1) and it is not such that the respondent could have anticipated the conclusion reached by the opposition division in section 6.3.1 of their decision from D9.

1.4.5 The Board concludes therefrom that the course of the opposition proceedings does not show that D11 should have been submitted before the opposition division. In the circumstances of the appeal case, in accordance with the principles laid out in Article 12(6) RPBA, the Board finds it appropriate to exercise its discretion by admitting document D11 into the appeal proceedings.

1.4.6 D12 is a further experimental report submitted by the respondent with their letter of 3 April 2025, after the communication of the Board from 23 December 2024. The respondent argued that D12 was filed in reaction to the preliminary opinion of the Board questioning the comparability of the examples contained in D11 (letter of 3 April 2025, page 65, third paragraph).

1.4.7 It is apparent that the point referred to by the respondent is in section 8.2.18 of the preliminary opinion of the Board in which the Board questioned whether examples 2 and 4-8 of D11 could show an effect on the ground that the hollow resin particles made in these examples differed from one another in more than one of the distinguishing features.

1.4.8 D12 contains four tables containing in total 22 examples describing hollow resin particles differing from one another in only one of the distinguishing features over the closest prior art. D12 therefore is a *bona fide* reaction to the point raised by the Board in their preliminary opinion. Since D11 had, to that point, not been commented upon by the appellant, the preliminary opinion of the Board was also the first instance in which D11 was addressed and in that respect it can be concluded that D12 is a legitimate and timely reaction to the criticism of D11.

1.4.9 The Board therefore finds that the preliminary opinion of the Board on the relevance of D11 constituted an exceptional circumstance that justified the filing of D12. On that basis the Board admits document D12 into the proceedings (Article 13(2) RPBA).

Main request

2. Inventive step

Closest prior art D2

2.1 D2 was seen as the closest prior art in the decision under appeal (section 6.2). D2 deals with the same problem as the patent in suit, the improvement of pressure resistance of expanded hollow particles while maintaining their spherical shape (D2, paragraphs 6 and 16; patent in suit, paragraph 14). Both parties in appeal accepted that the hollow particles produced in example 6 of D2 represented the most relevant part of D2 for the subject-matter of claim 1 of the main request. The Board sees no reason to depart from this choice. D2 is a Japanese patent application for which an English translation (D2a) is provided. Where passages in "D2" are quoted, this is intended to refer to the passages in D2a as was done in the decision under appeal.

2.2 The opposition division established that the hollow resin particles according to claim 1 of the main request differed from the hollow resin particles of example 6 of D2 in that

(i) the thermoplastic resin contained 0.6 to 3.0 wt.-% of a crosslinkable monomer having at least two polymerizable carbon-carbon double bonds per molecule, example 6 of D2 containing trimethylolpropane trimethacrylate in a recalculated amount of 0.4 wt.-% instead,

(ii) the thermoplastic resin contained 97 to 99.4 wt.-% of an uncrosslinkable monomer having one polymerizable carbon-carbon double bond per molecule wherein the uncrosslinkable monomer contains a nitrile monomer and wherein the nitrile monomer contains acrylonitrile, the amount of acrylonitrile in the uncrosslinkable monomer ranging from 60 to 93 wt.-%, example 6 of D2 containing acrylonitrile in a recalculated amount of 56 wt.-% instead,

(iii) the hollow resin particles had an encapsulation ratio of the blowing agent of 3 to 13 wt.-%, example 6 of D2 disclosing hollow resin particles with an encapsulation ratio of 14 wt.-%.

2.3 The appellant did not contest distinguishing features (i) and (ii), but considered that feature (iii) was disclosed in D2, reference being made to the tested particles disclosed therein.

2.4 Indeed, the hollow resin particles of example 6 of D2 are disclosed to have been subjected to a repeated high temperature pressure resistance treatment as shown in paragraphs 77 and 80, from which their encapsulation ratio decreased from 14 wt.-% to 12 wt.-% (Table 2, inclusion rate and inclusion rate after repeated high temperature pressure resistance). The appellant considered that the particles obtained after the repeated high temperature pressure resistance treatment could be taken as a valid starting point for the assessment of inventive step, especially since they had an encapsulation ratio according to claim 1 of the main request (3-13 wt.-%).

2.5 The repeated high temperature pressure resistance treatment used in the examples of D2 and described in paragraph 77 is presented as a way of evaluating the durability of hollow resin particles by indexing the shape of the thermally expandable microspheres, the degree of uniformity of their shell thickness and the presence of large particles on the inner side of their shell (paragraph 17). The high temperature treatment is as such not part of the production process of the hollow resin particles of D2 and the particles obtained after treatment are not the final product of D2 but rather a by-product of a test meant to establish the quality of the expandable microspheres. In this respect, the Board does not find that the particles obtained after high temperature treatment disclosed in the examples of D2 represent the hollow resin particles produced according to the teaching of that document. In view of this the skilled person would not consider applying the general teaching of D2 to these particles. The Board therefore finds that the particles according to example 6 of D2 obtained after repeated high temperature pressure resistance treatment are not a valid starting point within D2, while the proper starting point is represented by the produced particles before the stress test.

2.6 The distinguishing features of claim 1 of the main request over the hollow resin particles of example 6 of D2 are therefore the ones listed in point 2.2 above. As to the correct value of the encapsulation ratio, the appellant further made the point that the actual encapsulation ratio of the blowing agent in the hollow resin particles of example 6 of D2 would be as low as 13.5 wt.-% according to their own reworking (reported in D8). As this value was not disputed by the respondent, it is accepted by the Board.

Effect and problem

2.7 It is established case law of the Boards that an unexpected effect demonstrated in a comparative test can be taken as an indication of inventive step on condition that the nature of the comparison with the closest state of the art is such that the alleged advantage or effect is convincingly shown to have its origin in the distinguishing feature or combination of distinguishing features of the invention as compared with the closest state of the art (Case Law of the Boards of Appeal, 10th edition, 2022, I.D.4.3.2).

2.8 The presence or absence of an effect relating to any one of the distinguishing features or their combination is a question that was extensively debated between the parties throughout the opposition and appeal proceedings. Among the several experimental evidence provided by the respondent in the course of these proceedings (patent in suit, D10, D11 and D12), D12 is the one that was found to be the most relevant at the oral proceedings before the Board.

2.9 D12 is an experimental report comprising 22 examples and comparative examples showing the compositions and properties of hollow resin particles.

(a) Examples 1-5 (first and third tables of D12) show hollow resin particles obtained from compositions differing only in their amount of acrylonitrile in the uncrosslinkable monomer mixture. The amount of acrylonitrile is varied within a range of 54.5 to 72.7 wt.-% to demonstrate the criticality of the lower part of the range defining the distinguishing feature (ii). In particular, example 1 and example 2 in the first table of D12, with an amount of acrylonitrile of 54.5 and 59.1 wt.-% respectively, lead to hollow resin particles which are not pressure resistant, as indicated by the increase of true specific gravity before and after pressurization of the particles of 1.00 to 1.30 (example 1) or 1.22 (example 2) under a load of 10 MPa×1h. In the case of example 3 to example 5 of D12 however, with an amount of acrylonitrile of 61.4, 63.6 and 72.7 wt.-%, within the range defined in operative claim 1 (60-93 wt.-%), the more moderate variations of true specific gravity before and after pressurization of the particles from 1,00 to 1.11 (example 3), 1.10 (example 4) or 1.06

(example 5) under the same load demonstrate that the hollow resin particles are more pressure resistant than the ones of examples 1 and 2.

The improved pressure resistance is confirmed by example 13 to example 18 in the third table of D12, which also vary the amount of acrylonitrile and shows that when the amount of acrylonitrile is according to claim 1 of the main request (62.3, 65.9 and 70.5 wt.-% as shown in example 16 to example 18) the variations of true specific gravity under pressure (1.00 to 1.13, 1.07 and 1.05 respectively) are more moderate than for example 13 to example 15 with amounts of acrylonitrile of 52.3, 55.9 and 58.2 wt.-%, respectively (1.00 to 1.30, 1.27 and 1.26 respectively).

That effect of the amount of acrylonitrile on the pressure resistance of hollow resin particles was not disputed by the appellant at the oral proceedings before the Board, nor does the Board see any reason to come to a different conclusion especially since the nature of the comparisons made, with only one variable in the composition of the hollow resin particles (the amount of acrylonitrile), shows a direct causality between the variable and the effect (Case Law of the Boards of Appeal, 10th edition, 2022, I.D.4.3.2).

(b) In examples 6 to 9 of D12 (second table), hollow resin particles are disclosed in which the amount of acrylonitrile was kept constant in the composition of the thermoplastic resin and the amount of crosslinkable monomer, triallyl isocyanurate, was varied from 0.41 wt.-% to 0.81 wt.-%.

In examples 6 and 7 the amount of crosslinkable monomer (0.41 wt.-% and 0.50 wt.-% respectively) was chosen outside the range in claim 1, i.e. 0.6-3.0 wt.-%, which resulted in hollow resin particles that were not pressure resistant, as indicated by the variation of their true specific gravity before and after pressurisation (from 1.00 to 1.30 in both examples 6 and 7). By contrast, the hollow resin particles of example 8 and example 9 for which the amount of crosslinkable monomer was selected to be at the lower end of the claimed range (0.63 and 0.81 wt.-% respectively), display an improved pressure resistance as shown by the more moderate variations of their true specific gravity (from 1.00 to 1.15 or 1.07 respectively). The results shown in example 6 to example 9 are in line with the results reported for examples 19 to 22 in the fourth table of D12 in which an amount of crosslinkable monomer of 0.41 and 0.50 wt.-% in example 19 and example 20 resulted in hollow resin particles that were less pressure resistant than those in examples 21 and 22 in which the amount of crosslinkable monomer was 0.61 wt.-% and 0.90 wt.-% respectively.

That effect of the amount of crosslinkable monomer on the pressure resistance of hollow resin particles was also not disputed by the appellant at the oral proceedings before the Board, nor does the Board see any reason to come to a different conclusion especially since the nature of the comparisons made, with only one variable in the composition of the hollow resin particles (the amount of crosslinkable monomer), shows a direct causality between the variable and the effect (Case

Law of the Boards of Appeal, 10th edition, 2022, I.D.4.3.2).

(c) Examples 10-12 of D12 (second table) were also discussed at the oral proceedings before the Board. The respondent argued that these examples showed an effect of the encapsulation ratio of the blowing agent on the pressure resistance of the hollow resin particles. In example 10 and example 12, the actual encapsulation ratio of the blowing agent of the hollow resin particles is 2.3 wt.-%, respectively 17.4 wt.-% and thus outside the range defined in claim 1 of the main request (3 to 13 wt.-%). The values of the true specific gravity of the hollow resin particles before and after pressurisation (from 1.00 to 1.30 for both examples) show a lack of pressure resistance. By contrast, example 11 shows that when the encapsulation ratio of the blowing agent is 11.5 wt.-% the hollow resin particles display an improved pressure resistance as can be derived from the values of true specific gravity before and after pressurization (from 1.00 to 1.08).

The appellant objected to examples 10-12 of D12 on the grounds that the composition of the blowing agent used in the preparation of the heat expandable microspheres was different in each of the examples. It is indeed correct that the hollow resin particles according to example 10 were produced with 8 grams of 100% isobutane, those of example 11 with 32 grams of a mixture of 93.75% isobutane and 6.25% isopentane and those of example 12 with 52 grams of a mixture of 96.15% isobutane and 3.85% isopentane.

It was however made plausible by the respondent that the overall amount of blowing agent (gas) in grams used in the preparation of the hollow resin particles was necessary to adjust the encapsulation ratio of blowing agent in the particles as the increase in the amount of blowing agent in the preparation of examples 10-12 is associated with an increase of the encapsulation ratio in the produced particles. The Board sees the amount of blowing agent used in the process merely as a parameter at the disposition of the experimenter that is ultimately reflected in the encapsulation ratio of both the heat expandable microspheres and then in the hollow resin particles.

It is acknowledged that the blowing agents used in examples 10-12 do not have the same composition. The amount of isopentane used alongside isobutane in the blowing agents of examples 11 and 12 is however small (3.85% and 6.25%) and as such it is not credible that it has a significant impact on the pressure resistance of the produced hollow resin particles which is 73% better for example 11 than for examples 9 and 12 as shown by their values of true specific gravity after pressurization at 10 MPa for 1h (1.08 for example 11 and 1.30 for examples 10 and 12).

The Board therefore comes to the conclusion that the examples 10-12 in the second table of D12 do establish that the choice of the encapsulation ratio of the blowing agent in the hollow resin particles results in an improved pressure resistance over the closest prior art.

2.10 The Board concludes from points (a) to (c) above that the examples and comparative examples of D12 establish that each distinguishing feature (i) 0.6 to 3.0 wt.-% of a crosslinkable monomer having at least two polymerizable carbon-carbon double bonds per molecule, (ii) 60 to 93 wt.-% of acrylonitrile and (iii) encapsulation ratio of the blowing agent of 3 to 13 wt.-% results in an improvement of the pressure resistance of the hollow resin particles.

2.11 The appellant contested the presence of an effect linked to the distinguishing features on the basis of document D9. D9 is an experimental report of the appellant containing six examples based on the composition disclosed in example 6 of D2 (statement of grounds of appeal, page 11, third paragraph).

2.12 The appellant explained that example 1 of D9 was performed with the same monomers and relative amounts and the same blowing agent mixture as in example 6 of D2. Examples 2-6 in D9 are based on example 1 wherein the amounts of crosslinkable monomer and acrylonitrile have been varied to establish whether any one of these two features has an effect on the properties of the hollow resin particles (statement of grounds of appeal, page 12).

2.13 D9 discloses that dried unexpanded microspheres obtained after polymerization of each monomer mixture were analyzed to determine their expansion temperature as well as their encapsulation ratio of blowing agent (page 1, second paragraph). In a next step the dried unexpanded microspheres are said to have been expanded at 150-155°C for 2 minutes in an oven (D9, paragraph bridging pages 1 and 2) to produce hollow resin particles. The expanded particles were analyzed and their true specific gravity, their encapsulation ratio of blowing agent after expansion as well as their pressure resistance are reported in the second table of D9.

2.14 The appellant showed with the comparison of the true specific gravity of the hollow resin particles before and after pressurization (at both 100 bar and 200 bar) in the second table of D9 that all hollow resin particles of examples 1-6 collapsed and therefore were not pressure resistant (statement of grounds of appeal, page 12, last paragraph).

2.15 The respondent contested the validity of that conclusion and explained that the hollow resin particles obtained in D9 could have been faulty (leaky) as one would conclude from their encapsulation ratio before and after expansion (retention rate) (letter of 3 April 2025, pages 45-52). The respondent in particular showed with a comparison of the total blowing agent content in the particles before and after expansion in the second table of D9 that the particles obtained in examples 3-6 after expansion at 150-155°C for 2 minutes had lost up to half of their encapsulated blowing agent (letter of 3 April 2025, page 45, third full paragraph) which was in stark contrast to what was typically observed for hollow resin particles as in D10 and D12 (encapsulation ratio of blowing agent after blowing/before blowing all above 90%).

2.16 The respondent argued that thermal expansion was normally performed in a specifically conceived expansion unit containing an airflow reactor (patent in suit, paragraph 217 and Figure 3) which seems to be essentially the same process that was used in D2 (paragraph 73 and Figure 3). D9 by contrast discloses that for the expansion of the particles an oven (150-155°C for 2 minutes) was used for which the respondent made plausible that it may have lead to a deterioration of the hollow resin particles and as a result a loss of blowing agent.

2.17 The Board is persuaded by the doubts of the respondent as to the reliability of the experiments in document D9. This conclusion is supported by D10 containing a rework of the examples disclosed in D9 but in which the expansion of the particles was performed in an expansion unit containing an airflow reactor as used in D2 (rejoinder, page 76, last paragraph). The encapsulation ratios of blowing agent after and before expansion reported in the tables of D10 confirm that a blowing agent retention rate of over 90% could be obtained for each of the examples of D9 when the particles were expanded in a typical expansion unit with airflow reactor as the one used in D2 (examples 1-9, "Foaming agent retention rate before and after thermal expansion" in Table 2 of D2). Under these circumstances, the Board finds that there are legitimate doubts, confirmed by the additional experimental evidence D10, about the conclusions drawn up on the pressure resistance by the appellant for the examples of D9. In view of this, the Board finds that D9 does not invalidate the effect on pressure resistance shown in D12.

2.18 On the basis of the evidence available, the Board concludes that the problem solved over example 6 of D2 is the provision of hollow resin particles with improved pressure resistance.

Obviousness

2.19 The appellant argued that the ranges defining the amount in crosslinkable monomer (distinguishing feature (i)) and the amount in acrylonitrile (distinguishing feature (ii)) were obvious in view of D2 itself or any of D1, D3 or D7 (statement of grounds of appeal, page 24, first paragraph of section 4.2.1.2.4 with reference to section 4.2.1.1.4 on pages 18-22) and that the encapsulation ratio (distinguishing feature (iii)) was obvious in view of any of D1-D6 (statement of grounds of appeal, section 4.2.1.2.4).

2.20 Claim 1 of the main request defines a range for the amount of acrylonitrile in the uncrosslinkable monomer of the hollow resin particles of 60-93 wt.-% while example 6 of D2 discloses the use of a recalculated amount of 56 wt.-% acrylonitrile. The appellant argued that D2 itself or alternatively D1, D3 or D7 taught higher amounts of acrylonitrile in the thermoplastic resin.

(a) D2 indeed discusses the presence of a nitrile based monomer in the thermoplastic resin composition and teaches that its amount is not limited and is preferably 80 wt.-% or more (paragraph 26). D2 also links in the same paragraph the presence of a nitrile-based monomer to the retention and heat resistance of the foaming (blowing) agent in the expandable particles, but there is no teaching in D2 from which it can be concluded that raising the amount of acrylonitrile from 56 wt.-% to a value in the range of 60-93 wt.-% would improve the pressure resistance of hollow resin particles.

(b) D1 discloses the preparation of heat expandable microspheres with acrylonitrile amounts of up to 80 wt.-% (paragraphs 38-45) and discloses in examples 1-4 microspheres with 64.4 wt.-% (example 1), 65 wt.-% (example 2), 67 wt.-% (example 3) and 70 wt.-% (example 4) of acrylonitrile. There is however no teaching in D1 as to the selection of an amount of acrylonitrile to improve the pressure resistance of hollow resin particles.

(c) D3 concerns the preparation of thermally foamable microspheres and teaches the use of acrylonitrile in a preferred range of 20-80 wt.-% (column 6, lines 29-38) resulting in thermally foamable microspheres with improved processability, foaming capability, gas barrier properties, solvent resistance. The appellant considered that using acrylonitrile in an amount of 20-80 wt.-% to improve gas barrier properties would lead the skilled reader of D3 to distinguishing feature (i) of claim 1 of the main request. The appellant however did not show that a motivation to raise gas barrier properties, as taught in D3, would be read by the skilled person as also meaning an improvement of the pressure resistance of the hollow resin particles. In fact, the respondent argued plausibly that the two properties are not always necessarily linked (rejoinder, page 47, last paragraph and page 48, first paragraph and letter of 3 April 2025, page 83, last paragraph).

(d) The appellant considered that since example 4 of D7 disclosed the use of 62.5 wt.-% of acrylonitrile to produce thermoexpandable microcapsules, D7 would suggest the use of acrylonitrile in an amount falling within the range of 60-93 wt.-% as required in claim 1 of the main request. The use of acrylonitrile as a monomer in the particles is disclosed in paragraphs 9-16 of D7 but there is no teaching concerning their amount beyond the specific compositions of the examples nor any mention of the pressure resistance of expanded particles in D7. D7 therefore cannot lead to distinguishing feature (i) in order to solve the problem posed.

2.21 Claim 1 of the main request defines a range for the amount of crosslinkable monomer in the thermoplastic resin of 0.6-3.0 wt.-% while example 6 of D2 discloses the use of a recalculated amount of 0.4 wt.-%.

(a) While D2 teaches the presence of crosslinkable monomers in the thermoplastic resin in a preferred amount of 0.3-0.9 wt.-% (paragraph 28) and links the use of these monomers to the suppression of the "temporal decrease in the retention rate of the contained foaming agent during thermal expansion" and to an effective thermal expansion of the thermally expandable microspheres (paragraph 27), there is no teaching in D2 that would have led a skilled person to the range of 0.6-3.0 wt.-% to improve the pressure resistance of the produced hollow resin particles specifically.

(b) Paragraph 58 of D1 generally teaches amounts of crosslinkable monomer in the thermoplastic resin of generally more than 1 wt.-% but there is no specific teaching in D1 as to any improvement of the pressure resistance of hollow resin particles linked to the amount of that monomer.

(c) D3 discloses the use of crosslinkable monomers (column 6, starting at line line 39) and a preferred range for the amount thereof between 1.3 and 3 wt.-% (column 8, lines 21-28). There is however no teaching in D3 that could have led the skilled person to choose that range with the expectation of improving pressure resistance in hollow resin particles specifically.

(d) D7 mentions the use of a crosslinker component in paragraph 18 but it does not contain any teaching relating to its amount in the particles nor does it mention pressure resistance of the produced hollow resin particles.

2.22 The appellant also argued that the choice of an encapsulation ratio of the blowing agent in the range of 3-13 wt.-% as defined in claim 1 of the main request was a marginal and arbitrary modification in view of any of D1-D6 (statement of grounds of appeal, page 24, section 4.2.1.2.4, second paragraph). The appellant referred to passages in these documents - D1 (paragraph 100, example 6), D2 (comparative examples 1-9, examples 7 and 8), D3 (column 13, lines 42-49), D4 (examples 12 and 13), D5 (examples 2, 6 and 7) and D6 (page 5, line 21) - that either showed examples of particles with an encapsulation ratio of the blowing agent in the range of 3-13 wt.-%, or disclosed the use of an amount in blowing agent that allegedly would result in an encapsulation ratio within that range. In none of these passages however it is disclosed that an encapsulation ratio of the blowing agent in the range of 3-13 wt.-% would solve the problem posed, the improvement of pressure resistance of hollow resin particles. The appellant argued at the oral proceedings before the Board that it would be inherent from D2 that the more the polymer shell was stable, in particular as a result of specific amounts of encapsulated blowing agent, the more pressure resistant would be the hollow resin particles. If this were the case, however, hollow resin particles would be even more stable with increasing amounts of encapsulated blowing agent, i.e. above 13 wt.-%, which is shown not to be the case in example 12 of D12 for which an encapsulation ratio of 17.4 wt.-% leads to a worse pressure resistance than the one in example 11 with an encapsulation ratio of 11.5 wt.-%. The Board therefore finds that it cannot be concluded that it would have been obvious to select an encapsulation ratio of the blowing agent in the range of 3-13 wt.-% in order to solve the problem of providing hollow resin particles with improved pressure resistance.

2.23 In view of this none of the distinguishing features (i) to (iii) would be an obvious modification when aiming at providing hollow resin particles with improved pressure resistance. On this basis, the Board concludes that claim 1 of the main request is inventive over the closest prior art represented by example 6 of D2.

Further inventive step objections

2.24 The appellant maintained further inventive step objections starting either from comparative example 5 of D2 (statement of grounds of appeal, page 9, section 4.2.1.1), example 6 of D1 (ibid., page 25, section 4.2.2), example 1 of D3 (ibid., page 30, section 4.2.3), examples 12 and 13 of D4 (ibid., page 34, section 4.2.4), examples 6 and 7 of D5 (ibid., page 36, section 4.2.5) or example 2 of D6 (ibid., page 38, section 4.2.6). The first question that was in dispute between the parties was whether the starting point chosen by the appellant in each of these documents could be considered as a reasonable starting point for the assessment of an inventive step of claim 1 of the main request. Only for the reasonable starting points, the further arguments of the appellant on the question of inventive step need to be analysed.

(a) Comparative example 5 of D2

The particles of comparative example 5 of D2 were prepared with the same process as the one in example 6 (paragraph 83) except that, in the aqueous dispersion medium of the polymerization, ethylenediaminetetraacetic acid (EDTA) was used in place of a carboxylated polyethylene imine of weight average molecular weight 50 000 (CMPEI) as in example 6. The preparation of the particles of comparative example 5 are not according to the teaching of D2 because D2 requires, for the polymerization, the presence of a polyalkylene imine having essentially a molecular weight of 1 000 or more (D2, page 2, claim 4). EDTA used in comparative example 5 of D2 is however an ethylene amine of lower molecular weight.

The properties of the particles obtained according to comparative example 5 are shown in Table 2 of D2. The appellant acknowledged that the hollow resin particles of comparative example 5 had a non-uniform shell thickness, large resin particles on the inner side of the shell and/or a non-spherical shape, in contrast with the requirements laid out in paragraph 11 of D2. The appellant however argued that these particles would still be considered as representing the closest prior art on the grounds that the particles obtained in comparative example

5 were still expandable and had repeated high temperature resistance despite their inferior shapes (statement of grounds of appeal, page 9, first and second paragraphs).

The provision of hollow resin particles with a spherical shape (even after applying high pressure) is however a primary aim of the patent in suit (paragraphs 9 and 30). In view of this, comparative example 5 in D6 is not only not according to the teaching of that document but also a clearly disadvantageous starting point within the closest prior art which discloses particles of spherical shapes, such as in example 6, which are aligned with the teaching of the document and the aims of the patent in suit. The choice of comparative example 5 as starting point within the disclosure of D2 based possibly only on the number of distinguishing features would therefore necessarily be the result of hindsight and as such is not permissible.

(b) D1 and D3

D1 and D3 have the same object, namely the preparation of thermally foamable microspheres (claim 1 of D1 and D3). The appellant argued at the oral proceedings that example 6 of D1 and example 1 of D3 could be selected as the closest prior art for claim 1 of the main request because they related to thermally foamable microspheres having a structure wherein a foaming agent was encapsulated in a shell formed of a polymer and the microspheres were expanded to provide hollow resin particles.

D1 and D3 however mainly concern the production of thermally foamable microspheres having improved processability (D1, paragraph 22 and D3, column 3, lines 20-28). While the thermally foamable microspheres are designed with their expansion ratio in mind (expansion ratio being part of the definition of claim 1 in D1 and D3), it is apparent that the thermally foamable microspheres of D1 and D3 are intended to be expanded in a polymer matrix through foaming extrusion moulding or kneading/ moulding (D1, paragraph 14; D3, column 2, lines 27-30).

In this respect, the purpose of D1 and D3 differs from that of the patent in suit in which the purpose is to produce hollow resin particles as such (paragraphs 1, 14 and 26 and claim 1). Besides, neither D1 nor D3 mention the problem of pressure resistance of the produced hollow resin particles which is the central property of the hollow resin particles in the patent in suit (paragraph 14) while it is of no interest for the expansion according to D1 and D3. On that basis neither D1 nor D3 is a reasonable starting point to assess inventive step of the subject-matter of claim 1 of the main request.

(c) D4, D5 and D6

The appellant maintained their objection of lack of inventive step in view of D4 (examples 12 and 13), D5 (examples 6 and 7) and D6 (example 2) (statement of grounds of appeal, sections 4.2.4, 4.2.5, 4.2.6). While the respondent had contested that any of D4-D6 could represent the closest prior art in their rejoinder (page 19, second paragraph), it was acknowledged at the oral proceedings before the

Board that D4-D6 in fact disclosed the production of hollow resin particles as such, as shown in claim 15 of D4, claim 16 of D5 and claim 15 of D6 and could be considered as reasonable starting points for the analysis of inventive step.

Examples 12 and 13 of D4 disclose the preparation of heat-expandable microspheres containing 0.3 wt.-% of trimethylolpropane trimethacrylate as crosslinkable monomer (page 12, lines 9 and 15-17) and 52 wt.-% of acrylonitrile (Table 1). The subject-matter of claim 1 of the main request therefore differs from the disclosure of the relevant examples of D4 at least in the amounts of crosslinkable monomer and acrylonitrile of the hollow resin particles.

The particles in examples 6 and 7 of D5 contain 0.3 wt.-% of trimethylolpropane trimethacrylate as crosslinkable monomer (page 12, lines 19-20 and 26-28) and either 50 wt.-% (example 6) or 58 wt.-% (example 7) of acrylonitrile (Table 1). The subject-matter of claim 1 of the main request therefore differs from the disclosure of the relevant examples of D5 at least in the amounts of crosslinkable monomer and acrylonitrile of the hollow resin particles.

Example 2 of D6 discloses the preparation of hollow resin particles containing 52 wt.-% acrylonitrile (Table 1). The particles of examples 2-10 and 17-30 are indicated to contain 0.3-1 parts trimethylolpropane trimethacrylate as crosslinkable monomer (page 13, lines 3-5) but the precise amount of that monomer in the particles of example 2 is not disclosed. The subject-matter of claim 1 of the main request therefore differs from the disclosure of the relevant example of D6 at least in the amounts of crosslinkable monomer and acrylonitrile of the hollow resin particles.

It has already been established in points 2.7 to 2.18 (Effect and problem) that the selection of an amount of crosslinkable monomer within the range 0.6-3.0 wt.-% or the selection of an amount of acrylonitrile within the range 60-93 wt.-% resulted in an improvement of the pressure resistance of the hollow resin particles. The same problem as formulated with respect to example 6 of document D2 (point 2.18, above) can therefore be maintained in view of any of D4 (examples 12 and 13), D5 (examples 6 and 7) and D6 (example 2).

None of the documents D4-D6 addresses the pressure resistance of hollow resin particles. Even if D4-D6 contain passages suggesting ranges for the amounts of acrylonitrile (D4, page 2, lines 15 and 16: 40-70 wt.-%; D5, page 2, lines 21-24 and D6, page 2, lines 12-15: 20-80 wt.-%) and crosslinkable monomer (D4, page 3, lines 31-36, D5, page 4, lines 4-8 and D6, page 3, lines 30-35: 0.1-10 wt.-%) in the hollow resin particles that overlap with the ranges defined in claim 1 of the main request, there is no teaching in D4-D6 that would have guided the skilled person to select these ranges in order to solve the problem posed, namely to improve pressure resistance of the hollow resin particles.

The appellant considered that the skilled person would find a motivation in D3 (column 3, lines 37-47 and column 8, lines 21-28) to prepare hollow resin particles according to examples 12 and 13 of

D4 and examples 6 and 7 of D5 with an amount of crosslinkable monomer in the range defined in claim 1 of the main request (statement of grounds of appeal, page 36, second paragraph for D4 and page 37, fifth full paragraph for D5 referring to the argumentation made for D2, page 20, last two paragraphs). The passages of D3 cited by the appellant indeed disclose ranges of amounts of crosslinkable monomer (greater than 1 wt.-% and up to 5 wt.-% in column 3, lines 37-47 and preferably more than 1.3 wt.-% and less than 3 wt.-% in column 8, lines 21-28) that overlap with the range defined in claim 1 of the main request (0.6 to 3.0 wt.-%). There is however no reason for the skilled person to consider these ranges when aiming at solving the posed problem since no link is made in D3 between the amount of crosslinkable monomer and any improvement of the pressure resistance.

The appellant also considered that the skilled person would find in D1 (examples 1 to 4), D3 (column 6, lines 29-38) and D7 (example 4) a motivation to prepare hollow resin particles according to examples 12 and 13 of D4, examples 6 and 7 of D5 and example 2 of D6 with an amount of acrylonitrile in the range defined in claim 1 of the main request (statement of grounds of appeal, page 36, third paragraph for D4, page 37, last paragraph for D5 and page 39, fourth paragraph for D6 referring to the argumentation made for D2, pages 21 to 22). The passages and examples of D1, D3 and D7 cited by the appellant indeed disclose values and ranges of acrylonitrile that fall within (D1: 64.4 wt.-%, 65 wt.-%, 67 wt.-% and 70 wt.-% in examples 1-4 and D7: 62.5 wt.-% in example 4) or overlap with (D3: 20-80 wt.-%) the range defined in claim 1 of the main request (60 to 93 wt.-%). There is however no reason for the skilled person to consider these ranges when aiming at solving the posed problem since no link is made between the amount of acrylonitrile and any improvement of the pressure resistance of hollow resin particles.

The Board therefore concludes that claim 1 of the main request involves an inventive step over any of D4 to D6.

The appellant argued for example 13 of D4, example 7 of D5 and example 2 of D6 (in view of D8, Tables B and C) that the encapsulation ratio of the hollow resin particles was within the range defined in claim 1 of the main request and therefore did not constitute a distinguishing feature for these specific disclosures. Since the Board already came to the conclusion that an inventive step could be acknowledged for claim 1 of the main request over these examples in view of the amounts of acrylonitrile and crosslinkable monomer in the hollow resin particles, there is no need to address the question whether the encapsulation ratio constitutes a further distinguishing feature.

Process claim 8

2.25 Inventive step

2.25.1 The appellant considered that claim 8 of the main request pertaining to a process for producing hollow resin particles lacked an inventive step over D1, in particular example 6 thereof seen as the most promising starting point (statement of grounds of appeal, section 4.3.2). Claim 8 of the main request is defined by a first step (1) wherein an oily mixture containing the polymerizable components and blowing agent is dispersed in an aqueous dispersion medium and a second step (2) in which the heat-expandable microspheres produced in step 1 are thermally expanded.

2.25.2 It has already been established in point 2.24(b) above that D1 concerns the production of thermally foamable microspheres (D1, paragraph 22) and that while the thermally foamable microspheres are designed with their expansion ratio in mind (expansion ratio being part of the definition of claim 1 of D1), it is apparent that the thermally foamable microspheres of D1 are intended to be expanded in a polymer matrix through foaming extrusion moulding or kneading/moulding (D1, paragraph 14) rather than to produce hollow resin particles as such as in the patent in suit (paragraph 26). The Board therefore finds that D1 is not a reasonable starting points to assess inventive step of claim 8 of the main request for the same reasons as given for claim 1. Since there was no further objection against the inventive step of claim 8, the Board concludes that claim 8 of the main request fulfils the requirements of Article 56 EPC.

3. Amendments

3.1 Claim 3 of the main request depends on claims 1 or 2 and further defines the hollow resin particles in that their nitrile monomer contains acrylonitrile and methacrylonitrile in a weight ratio ranging from 65:35 to 99:1. Claim 4 of the main request also depends on claims 1 or 2 and defines the hollow resin particles in that their uncrosslinkable monomer contains acrylonitrile and methyl methacrylate and the total amount of the acrylonitrile and methyl methacrylate ranges from 90 to 100 wt% of the uncrosslinkable monomer.

3.2 It was not disputed that the wording of claims 3 and 4 of the main request corresponded to that of claims 4 and 5 as originally filed, respectively. Claims 4 and 5 as originally filed however only depended on claim 2 or 3 which further limited the amount in nitrile monomer to 70 to 99.8 wt% of the uncrosslinkable monomer, a limitation that is not part of the definition of claim 1 of the main request.

3.3 Claims 3 and 4 of the main request, when they are directly dependent on claim 1, therefore define subject-matter which includes a limitation in the ratio of acrylonitrile and methacrylonitrile in the nitrile monomer (claim 3) or in the total amount of acrylonitrile and methyl methacrylate in the uncrosslinkable monomer (claim 4), without limiting the amount of nitrile monomer in the uncrosslinkable monomer as in originally filed claims 4 and 5. In view of this, the subject matter of claims 3 and 4 of the main request does not find a basis in the claims as originally filed.

3.4 The respondent argued at the oral proceedings before the Board that the subject matter of claims 3 and 4 of the main request found a basis in paragraphs 27 and 28 of the description as originally filed.

3.5 Paragraphs 27 and 28 of the application as originally filed indeed disclose the weight ratio of acrylonitrile to methacrylonitrile ranging from 65:35 to 99:1 (relevant to claim 3 of the main request) and the amount of acrylonitrile and methyl methacrylate ranging from 90 to 100 wt% (relevant to claim 4 of the main request) but there is no link between these features and the hollow resin particles as defined of claim 1 of the main request in these paragraphs.

3.6 The application as originally filed discloses hollow resin particles in paragraph 9 and defines in the following paragraphs 10-52 further features of these particles including preferred ranges. In order to arrive at claims 3 or 4 of the main request however combinations of multiple features pertaining to the true specific gravity of the hollow resin particles and the composition of the uncrosslinkable monomer must be made for which there is no pointer. Thus, even considering the broader description as originally filed the Board does not find an unambiguous disclosure of the combination of features of claims 3 and 4 of the main request when dependent on claim 1.

3.7 The Board therefore concludes that claims 3 and 4 of the main request do not meet the requirements of Article 123(2) EPC.

Auxiliary request 1

4. Amendments

4.1 Claim 1 of auxiliary request 1 corresponds to claim 1 of the main request with the addition of a semicolon and the word "wherein" in the definition of the uncrosslinkable monomer (see point X, above). The wording of claims 3 and 4 is unchanged in auxiliary request 1.

4.2 Claim 1 of auxiliary request 1 therefore contains only a change in punctuation and the addition of a term which do not have any influence in the objection regarding the lack of basis for claims 3 and 4 in the application as originally filed. The Board therefore concludes that claims 3 and 4 of auxiliary request 1 do not meet the requirements of Article 123(2) EPC for the same reasons as outlined for claims 3 and 4 of the main request.

Auxiliary request 2

5. Amendments

5.1 The appellant did not raise any objection under Article 123(2) EPC against auxiliary request 2 (last full sentence on page 3 of the minutes of the oral proceedings before the Board). It is indeed readily apparent that the claims of auxiliary request 2 meet the requirements of Article 123(2) EPC.

5.2 In particular, claim 1 of auxiliary request 2 contains the limitation of the amount of nitrile monomer to the range 70 to 99.8 wt% of the uncrosslinkable monomer. As a result, the objection which was successful against claims 3 and 4 of the higher ranking requests is no longer valid for claims 2 and 3 of auxiliary request 2 (which correspond to claims 3 and 4 of the main request).

6. Inventive step

6.1 Claim 1 of auxiliary request 2 corresponds to claim 1 of the main request wherein the uncrosslinkable monomer is limited in that it contains a nitrile monomer in an amount ranging from 70 to 99.8 wt% of the uncrosslinkable monomer. Claim 7 of auxiliary request 2 corresponds to claim 8 of the main request with the same amendment.

6.2 Both parties acknowledged at the oral proceedings before the Board that the conclusion on inventive step regarding the main request equally applied to auxiliary request 2 (sentence bridging pages 3 and 4 of the minutes). Considering that the independent claims only differ in the addition of a further feature (meant to solve an issue under Article 123(2) EPC), the Board has no reason to be of a different opinion.

6.3 The claims of auxiliary request 2 therefore meet the requirements of Article 56 EPC for the same reasons as outlined for the claims of the main request.

7. As the appellant confirmed that there were no further objections to be discussed (sentence bridging pages 3 and 4 of the minutes), there are no further issues to be decided upon.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the opposition division with the order to maintain the patent on the basis of the claims of auxiliary request 2 filed with the reply to the statement of grounds of appeal, after any necessary consequential amendment of the description.

The Registrar: The Chairman:

Beschwerdekammern des Europäischen Patentamts
Boards of Appeal of the European Patent Office
Chambres de recours de l'Office européen des brevets

D. Hampe D. Semino

Decision electronically authenticated