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**Datasheet for the decision
of 12 January 2022**

Case Number: T 1447/18 - 3.3.03

Application Number: 14178173.2

Publication Number: 2829562

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C09D175/04, C08G18/40,
C08K5/524

Language of the proceedings: EN

Title of invention:
Clear coat component

Patent Proprietor:
Coatings Foreign IP Co. LLC

Opponents:
BASF Coatings GmbH
Akzo Nobel Coatings International B.V.
Covestro Deutschland AG

Relevant legal provisions:
EPC Art. 54, 56
RPBA Art. 12(4)

Keyword:

Novelty - main request (yes)

Inventive step - Main request and auxiliary requests 1-9 (no)

- Auxiliary request 10 (no)

Admittance auxiliary request 10 (yes)



Beschwerdekammern

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Case Number: T 1447/18 - 3.3.03

D E C I S I O N
of Technical Board of Appeal 3.3.03
of 12 January 2022

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Decision under appeal: Interlocutory decision of the Opposition
Division of the European Patent Office posted on
10 April 2018 concerning maintenance of the
European Patent No. 2829562 in amended form.

Composition of the Board:

Chairman D. Semino
Members: D. Marquis
K. Kerber-Zubrzycka

Summary of Facts and Submissions

- I. The appeal lies with the decision of the opposition division posted on 10 April 2018 concerning maintenance of European patent No. 2 829 562 in amended form according to the claims of the fourth auxiliary request filed during the oral proceedings before the opposition division on 7 February 2018 and an amended description.
- II. The patent was opposed on the grounds of Article 100(a) EPC (novelty and inventive step).
- III. Claim 1 as granted read as follows:
- "1. Curable clear coat component for use as a curable component of a two-component clear coat coating composition system, said curable clear coat component comprises:
- A) at least one polyaspartic acid ester or at least one hydroxyl functional binder or a combination of both, and
- B) an antioxidant component comprising
- B1) at least one sterically hindered phenol antioxidant and
- B2) at least one organophosphite antioxidant".
- IV. The decision of the opposition division was based inter alia on the following documents:
- D2: US 2004/147648 A1
- D5: Product data sheet IRGANOX®1010
- D8: EP 0 789 064 A2
- D9: WO 2004/063242 A1
- V. The contested decision was based on the claims of the patent as granted (main request) as well as on a first

to fourth auxiliary requests.

Claim 1 of the first auxiliary request differed from claim 1 as granted in that the hydroxyl functional binder in component A) was further characterized in that it "comprises at least one hydroxyl-functional (meth)acrylic copolymer and at least one polyester oligomer".

Claim 1 of the second auxiliary request differed from claim 1 of the first auxiliary request in that "the curable clear coat component comprises 0.5 to 4.0 % by weight solids of component B), relative to the total amount of the curable clear coat component".

Claim 1 of the third auxiliary request differed from claim 1 of the second auxiliary request in that the range of component B) was amended to 1.0 to 3.0 % by weight solids.

Claim 1 of the fourth auxiliary request corresponded to claim 1 as granted in which component A) was limited to "at least one polyaspartic acid ester" and it was added that "the curable clear coat component comprises 1.0 to 3.0 % by weight solids of component B), relative to the total amount of the curable clear coat component".

VI. As far as it is relevant to the present appeal, the decision of the opposition division can be summarized as follows:

- Claim 1 of the main request was novel *inter alia* over D2. With regard in particular to the composition of example 5 of D2, the commercially available product Sanko HCA was not shown to be an organophosphite and a two-fold selection was needed

within the disclosure of D2 to arrive at the combination of antioxidants as defined in claim 1 of the main request. Claim 1 of the main request however lacked novelty over example 7 of D8.

- Claim 1 of the first, second and third auxiliary requests also lacked novelty over D8.

- Claim 1 of the fourth auxiliary request found a basis in the application as originally filed and was novel over the available prior art. D2 and D9, two documents of the same patent family, were seen as the closest prior art. The reasoning made with respect to D2 was thus also valid for D9. Claim 1 of the fourth auxiliary request differed from D2 in that the composition comprised at least one organophosphite antioxidant and the curable component comprised 1.0 to 3.0 % by weight solids of component B). The differences in Hazen values for the compositions shown in table 2 of the patent in suit were not significant enough to establish the presence of an effect over D2. The problem was thus the provision of an alternative curable clear coat component to that of D2. D2 suggested that an organophosphite could be used in the composition but it did not suggest its use in combination with a sterically hindered phenol antioxidant. Since D8 was in a different field, the skilled person would not have considered to apply its teaching to the one of D2. Claim 1 of the fourth auxiliary request was thus inventive when starting from D2 as the closest prior art.

VII. The patent proprietor, opponent 2 and opponent 3 lodged an appeal against that decision.

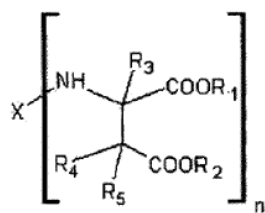
VIII. The patent proprietor in their statement of grounds of appeal relied on the claims as granted (main request) or on auxiliary requests 1-3 corresponding to the first to third auxiliary requests on which the contested decision was based. With the reply to the statement of grounds of appeal the patent proprietor additionally filed auxiliary requests 4-10.

Auxiliary request 4 corresponded to the fourth auxiliary request on which the contested decision was based.

Claim 1 of auxiliary request 5 corresponded to claim 1 of auxiliary request 4 in which the definition of component B1) was amended with the sentence "comprising butylated hydroxy toluene (BHT)".

Claim 1 of auxiliary request 6 corresponded to claim 1 of auxiliary request 5 in which the definition of component B2) was amended with the sentence "comprising at least one organophosphite antioxidant selected from the group consisting of trisnonylphenylphosphite, triphenylphosphite, triisodecylphosphite, diphenylisodecylphosphite, diphenylisooctylphosphite, trilaurylphosphite and tris(2,4-di-tert-butylphenyl)phosphite".

Claim 1 of auxiliary request 7 corresponded to claim 1 of auxiliary request 4 in which component A) was further defined by the following sentence "wherein the at least one polyaspartic acid ester is a compound of formula (I)



wherein X represents an n-valent organic group obtained by removal of the amino groups from a primary polyamine or polyetheramine; R1 and R2 are the same or different organic groups which are inert towards isocyanate groups, R3, R4 and R5 are the same or different and represent hydrogen or organic groups which are inert towards isocyanate groups; and n represents an integer with a value of at least 2".

Claim 1 of auxiliary request 8 corresponded to claim 1 of auxiliary request 7 in which the definition of component B1) was amended with the sentence "comprising butylated hydroxy toluene (BHT)".

Claim 1 of auxiliary request 9 corresponded to claim 1 of auxiliary request 8 in which the definition of component B2) was amended with the sentence "comprising at least one organophosphite antioxidant selected from the group consisting of trisnonylphenylphosphite, triphenylphosphite, triisodecylphosphite, diphenylisodecylphosphite, diphenylisooctylphosphite trilaurylphosphite and tris(2,4-di-tert-butylphenyl)phosphite".

Claim 1 of auxiliary request 10 corresponded to claim 1 of auxiliary request 9 in which the amount of component B) was amended to "1.5 to 2.5 % by weight solids".

IX. In preparation of oral proceedings, the Board issued a communication dated 28 September 2021 including a preliminary opinion on the case.

X. With letter of 12 November 2021 the patent proprietor filed auxiliary requests 1' to 6', 10' and 11 to 14. The wording of these requests is not relevant to the present decision.

XI. Oral proceedings before the Board were held by videoconference on 12 January 2022.

XII. The submissions of the patent proprietor, in so far as they are relevant for the present decision, are essentially as follows:

Novelty over D2

Main request (claims as granted)

- The commercially available product Sanko[®] HCA used in that composition was not an organophosphite as required in operative claim 1. The chemical name given for Sanko[®] HCA in paragraph 76 of D2 did not show that that product was an organophosphite either. Claim 1 of the main request was therefore novel over D2.

Inventive step over D2

Main request and auxiliary requests 1 and 2

- The compositions of examples 2 and 3 of D2 were more relevant starting points for the assessment of inventive step than the composition of example 5 because the resistance to yellowing was better for examples 2 and 3 than for example 5. Starting from the composition of example 5 in order to address the problem of yellowing was the result of

hindsight.

- Considering the composition of example 5 as a starting point, claim 1 of the main request differed therefrom in the presence of an organophosphite antioxidant.
- The effect related to that distinguishing feature was shown in the examples of Tables 4 and 5 of the patent in suit. The examples showed that Sanco HCA, used in the composition of example 5 of D2, resulted in compositions having the worst storage stability properties, in particular in comparison with TPP or TNPP used as organophosphite antioxidants. The combination of TNPP or TPP with Sanco HCA was representative of the combination of antioxidants present in the composition of example 5 of D2. The examples also showed that the combination of Sanco HCA with further antioxidants, as in example 5 of D2, led to compositions with lower stability than the compositions according to operative claim 1 shown in Table 4.
- The problem was therefore the provision of a curable clear coat component for use in a two-component clear coat coating composition which showed an improve resistance to discoloration and yellowing at room temperature as well as at elevated temperature and which had good technological properties of the film obtained from that composition.
- D2 and in particular paragraph 42 thereof did not provide a motivation to replace Sanko[®] HCA used in example 5 of D2 with an organophosphite in order to solve the problem posed. Moreover, paragraph 42 of

D2 disclosed the use of a di-substituted phenol antioxidant or a hydroxyperoxide decomposer which taught away from a combination of antioxidants. Claim 1 of the main request was therefore inventive over D2.

- The same arguments applied to claim 1 of auxiliary requests 1 and 2.

Auxiliary requests 3 and 4

- Claim 1 of auxiliary request 3 further differed from the composition of example 5 of D2 in the amount of antioxidants being in the range of 1.0 to 3.0 % by weight. Table 5 of the patent in suit showed that the storage stability reached an optimum when the amount was 2 wt.-%. The improvement resulted from the specific combination of antioxidant B2) being an organophosphite and the amount of antioxidants. The problem solved over D2 was the same as for the main request. D2 did not teach an amount of antioxidant in the range of 1.0 to 3.0 wt.-%. Starting from the amount of antioxidants (0.77 wt.-%) present in the composition of example 5 of D2, a significant increase was necessary to arrive at the range of operative claim 1. Claim 1 of auxiliary request 3 was therefore inventive over D2.
- The same arguments applied to claim 1 of auxiliary request 4.

Auxiliary requests 5 and 6

- Claim 1 of auxiliary request 5 was defined by a further distinguishing feature being the use of

butylated hydroxy toluene (BHT) as component B1). The composition of example 5 of D2 contained Irganox® 1010 which was not according to operative claim 1. Table 2 of the patent in suit showed an improved long term storage stability resulting from the use of BHT as component B1) together with TNPP or TPP. The problem solved was the provision of a curable clear coat component comprising an aspartic acid ester for use in a two-component clear coat coating composition system that did not show discoloration and yellowing at room temperature as well as at elevated temperature such as 49°C and which was colour stable for a long-term period, while at the same time good technological properties of applied films formed by a two-component coating composition system containing the curable clear coat component and a polyisocyanate cross-linking component were maintained. There was no teaching in the prior art towards the combination of features of operative claim 1. Claim 1 of auxiliary request 5 was therefore inventive starting from D2.

- The same arguments applied to claim 1 of auxiliary request 6 in which the definition of a list of organophosphites made these arguments even stronger.

Auxiliary requests 7-9

- The same arguments of inventive step given for claim 1 of auxiliary requests 4-6 applied to claim 1 of auxiliary requests 7-9.

Auxiliary request 10

Admittance

- Auxiliary request 10 was filed in reaction to section 6.3.6 of the decision of the opposition division in which it was set out for the first time that an effect had not been shown over the whole scope of claim 1 of auxiliary request 4. That point remained relevant in the discussion of inventive step throughout the appeal proceedings, in particular in view of the effect resulting from the amount of antioxidants in the composition. Auxiliary request 10 should therefore be admitted into the proceedings.

Inventive step

- Claim 1 of auxiliary request 10 further limited the range of amount of antioxidant to 1.5-2.5 wt.-%. The examples of the patent in suit provided evidence of an improved long term storage for an amount of about 2 wt.-% of antioxidant. That range was not rendered obvious by the prior art cited in appeal. Claim 1 of auxiliary request 10 was therefore inventive over D2.

XIII. The submissions of the opponents, in so far as they are relevant for the present decision, are essentially as follows:

Novelty over D2

Main request (claims as granted)

- Operative claim 1 lacked novelty over the composition of example 5 of D2. Sanko[®] HCA present in that composition was listed in paragraph 42 of D2 as a hydroperoxide decomposer. Paragraph 83 also disclosed the presence of a phosphite type hydroperoxide decomposer in the composition of example 5. These passages of D2 therefore identified Sanko[®] HCA as an organophosphite in the broad sense used in operative claim 1.

- Paragraph 42 of the patent in suit provided that organophosphites of formula $(RO)_3P$ (wherein R was independently alkyl or aryl) could be used but it did not limit organophosphites according to operative claim 1 to compounds of that formula. In that regard, the question of whether Sanko[®] HCA was a compound of formula $(RO)_3P$ was not relevant. Operative claim 1 thus lacked novelty over the composition of example 5 of D2.

Inventive step over D2

Main request and auxiliary requests 1 and 2

- The composition of example 5 of D2 represented the closest prior art. The patent in suit did not contain a fair comparison with the closest prior art since none of the compositions in Tables 3, 4 and 5 contained Sanko[®] HCA in combination with a sterically hindered phenol antioxidant. The patent in suit therefore did not show that organophosphites resulted in any effect over the use of Sanko[®] HCA. The problem was thus the provision of alternative compositions. D2 already taught in paragraph 42 the use of Irgafos[®] TNPP, an organophosphite, as an alternative hydroperoxide

decomposer to Sanko[®] HCA used in example 5. The composition of example 5 taught the use of sterically hindered phenol antioxidant (Irganox[®] 1010, a compound unambiguously known from D5) and a hydroperoxide decomposer (Sanko[®] HCA). In that regard, the sentence in paragraph 42 relating to the use of "a di-substituted phenol antioxidant or a hydroxyperoxide decomposer" did not teach away from the use of both components in combination with one another. Claim 1 of the main request lacked therefore an inventive step.

- The same arguments applied to claim 1 of auxiliary requests 1 and 2 for which no further distinguishing features could be identified.

Auxiliary requests 3 and 4

- Claim 1 of auxiliary request 3 differed from the composition according to example 5 of D2 in the presence of an organophosphite antioxidant and in that the amount of antioxidants in the composition was in the range of 1.0 to 3.0 wt.-%. The patent in suit did not provide evidence of an effect linked to the range of antioxidants according to operative claim 1. The problem was thus the provision of alternative compositions. Since paragraph 42 of D2 already taught that the amount in di-substituted phenol antioxidant and hydroperoxide decomposer could vary in the range of 0.1-5 wt.-%, it was obvious that a composition comprising 1.0-3.0 wt.-% of antioxidant was an obvious alternative composition. Claim 1 of auxiliary request 3 lacked therefore an inventive step over D2.

- The same arguments applied to claim 1 of auxiliary request 4.

Auxiliary requests 5 and 6

- Claim 1 of auxiliary request 5 defined BHT as sterically hindered phenol antioxidant in the composition. The examples of the patent in suit did not establish the presence of an effect in particular since the comparative compositions cited by the patent proprietor were not based on Sanco HCA and therefore did not represent the composition of example 5 of D2. The problem was therefore the provision of an alternative composition to the one of example 5 of D2. D8 already taught the use of BHT as sterically hindered phenol antioxidant for the same purpose and also in combination with an organophosphite as in operative claim 1. Claim 1 of auxiliary request 5 lacked therefore an inventive step over D2.
- The same argumentation applied to claim 1 of auxiliary request 6.

Auxiliary requests 7-9

- The same arguments of inventive step given with regard to auxiliary requests 4-6 also applied to auxiliary requests 7-9.

Auxiliary request 10

Admittance

- Auxiliary request 10 was not filed in direct reaction to the statement setting out the grounds

of appeal of opponent 3 and should therefore not be admitted into the proceedings.

Inventive step

- The examples of the patent in suit did not establish that an effect was attributable to the choice of a specific range of amounts of antioxidant over the composition of example 5 of D2. The problem posed with regard to claim 1 of auxiliary request 10 was still the provision of alternative compositions and the range of operative claim 1 was already covered by the teaching of D2. Claim 1 of auxiliary request 10 lacked therefore an inventive step over D2.

XIV. Appellant 1 (patent proprietor) requested that the decision under appeal be set aside and that the patent be maintained as granted or in the form of auxiliary requests 1-3 submitted with the statement setting out the grounds of appeal, or alternatively in the form of one of auxiliary request 4-10 filed with the reply to the statement setting out the grounds of appeal of the opponents 2 and 3.

Appellant 1 requested also that, in case the Board decided that auxiliary requests 3-10 did not meet the requirements of Article 123(2) EPC based on the objections concerning the word "solids" contained in these claims, the decision under appeal be set aside and the patent be maintained in the form of auxiliary requests 11-14 filed with letter dated 12 November 2021.

Appellant 1 requested further that, in case the Board considered that the objections under Rule 80 EPC

prejudiced the maintenance of the patent, the decision under appeal be set aside and the patent be maintained in the form of auxiliary requests 1'-6' or 10' filed with letter dated 12 November 2021.

XV. Appellants 2 and 3 (opponents 2 and 3) requested that the decision under appeal be set aside and that the European patent No. 2 829 562 be revoked.

XVI. The respondent and party as of right (opponent 1) requested that the appeal of the patent proprietor be dismissed.

Reasons for the Decision

Main request (patent as granted)

1. Novelty over D2

1.1 Novelty of claim 1 of the main request was contested in view of the composition of example 5 of D2 (section 3.2.6 of the reply of opponent 1 to the statement setting out the grounds of appeal of the patent proprietor). It was already established by the opposition division that the composition of example 5 disclosed in Table 1 of D2 was a curable clear coat component for use as a curable component of a two-component clear coat coating composition which was not disputed by the parties.

1.2 The preparation of the composition of example 5 is disclosed in paragraph 78 in which it is said that the components of the two parts shown in Table 1 were charged into a mixing vessel and the components of Part 1 as well as the components of Part 2 were mixed together (whereas the two parts were mixed with each

other just before application). Part 1 comprises according to Table 1 commercially available products including Desmodur[®] 1420 (a polyaspartic acid ester), Irganox[®] 1010 and Sanko[®] HCA. Irganox[®] 1010 is known from the technical datasheet D5. It is apparent from the chemical formula given in D5 that Irganox[®] 1010 is a sterically hindered phenol antioxidant in the sense of component B1) of operative claim 1. In that regard, while paragraph 74 of D2 gives a different definition for Irganox[®] 1010, it is clear to the reader of D2 from paragraph 78 and Table 1 that Part 1 of example 5 contains Irganox[®] 1010 and its identity is unambiguous from the prior art D5.

- 1.3 The opposition division concluded that operative claim 1 was novel over the composition of example 5 of D2 because the phosphorous compound 9,10-dihydro-9-oxa-10-phosphenanthrene-10-oxide (paragraphs 42 and 76 of D2) that is present in the commercially available product Sanko[®] HCA used as hydroperoxide decomposer was not an organophosphite corresponding to component B2) in operative claim 1 since it did not contain phosphite groups.
- 1.4 The objection of lack of novelty in appeal revolved around the question of whether the hydroperoxide decomposer Sanko[®] HCA used in example 5 of D2 is an organophosphite.
- 1.5 The patent in suit does not formally limit organophosphites to compounds of formula $(RO)_3P$ (wherein R is independently alkyl or aryl) as it is clear from paragraph 42 that compounds of formula $(RO)_3P$ are only mentioned as a sub-class of organophosphites.

1.5.1 It has, however, not been shown that Sanko[®] HCA contains phosphite groups or that that compound is considered by common general knowledge as an organophosphite compound. In that regard, the Board finds the reference in paragraph 83 of D2 to the presence of a "phosphite type hydroperoxide decomposer" in the compositions of examples 2, 3 and 5 to be ambiguous, in particular since the chemical name of Sanko[®] HCA, 9,10-dihydro-9-oxa-10-phosphenanthrene-10-oxide, does not identify that compound as containing phosphite groups. D2 does also not make further mention of Sanko[®] HCA as a phosphite and in particular not in paragraph 42 which discloses the hydroperoxide decomposers used in the compositions of D2.

1.6 The Board therefore finds that it has not been established that Sanko[®] HCA is an organophosphite according to claim 1 of the main request. Claim 1 of the main request is therefore novel over D2.

2. Inventive step

2.1 D2 was chosen as the document representing the closest prior art in the contested decision. The parties also considered that D2 was the most relevant starting point in appeal.

2.2 D9 was also cited by opponent 3 as a document representing the closest prior art in their statement of grounds of appeal. D9 and D2 belong to the same patent family and the parties considered that the contents of D9 and D2 as far as relevant to the present case were equivalent so that the analysis in appeal was carried out mainly on the basis of D2.

- 2.3 D2 belongs to the field of curable clear coat compositions (paragraph 7) and is therefore a reasonable starting point for the assessment of inventive step of the main request. The Board therefore sees no reason to depart from D2 as the closest prior art.
- 2.4 Within Table 1 of D2, Part 1 of example 5 is a composition comprising two antioxidants and as such it is the most relevant starting point for the assessment of inventive step of the main request since claim 1 of that request also requires as critical feature that two antioxidants are present in the curable clear coat component. Indeed the object of the patent in suit explicitly relies on the presence of two antioxidants for long term storage stability (paragraph 57).
- 2.5 By contrast, the patent proprietor considered that the compositions of examples 2 and 3 represented a more relevant starting point than the one of example 5.
- 2.5.1 However, this position cannot be followed by the Board. The compositions of examples 2, 3 and 5 all address the same problem in D2 which is the provision of durable and weatherable coating compositions (paragraph 3 and paragraphs 82 and 83). The compositions of examples 2 and 3 are however structurally more remote to operative claim 1 than example 5 because the compositions of examples 2 and 3 only contain one antioxidant additive (Irganox® 1135 in example 2 or Sanko® HCA in example 3). The composition of example 5 which contains two antioxidants (Irganox® 1010 and Sanko® HCA in Table 1) is therefore a more appropriate starting point for the assessment of inventive step of operative claim 1 independently of its performance with respect to examples 2 and 3.

- 2.6 Claim 1 of the main request only differs from the composition of Part 1 of example 5 of D2 in that it comprises as second antioxidant at least one organophosphite.
- 2.7 With regard to the definition of the technical problem solved over the closest prior art D2, the constant case law of the Boards of Appeal is that beneficial effects or advantageous properties, if appropriately demonstrated by means of truly comparable results, can properly form a basis for the definition of the problem that the claimed invention sets out to solve and can, in principle, be regarded as an indication of inventive step. The only comparative tests suitable for this are, however, those which are concerned with the structurally closest state of the art to the invention, because it is only there that the factor of unexpectedness is to be sought (Case Law of the Boards of Appeal, 9th Edition, July 2019, I.D.4.2).
- 2.8 The patent proprietor alleged that the examples of the patent in suit showed an effect over the composition of example 5 of D2. In the examples of Tables 3, 4 and 5 the compositions comprising a polyaspartic acid ester (Desmophen® NH1420) and a combination of antioxidants were found to be particularly relevant. The yellowing resistance after long term storage (according to paragraph 62, 12 months at a temperature of 23°C and 20 weeks at 49°C) is reported (Hazen). The compositions are based on 3,5-di-tert-butyl-4-hydroxy toluene (BHT) as sterically hindered phenol antioxidant B1), triphenylphosphite (TPP) or trisnonylphenyl phosphite (TNPP) as organophosphite antioxidants B2) and Sanco HCA as a comparative antioxidant. It was undisputed that Sanco HCA in the patent in suit corresponded to

Sanko[®] HCA of D2.

2.9 Tables 3, 4 and 5 all show compositions comprising combinations of antioxidants (BHT as B1) and TPP or TNPP as B2) in Tables 3 and 4; TPP or TNPP as B2) and Sanco HCA in Table 5) but none of these compositions represents example 5 of D2, a composition comprising a sterically hindered phenol antioxidant B1) and differing from operative claim 1 only in the presence of an organophosphite antioxidant instead of Sanko[®] HCA. The comparison of the properties of the examples contained in Tables 3, 4 and 5 of the patent in suit is therefore not a fair comparison with the closest prior art. In that regard, even if the examples of Table 5 appear to show that the use of Sanco HCA alone or in combination with the organophosphites TNPP and TPP leads to a degradation of the storage stability of the curable clear coat compositions, it cannot be assumed on the basis of these examples only that Sanco HCA would lead to a degradation of the properties in the presence of a sterically hindered phenol antioxidant such as BHT used in the patent in suit or Irganox[®] 1010 present in the composition of example 5 of D2. Any effect shown in the patent in suit therefore cannot be causally linked to the only feature distinguishing operative claim 1 from example 5 of D2, namely the choice of an organophosphite antioxidant (B2) over Sanko[®] HCA.

2.10 It follows that the examples of the patent in suit do not show that the compositions according to operative claim 1 have improved properties over the known composition of example 5 of D2. The only problem that can be defined is thus the provision of further curable clear coat components for use as a curable component of

a two-component clear coat coating composition system.

- 2.11 Starting from the composition of example 5 of D2 which contains a sterically hindered phenol antioxidant (Irganox®1010) and a hydroperoxide decomposer (Sanko® HCA), the question of obviousness is then whether the skilled person would have considered a composition with an organophosphite antioxidant in place of Sanko® HCA used in Part 1 of example 5 as a further curable clear coat component for use as a curable component of a two-component clear coat coating composition system.
- 2.12 Paragraph 42 concerns the antioxidants present in the compositions of D2. That passage discloses that the compositions contain "about 0.1 to 5% by weight, based on the weight of the binder, of a di-substituted phenol antioxidant or a hydroperoxide decomposer". In that regard, the Board does not see the use of the conjunction "or" in that sentence as a reference to mutually exclusive alternatives since that would be in contradiction with the composition of example 5 described in paragraph 84 (which contains both a di-substituted phenol antioxidant (Irganox® 1010) and a hydroperoxide decomposer (Sanko® HCA)) being according to the invention in D2.
- 2.13 Sanko® HCA is listed as a hydroperoxide decomposer in paragraph 42 alongside Irgafos® TNPP which is an organophosphite antioxidant according to component B2) of the patent in suit (paragraph 66). It is apparent from paragraph 42 that TNPP and Sanko® HCA can interchangeably be used as hydroperoxide decomposers in the compositions of D2. It was not in dispute that the hydroperoxide decomposers as taught in D2 are also antioxidants. In that regard, a skilled reader of D2 would have considered a composition according to Part 1

of example 5 but containing TNPP instead of Sanko® HCA to be a further curable clear coat component for use as a curable component of a two-component clear coat coating composition system.

- 2.14 Claim 1 of the main request therefore lacks an inventive step in view of D2 alone.

Auxiliary request 1

3. Inventive step

- 3.1 Claim 1 of the main request concerns a curable clear coat component comprising, among others, a component A) which is "at least one polyaspartic acid ester or at least one hydroxyl functional binder or a combination of both". Claim 1 of auxiliary request 1 differs from claim 1 of the main request in that the hydroxyl functional binder in component A) is limited to one comprising "at least one hydroxyl-functional (meth)acrylic copolymer and at least one polyester oligomer".

- 3.2 With regard to inventive step of auxiliary request 1 the parties relied on their argumentations provided for the main request. The amendment performed in claim 1 of auxiliary request 1 indeed does not concern the polyaspartic acid ester in component A) which is the component present in the commercially available product Desmodur® 1420 present in Part 1 of the composition of example 5 of D2. The reasoning and conclusion of the Board on inventive step of the main request therefore equally apply to claim 1 of auxiliary request 1. Claim 1 of auxiliary request 1 therefore lacks an inventive step over D2.

Auxiliary request 2

4. Inventive step

4.1 Claim 1 of auxiliary request 2 differs from claim 1 of auxiliary request 1 in that the curable clear coat component is said to comprise "0.5 to 4.0% by weight solids of component B), relative to the total amount of the curable clear coat component".

4.2 It was acknowledged by all parties to the appeal proceedings that Part 1 of the composition of example 5 of D2 contains 0.77% by weight solids of Sanko® HCA and Irganox® 1010 as antioxidants relative to the total amount of the curable clear coat component so that no further distinguishing feature results from the amendment. Indeed, none of the parties in appeal had a different argumentation for claim 1 of auxiliary request 2. In that regard, the reasoning and conclusion of the Board on inventive step of the main request equally apply to claim 1 of auxiliary request 2. Claim 1 of auxiliary request 1 therefore lacks an inventive step over D2.

Auxiliary requests 3 and 4

5. Inventive step

5.1 Claim 1 of auxiliary request 3 differs from claim 1 of auxiliary request 2 in that the range defining the amount of component B) is limited to "1.0 to 3.0 % by weight solids". It was acknowledged by the parties in appeal that the amount of antioxidant components in Part 1 of the composition of example 5 of D2 was 0.77 % by weight solids (statements setting out the grounds of appeal of opponent 2 (page 3, first paragraph) and of

opponent 3 (page 10, second paragraph), rejoinder of the patent proprietor (page 15, first paragraph) and rejoinder of opponent 1 (page 13, second paragraph)).

- 5.2 Claim 1 of auxiliary request 3 differs therefore from Part 1 of the composition of example 5 of D2 in that the amount of component B) is 1.0 to 3.0 % by weight solids and in that the antioxidant B2) is an organophosphite antioxidant.
- 5.3 The patent proprietor referred to the examples of Table 5 for an effect allegedly resulting from the selection of an organophosphite antioxidant and of the selection of the amount in antioxidant component B). There is however in Table 5 of the patent in suit no composition that represents the composition of example 5 of D2. The compositions of Table 5, as discussed above for the main request, do not display a composition comprising Sanko® HCA alongside a sterically hindered phenol antioxidant as B1). Also, none of the examples in Table 5 concern a composition containing less than 1 % by weight solids of the antioxidant component B) such that there is no basis for an improved effect causally linked to the amount of antioxidant being in the range of operative claim 1 or to that amount in combination with the use of an organophosphite by comparison with an amount corresponding to that of example 5 of D2.
- 5.4 It follows that the examples of the patent in suit do not show that the compositions according to operative claim 1 have improved properties over the known composition of example 5 of D2. In that regard, the patent proprietor considered that the patent in suit showed that an effect had been achieved and that the onus was on the opponents to show that that effect had not been obtained. The Board observes that each of the

parties to the proceedings carries the burden of proof for the facts it alleges (Case Law of the Boards of Appeal, 9th Edition, July 2019, III.G.5.1 and III.G.5.2). In the present case, the onus of proof to demonstrate the presence of an effect was on the patent proprietor who alleged that effect for the compositions according to claim 1 of auxiliary request 3. In the absence of evidence of that effect from the patent proprietor, the unproven effect cannot be taken into account for the formulation of the problem solved over the closest prior art.

5.5 The only problem that can be defined is thus, as for the main request, the provision of further curable clear coat components for use as a curable component of a two-component clear coat coating composition system.

5.6 Paragraph 42 of D2 addresses the presence of antioxidants in the composition. It has been established in the discussion of the inventive step of the main request above that paragraph 42 teaches the use of organophosphites such as Irgafos® TNPP as hydroperoxide decomposer in the compositions of D2. The same paragraph teaches that the composition can contain about 0.1 to 5 wt.-%, based on the weight of the binder, of a di-substituted phenol antioxidant or a hydroperoxide decomposer. That teaching about the amount of these two antioxidants applies to all the compositions according to D2 and thus also to Part 1 of the composition of example 5. A skilled person with regard to paragraph 42 would therefore consider a composition as the one of example 5 with an amount of antioxidants between 0.1 to 5 wt.-% (and therefore also in the range of 1.0 to 3.0 wt.-% according to operative claim 1) to constitute a further curable clear coat component for use as a curable component of a two

component clear coat coating composition system. Since the organophosphite Irgafos® TNPP is disclosed in paragraph 42 as an hydroperoxide decomposer alternative to Sanko® HCA, it is obvious that the conclusion reached about the amount of 0.1 to 5 wt.-% of antioxidants would also apply when Irgafos® TNPP is used as hydroperoxide decomposer in the composition of example 5. Claim 1 of auxiliary request 3 lacks therefore an inventive step over D2.

- 5.7 Claim 1 of auxiliary request 4 differs from claim 1 of auxiliary request 3 only in that the definition of A) is limited to at least one polyaspartic acid ester. Since part 1 of the composition of example 5 of D2 is already based on a polyaspartic acid ester (Desmodur® 1420), the reasoning of inventive step concerning claim 1 of auxiliary request 3 directly applies to claim 1 of auxiliary request 4. Claim 1 of auxiliary request 4 thus also lacks an inventive step over D2.

Auxiliary request 5

6. Inventive step

- 6.1 Claim 1 of auxiliary request 5 differs from claim 1 of auxiliary request 4 in that the sterically hindered phenol antioxidant B1) is limited to butylated hydroxy toluene (BHT). That limitation in operative claim 1 constitutes a further difference over the composition of example 5 in D2 in which the antioxidant is identified in Table 1 as being Irganox® 1010, a commercially available product, which in view of the definition known in the art (D5), does not comprise butylated hydroxy toluene (BHT). With respect to the composition of example 5 of D2, claim 1 of auxiliary request 5 differs in that it contains BHT as sterically

hindered phenol antioxidant B1), an organophosphite antioxidant B2) instead of Sanko® HCA and in that the curable clear coat component comprises 1.0 to 3.0 % by weight solids of component B).

6.2 The patent proprietor pointed at the examples in Table 2 in support of the presence of a better storage stability resulting from the use of BHT. In that regard, the patent proprietor relied on the examples according to operative claim 1 containing BHT as sterically hindered phenol antioxidant B1) and TPP or TNPP as organophosphite antioxidants B2). There is however in that table no example representing the composition of example 5 of D2 since none of the examples contains Irganox® 1010 and Sanko® HCA, the two antioxidants present in example 5. The examples containing Irganox® 1135 as sterically hindered phenol antioxidant B1) and TPP or TNPP as organophosphite antioxidants B2) are not relevant since Irganox® 1135 used in the patent in suit and Irganox® 1010 used in D2 are different sterically hindered phenol antioxidants. As a result, it cannot be established from Table 2 that any effect measured is causally linked to the use of BHT or BHT with an organophosphite in combination with an amount of antioxidant B) in the range of 1.0-3.0 % by weight over the composition of example 5 of D2. It follows that the problem solved over D2 is the provision of further curable clear coat components for use as a curable component of a two-component clear coat coating composition system.

6.3 D2 teaches in paragraph 42 compositions containing 0.1-5% by weight based on the weight of the binder of a disubstituted phenol antioxidant or a hydroperoxide decomposer. The disubstituted phenol antioxidant is further defined by a list of compounds which is not

limitative. The skilled reader of that paragraph therefore understands that other disubstituted phenol antioxidants can be used. The skilled person further knows from the prior art D8 that phenol antioxidants including Sumilizer BHT (page 7, line 27 of D8), a disubstituted phenol antioxidant based BHT, can be used in clear coat compositions in combination with phosphite antioxidants, such as Sumilizer TPP-R (page 7, lines 38-42 of D8) as shown on page 16, lines 1-14 and in examples 1, 7 and 11 of D8. It is also clear from examples 1 and 11 in Table 3 of D8 that the combined amounts of the antioxidants BHT and TPP-R (2.91 % by weight calculated from example 1, 1.47 % by weight calculated from example 11) in D8, that are in the range of 0.1-5% by weight according to D2, are also according to operative claim 1 (1.0-3.0 % by weight). Since it was not shown that the distinguishing features are causally linked to an effect over example 5 of D2 and since the combination of features is encompassed by the teaching of D2 with obvious modifications according to the prior art D8, the Board concludes that operative claim 1 of auxiliary request 5 lacks an inventive step.

Auxiliary request 6

7. Inventive step

7.1 Claim 1 of auxiliary request 6 differs from claim 1 of auxiliary request 5 only in that the organophosphite antioxidant comprises at least one of trisnonylphenylphosphite, triphenylphosphite, triisodecylphosphite, diphenylisodecylphosphite, diphenylisooctylphosphite, trilaurylphosphite and tris(2,4-di-tert-butylphenyl)phosphite.

7.2 The patent proprietor argued that the definition of the organophosphite antioxidant in operative claim 1 made the argument of inventive step stronger but they did not point to any example that would show the presence of an effect for the claimed combination of components. In the absence of such an effect, the problem solved remains the provision of further curable clear coat components for use as a curable component of a two-component clear coat coating composition system. The use of trisnonylphenylphosphite or TNPP as antioxidant in curable clear coat components is taught in D2 (column 4, line 2) as already discussed for the main request (point 2.13). Starting from the composition of example 5 of D2, the skilled person would have expected that the use of TNPP as antioxidant as taught in column 4 to solve the problem posed. Operative claim 1 thus also lacks an inventive step over D2 for the same reasons as outlined for the previous requests.

Auxiliary requests 7-9

8. Inventive step

8.1 Auxiliary requests 7, 8 and 9 correspond to auxiliary requests 4, 5 and 6 in which in claim 1, the definition of the polyaspartic acid ester as component A) is limited to a compound of formula (I). It was acknowledged by the parties at the oral proceedings before the Board that that limitation in operative claim 1 did not constitute a further distinguishing feature over the composition of example 5 of D2 which contains the commercially available product Desmodur® 1420. The parties did not provide further arguments with regard to inventive step of operative claim 1 of auxiliary requests 7, 8 and 9 other than the arguments provided for claim 1 of auxiliary requests 4, 5 and 6.

The conclusion of lack of inventive step reached for claim 1 of auxiliary requests 4, 5 and 6 therefore also applies to claim 1 of auxiliary requests 7, 8 and 9.

Auxiliary request 10

9. Admittance

9.1 Auxiliary request 10 was filed by the patent proprietor with their reply to the statements setting out the grounds of appeal of opponents 2 and 3. Claim 1 of auxiliary request 10 corresponds to claim 1 of auxiliary request 9 in which the range defining the amount in component B) is limited to 1.5 to 2.5 % by weight solids. The modification performed concerns therefore the limitation of the definition of one of the distinguishing features found to be relevant to the question of inventive step and in particular to the presence or absence of an effect over the closest prior art, a question which was addressed for the first time at the oral proceedings before the opposition division with regard to the fourth auxiliary request which was found to comply with the requirements of the EPC.

9.2 Since the request was filed with the rejoinder of the patent proprietor, i.e. at the first opportunity to react to the appeals of the opponents, it is considered as a legitimate reaction to the decision and to these appeals. Therefore the Board finds it appropriate to exercise its discretion under Article 12(4) RPBA 2007 (which applies in view of Article 25(2) RPBA 2020) by admitting auxiliary request 10 into the appeal proceedings.

10. Inventive step

10.1 The parties still addressed the question of inventive step of claim 1 of auxiliary request 10 in view of the composition of example 5 of D2. It was not in dispute that the range of component B) defined as 1.5-2.5 % by weight solids constituted a difference over the composition of example 5 of D2 in which the amount of antioxidants (Irganox[®] 1010 and Sanko[®] HCA) represented 0.77 % by weight as calculated by the opponents and acknowledged by the patent proprietor (see point 5.1, above). In addition, operative claim 1 differed from example 5 of D2 in the use of BHT as sterically hindered antioxidant instead of Irganox[®] 1010 and in the use of at least one of trisnonylphenylphosphite, triphenylphosphite, triisodecylphosphite, diphenylisodecylphosphite, diphenylisooctylphosphite, trilaurylphosphite or tris(2,4- di-tert-butylphenyl)phosphite as organophosphite antioxidant instead of Sanko[®] HCA.

10.2 The patent proprietor relied for these features on their argumentation of inventive step regarding auxiliary requests 4, 5 and 6. With regard to the range of 1.5-2.5 % by weight solids of component B) more specifically, the patent proprietor did not rely on an effect linked to the specific limitation of the range but rather on the argument that none of the documents cited in appeal rendered the range defined in operative claim 1 obvious. It was established for claim 1 of auxiliary request 6 that the combination of BHT, organophosphite and a specific amount of antioxidant B) was not associated with an effect. In the absence of an effect resulting from the choice of an amount of component B) in the range 1.5-2.5 % by weight solids specifically, the problem in view of operative claim 1,

as for the previous requests, can only be defined as the provision of a further curable clear coat components for use as a curable component of a two-component clear coat coating composition system.

10.3 With regard to obviousness, the range of 1.5-2.5 % by weight solids of antioxidant component B) defined in operative claim 1 does not significantly differ from the range of 1.0-3.0 by weight solids in claim 1 of auxiliary request 6. D2 in particular already teaches a broader amount of antioxidants of 0.1-5 % by weight based on the weight of the binder, from which it can be concluded that the skilled person would have considered curable clear coat compositions comprising antioxidants in an amount of 1.5-2.5% by weight solids to constitute obvious alternative curable clear coat components for use as a curable component of a two-component clear coat coating composition system on the basis of D2 alone. The Board thus finds that also claim 1 of auxiliary request 10 does not involve an inventive step over D2.

11. Auxiliary requests 1'-6', 10' and auxiliary requests 11-14

11.1 Auxiliary requests 1'-6', 10' and 11-14 were submitted by the patent proprietor under the condition of a negative decision regarding objections under Rule 80 EPC and Article 123(2) EPC. As acknowledged by the patent proprietor during the oral proceedings, this condition is not met and therefore the requests do not need to be considered by the Board.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar:

The Chairman:



Decision electronically authenticated