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Datasheet for the decision of 18 January 2021

Case Number: T 2700/17 - 3.3.03

Application Number: 11829307.5

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Language of the proceedings: EN

Title of invention:
DRIPPING INHIBITOR AND RESIN COMPOUND

Applicant:
Daikin Industries, Ltd.

Relevant legal provisions:
EPC Art. 84

Keyword:
Claims - clarity (no)

Decisions cited:
T 0762/90, T 0409/10, T 2577/11

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Case Number: T 2700/17 - 3.3.03

D E C I S I O N
of Technical Board of Appeal 3.3.03
of 18 January 2021

Appellant: (Applicant)	Daikin Industries, Ltd. Umeda Center Building 4-12, Nakazaki-Nishi 2-chome Kita-ku Osaka-shi Osaka 530-8323 (JP)
Representative:	Hoffmann Eitle Patent- und Rechtsanwälte PartmbB Arabellastraße 30 81925 München (DE)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 18 July 2017 refusing European patent application No. 11829307.5 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman	D. Semino
Members:	O. Dury
	R. Cramer

Summary of Facts and Submissions

I. The appeal by the applicant (appellant) lies against the decision of the examining division posted on 18 July 2017 refusing European patent application No. 11 829 307.5.

II. That decision was based on the main request filed with letter of 10 January 2017, on the auxiliary request filed with letter of 9 May 2017 (hereinafter 1st auxiliary request) and on the 2nd to 7th auxiliary requests filed with letter of 20 June 2017.

Claim 1 of the main request read as follows:

"1. A dripping inhibitor comprising a modified polytetrafluoroethylene, which inhibitor has

(i) an average particle size, measured according to JIS K6891, of 300-800 μm,

(ii) an apparent density, measured according to JIS K6892, of 0.40-0.52 g/ml,

(iii) a compression ratio (CR) of ≤ 1.15, measured at 25°C according to the method defined in paragraph [0040] of the present description;

(iv) an aggregate disintegration degree (ADD) with 50-sec vibration of ≥ 70%, measured at 25°C according to the method defined in paragraph [0041] of the present description;

(v) a cylinder extrusion pressure at a reduction ratio

of 1500 of ≤ 80 MPa, measured according to the method defined in paragraph [0043] of the present description; and

(vi) a standard specific gravity (SSG), measured according to ASTM D 4895-89, of 2.140-2.230."

Claim 1 of the 1st auxiliary request differed from claim 1 of the main request in that the following feature was indicated at the end of feature (v):

", wherein the vibration strength of the powder tester was preliminary adjusted so that the vibration scale of 5.5 corresponds to the amplitude of 1 mm".

Claim 1 of the 2nd and 3rd auxiliary requests corresponded to claim 1 of the main request and of the 1st auxiliary request, respectively, in which feature (i) was amended to read "an average particle size **of secondary particles**, measured according to JIS K6891, of 300-800 µm" (emphasis by the Board, to highlight the amendment made as compared with the corresponding feature of the main request).

Claim 1 of the 4th, 5th, 6th and 7th auxiliary requests corresponded to claim 1 of the main request and of the 1st, 2nd and 3rd auxiliary request, respectively, in which in feature (iv) the expression "with 50-sec vibration" was deleted.

III. In the decision under appeal, the examining division held that claim 1 of the main request lacked clarity pursuant to Article 84 EPC *inter alia* because the aggregate disintegration degree parameter (hereinafter "ADD") according to feature (iv) was uncommon in the art and insufficient information was provided in the

application as filed to measure it. In particular, no information was given regarding the frequency of tapping in step (4) and the frequency of vibration and the amplitude of vibration in step (6) of the method of determination of feature (iv) given in paragraph 41 of the application as filed (reasons: section 16.3). As a consequence, feature (iv) was unclear. The examining division further considered that the subject-matter of claim 1 of the main request lacked novelty over comparative example 2 of D2 (EP 0 861 856) and was also not inventive starting from example 1 of D2 as closest prior art.

Regarding the 1st auxiliary request, the examining division held that the amendments made in claim 1 (under the assumption that the amendments made in feature (v) should in fact have been made in feature (iv)) did not overcome all the objections retained against feature (iv) of claim 1 of the main request (reasons: section 19.1.1). Also, the objections pursuant to Articles 54 and 56 EPC retained against the main request equally applied to the 1st auxiliary request.

Finally, claim 1 of each of the 2nd to 7th auxiliary requests at least lacked clarity, novelty and inventive step for (at least part of) the same reasons as indicated above for the higher ranked requests.

The application was therefore refused.

IV. In its statement of grounds of appeal the appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of either the main request or, in the alternative, on any of the first to the ninth auxiliary requests filed therewith.

Also, the following document was filed:

D4: WO 2012/043881

V. In a communication sent in preparation of the oral proceedings, the Board identified relevant issues to be addressed. It was in particular indicated therein that the wording of claim 1 of the main request filed with the statement of grounds of appeal did not appear to reflect the intention of the applicant (section 5.2). Regarding clarity, concerns were in particular identified in respect of feature (iv) of claim 1 of the operative main request (section 6.6).

VI. With letter of 18 December 2020 the appellant filed a new main request and new first to ninth auxiliary requests in replacement of all the then pending requests. Also, the following document was filed:

D5: Declaration of Taku Yamanaka, dated 31 July 2020

Claim 1 of the main request differed from claim 1 of the main request dealt with in the contested decision in that:

- feature (i) was amended to read "an average particle size **of secondary particles**, measured according to JIS K6891, of 300-800 µm" (emphasis by the Board, to highlight the amendment made as compared with the corresponding feature of the main request dealt with in the contested decision);

- in feature (v), two commas were inserted before and after the expression "at a reduction ratio of

1500".

Claim 1 of the first auxiliary request differed from claim 1 of the main request in that the following feature was added at the end of feature (iv):

", wherein the vibration strength of the powder tester was preliminary adjusted so that the vibration scale of 5.5 corresponds to the amplitude of 1 mm".

Claim 1 of each of the second, fourth, sixth and eighth auxiliary requests corresponded to claim 1 of the operative main request, whereby the modified PTFE was defined in more details at the end of the claim.

Claim 1 of each of the third, fifth, seventh and ninth auxiliary requests corresponded to claim 1 of the first auxiliary request, whereby the modified PTFE was defined in more details at the end of the claim.

VII. The appellant's arguments, as far as relevant for the present decision, may be summarized as follows:

Main request - Article 84 EPC

(a) The method for determining the aggregate disintegration degree (ADD) for a dripping inhibitor according to feature (iv) of operative claim 1 was described in paragraph 41 of the application as filed, which was fully clear by itself. According to said paragraph 41, ADD was measured using a method comprising seven steps, whereby reference was in particular made in steps (4) and (6) to the use of a powder tester from the Hosokawa Micron Corporation (hereinafter HMC). As explained in D5, all HMC powder testers

available at the priority date of the present application did not allow to vary either the tapping frequency in step (4) or the vibration frequency in step (6). The same conclusion was to be reached also with respect to the vibration scale (amplitude) used in step (6) (which was referred to in paragraph 41 on page 13, line 35 and was explained more precisely in paragraph 135 of the application as filed). The described set value of 4.5, based on a vibration scale of 5.5 corresponding to an amplitude of 1 mm, which was confirmed at the oral proceedings before the Board to constitute a calibration procedure, together with the reference to the HMC testing machine used provided sufficient information to the skilled person to determine ADD unambiguously. For these reasons, the objection pursuant to Article 84 EPC retained in the contested decision in respect of feature (iv) according to claim 1 of the main request was to be rejected.

First to ninth auxiliary requests - Article 84 EPC

(b) The amendments made in claim 1 of the first auxiliary request provided further details how to determine ADD and was intended to remove at least the concerns of the examining division and the Board regarding the amplitude of vibrations applied in step (6) of the method of determination of ADD according to paragraph 41 of the application as filed.

(c) During the oral proceedings before the Board, it was acknowledged that the amendments made in any of the second to ninth auxiliary requests could not overcome the deficiencies related to clarity

identified above in respect of feature (iv) in case they were retained by the Board against claim 1 of the main request and the first auxiliary request.

VIII. The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the claims of the main request or, in the alternative, on the basis of the claims of any of the first to the ninth auxiliary requests, all filed with the letter of 18 December 2020.

Reasons for the Decision

Main request - Article 84 EPC

1. In the contested decision, an objection pursuant to Article 84 EPC was retained by the examining division *inter alia* in view of feature (iv) of claim 1 of the main request, namely ADD.

2. In that respect, it was not contested by the appellant that ADD is an unusual parameter, which is confirmed by the fact that its determination method is indicated in the description in some details and without any reference to usual standards (contrary to e.g. features (i), (ii) and (vi), also specified in operative claim 1). Under these circumstances, it has to be assessed whether or not the indications provided in the description of the application as filed regarding the determination of that parameter are such that they allow an unambiguous determination thereof, which is necessary in order to ensure that the skilled person can determine if he is working within or outside the scope of the claims and/or to allow a fair

comparison with the prior art.

3. As indicated in operative claim 1, the method of determination of ADD is described in paragraph 41 of the application as filed, which reads as follows:

"The aggregate disintegration degree with 50-sec vibration is measured at 25°C according to the following procedures (1) to (7):

(1) A round-shaped powder paper (diameter: 50 mm) is placed at the bottom of a SUS cylindrical cup (inner diameter: 50 mm (measured value: 51.7 mm), volume: 150 ml). The inner side surface of the cup is also covered with a powder paper.

(2) The dripping inhibitor is sieved with a 10-mesh sieve, and 50 g of the material passing through the sieve is sampled and placed in the cylindrical cup.

(3) The surface of the dripping inhibitor in the cylindrical cup is smoothened and covered with a round-shaped powder paper (diameter: 50 mm).

(4) A weight (a cylinder having a diameter of 50 mm, weight: 330 g) is placed on the powder paper on the surface, and is tapped for 20 times in a Powder Tester (Hosokawa Micron Corporation) (tapping stroke: 20 mm).

(5) After tapping, a cylindrical cake of the dripping inhibitor is taken out from the cylindrical cup.

(6) The cylindrical cake taken out is placed on a 8-mesh sieve and subjected to vibration for 50 seconds on a Powder Tester (Hosokawa Micron Corporation) (vibration scale: 4.5).

(7) The mass of the PTFE fine powder dropped by vibration is weighed and the aggregate disintegration degree is calculated from the following equation (B):

(Aggregate disintegration degree) = (Mass of dripping inhibitor passed through the sieve during 50 second vibration)/(Total mass of dripping inhibitor) x 100(% by mass) (B)".

Figures 1 to 3 of the application as filed further illustrate the making of the cake of the PTFE powder and the sieving of that cake according to above steps (1) to (5) and (6), respectively.

4. The examining division's objection of lack of clarity in respect of ADD was *inter alia* based on the following arguments (section 16.3 of the reasons of the decision: see in particular the last 7 lines on page 7 and the first 5 lines on page 8):

(a) The frequency of strokes in step (4) was unknown and had an impact on the determination of ADD;

(b) The frequency of vibration and the amplitude of vibration in step (6) were unknown and also had an impact on the determination of ADD.

It addition, in section 27.1 of the reasons of the contested decision, which was directed to additional clarity concerns regarding feature (iii) according to claim 1 of the main request (but which were not indicated as an objection on which the decision was based), the examining division further held that there was no information in the application as filed regarding the powder tester model number and

fabrication year mentioned in said steps (4) and (6) (lines 1-8 of section 27.1) and that to ensure that a comparison with the prior art could be made, care should be taken that the methods of measurement of the parameters specified in the operative claims were not only in the hand of the appellant (last sentence of section 27.1).

5. The Board shares the view of the examining division that at least the frequency of vibration and the amplitude of vibration applied in step (6) of the determination method of ADD, which determine the strength of the vibrations used to break down the cake of PTFE powder prepared and determine the amount of powder which passes through the sieve after 50 seconds, must be known in order to allow an unambiguous definition of ADD. In that respect, it is noted that said sieving is not carried out until the cake is completely broken down and effectively sieved but only to an intermediate degree reached after 50 seconds of vibrations, as is derivable from the table on page 44 of the application as filed, in which it is shown that said sieving step may be carried out for longer time (e.g. 120 seconds), whereby some more particles are further sieved. Therefore, it makes no doubt that the amount of materials sieved after 50 seconds as indicated in step (6) and, thus, the value of the parameter ADD effectively depend on the strength of the vibrations applied, i.e. on the frequency and amplitude of these vibrations.

5.1 The appellant argued that, as regards the vibration frequency and amplitude of vibration used in step (6), the reference to the powder tester of HMC to be used together with the calibration method indicated in paragraph 135 of the application as filed implicitly

disclosed the vibration conditions. In that respect, it was in particular derivable from D5 that at the priority date of the present application no powder tester model of HMC was available which provided the option to select from different frequencies of vibration in step (6) when determining ADD of a given powder sample and that they all had the same frequency of vibration. Therefore, the same results would have been obtained for ADD no matter which HMC powder tester available at the priority date was used to carry out step (6) according to the application as filed, so the appellant.

5.2 However, even when providing D5, the appellant has not indicated which absolute value of frequency of vibration was actually used in the apparatus used in step (6) of the method of determination of ADD indicated in the application as filed.

5.3 Nor has the appellant indicated which amplitude of vibration was actually used in said step (6).

5.3.1 In that respect, the appellant argued that the configuration of the powder tester regarding the amplitude of vibration was implicitly disclosed in view of the reference to a powder tester of HMC and of the further indication at paragraph 135 of the application as filed regarding the calibration used.

5.3.2 However, the indications in paragraph 135 are neither indicated in operative claim 1, nor in paragraph 41 of the application as filed. Therefore, there is no reason to consider that they mandatorily have to be applied when determining feature (iv) according to claim 1 of the operative main request.

5.3.3 In addition, even if these indications were present in the claims (as was done in the operative first auxiliary request), it would not overcome the objection made by the examining division because such a calibration procedure can only be valid for the precise apparatus used by the appellant to carry out the experiments of the application as filed (which is still not known), but says nothing as to the absolute values of that parameter i.e. which amplitude of vibration should effectively be used by the skilled person when carrying out step (6). In particular, even if it is indicated in paragraph 135 that the vibration scale of 5.5 corresponds to the amplitude of 1 mm, no information was given to clarify what the vibration scale of 4.5 (which is indicated in step (6) of paragraph 41 of the application as filed) means, either in absolute terms or as compared to the vibration scale of 5.5.

5.4 Regarding the reference to the HMC powder tester given in the application as filed and the additional information provided in D5 according to which all HMC powder testers available before the priority date of the application as filed had an identical and fixed frequency of vibration and amplitude of vibration when carrying step (6), it remains that should said apparatus have evolved over the past years and said sieving device have been modified, no comparison with a prior art document using the same apparatus would still be possible, in particular if the apparatus used in the application as filed were not to be available any more. In that respect, it has in particular to be taken into account that, in the proceedings related to the examination of the European application derived from D4, it was found out that various models of powder testers were developed by HMC throughout the years,

whereby in particular the tapping mechanics had been completely redesigned (minutes of the oral proceedings held on 12 December 2019: section 8). The same issue arises in case of future evolution of said apparatus or, even, in case said apparatus would not be available any more. In particular, should for instance a HMC powder tester which allows different frequency to be used as indicated in D5 (bottom of page 2, with reference to the PT-X apparatus) be used, the skilled person does not know which configuration should be selected, nor even if any of the options available for that apparatus actually corresponds to the ones used in the powder tester effectively used in the application as filed. Also, no information would be available if the ADD measurement were to be made with a powder tester from a different company than HMC.

For those reasons, the skilled person is, even with the information of D5, still not in a position to determine unambiguously feature (iv) according to claim 1 of the main request.

5.5 In the Board's view, the above concerns are of particular relevance because, in the absence of the information regarding the frequency of vibration and amplitude of vibration to be used in step (6) of the method of determination of ADD according to paragraph 41 of the application as filed, it cannot be ensured that the subject-matter for which protection is sought, even if it were to have been shown to be clearly defined at the priority/filing date of the present application, would remain unambiguously defined until the end of the term of the patent. In other words, that information is required to ensure that legal certainty in respect of the scope of protection is given throughout the lifetime of the patent.

It may be noted that the above conclusion, which is reached by considering that the requirements of Article 84 EPC are to be satisfied over the whole patent term and not only at the priority date, is in line with accepted case law according to which the presence of trademarks in claims is normally unallowable pursuant to Article 84 EPC because the meaning of such trademarks and therefore the definition of the subject-matter being claimed and for which protection is sought may change over time (Case Law of the Boards of Appeal of the EPO, 9th edition, 2019: II.A.3.1, paragraph related to T 762/90 of 29 November 1991; see also: T 409/10 of 8 October 2013: sections 3.2 and 3.3, end of the second paragraph, of the reasons and T 2577/11 of 17 September 2014: section 2, third paragraph, of the reasons).

6. In the Board's view, similar considerations apply regarding some additional lack of information regarding the tapping procedure used in step (4) of the determination method of ADD given in paragraph 41 of the application as filed, as already held by the examining division.

6.1 In that respect, the appellant put forward that the arguments retained by the examining division in that respect were immaterial (statement of grounds of appeal: page 5, third paragraph of section 3.2.1). It is noted that, although these arguments were put forward by the appellant in respect of clarity of the compression ratio (CR) parameter according to feature (iii) of operative claim 1, they are related to steps (1) to (5) of the method of determination of CR according to paragraph 40 of the application as filed, which are identical to steps (1) to (5) of the

determination method of ADD according to paragraph 41 of the application as filed. Therefore, these arguments of the appellant are also valid for the assessment of clarity of feature (iv) of operative claim 1.

6.1.1 However, the Board shares the opinion of the examining division that at least the frequency of tapping applied in step (4) of the method described at paragraph 41 of the application as filed is to be expected to play a role on the degree of compaction of the powder and, therefore, on the determination of the value of the parameter ADD. Indeed, at higher frequency, the powder has possibly less time to "settle down" between two strokes, which can be expected to have an impact on the resulting cake subject to the further procedure and, therefore, to have an impact on the determination of ADD, as already indicated by the examining division in the last four lines of page 7 of the contested decision.

6.1.2 In its statement of grounds of appeal, the appellant merely indicated that "it would rather seem that the frequency of tapping … has no significant influence on the resulting compaction density". That assertion is, however, not supported by any evidence or even arguments. Therefore, it is not sufficient to overcome the objection of the examining division, which, in the Board's view, is credible for the reason indicated above.

6.2 In addition to the examining division's argument regarding the frequency of tapping, the Board indicated in its communication that similar considerations appeared to be valid regarding the force of tapping applied in said step (4) (section 6.5.2, second paragraph in combination with section 6.6.3) since,

also in that respect, the stronger the force of tapping applied, the higher the compaction will be in the resulting cake thus formed.

However, no argument was provided by the appellant to refute that objection and no information regarding said force of tapping was shown to be unambiguously derivable from the application as filed or provided by the appellant in reaction to the Board's communication, in particular at the oral proceedings before the Board. In that respect, doubts in particular arise regarding the meaning of the expression "tapping stroke: 20 mm" indicated in step (4) of the method according to paragraph 41 of the application as filed.

7. In view of the above, it is concluded that essential technical information is missing in the application as filed in order for the skilled person to be able to determine unambiguously feature (iv) as indicated in operative claim 1. Further considering that the appellant has deliberately defined the subject-matter of operative claim 1 by means of that unusual parameter and using a method which was not shown to be commonly used in the art, it would have been its duty to provide full information how said feature may be unambiguously determined. Since, as explained above, that requirement is in the present case not satisfied, there is a fundamental lack of technical information concerning the determination method of that feature so that the skilled person is not in a position to determine unambiguously if he is working within or outside the scope of the operative claims. For these reasons, claim 1 of the main request does not fulfill the requirements of Article 84 EPC.

8. Under these circumstances, the arguments put forward by the appellant in appeal do not justify that the Board overturns the conclusion of the examining division on clarity regarding feature (iv) mentioned in claim 1 of the main request. For that reason, the main request does not satisfy the requirements of Article 84 EPC and is not allowable.

Auxiliary requests - Article 84 EPC

9. First auxiliary request

As compared to claim 1 of the main request, the amendments made in claim 1 of the first auxiliary request are, as acknowledged by the appellant during the oral proceedings before the Board, related to a calibration procedure of the HMC powder tester. However, as indicated in section 19.1.1 of the contested decision, although said information provides more details regarding how to configurate the powder tester used, it was still not shown to allow an unambiguous determination of feature (iv). Therefore, the conclusions reached in respect of clarity for the main request (see sections 5 and 6 above, in particular section 5.3.3 regarding said calibration procedure) are also valid for the first auxiliary request.

10. Second to ninth auxiliary requests

Claim 1 of each of the second to ninth auxiliary requests contain the same feature (iv) as in claim 1 of the main request or of the first auxiliary request. In the absence of any arguments why the amendments made in claim 1 of each of the second to ninth auxiliary requests may overcome the objections pursuant to Article 84 EPC identified above in respect of

feature (iv) according to claim 1 of the main request or of the first auxiliary request, the same conclusion in respect of clarity as outlined for claim 1 of the main request and of the first auxiliary request is bound to be reached for claim 1 of each of the second to the ninth auxiliary requests.

11. In view of the above conclusions regarding lack of clarity of feature (iv) specified in claim 1 of each of the operative requests, there is no need for the Board to deal with any other issues mentioned in the contested decision or identified in the Board's communication.

12. Since none of the appellant's requests is allowable pursuant to Article 84 EPC, the appeal is to be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

B. ter Heijden D. Semino

Decision electronically authenticated