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Datasheet for the decision of 27 October 2023

Case Number: T 0757/21 - 3.3.03

Application Number: 13181133.3

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Language of the proceedings: EN

Title of invention:
Stabilized polymer compositions and methods of making same

Patent Proprietor:
Baerlocher GmbH

Opponent:
Akdeniz Chemson Additives AG

Relevant legal provisions:
RPBA 2020 Art. 12(4), 13(2)
EPC Art. 56
EPC R. 80

Keyword:

Amendment to case - exercise of discretion
Inventive step - Main request and auxiliary requests 1-3 (no) - Auxiliary request 6 (yes)
Amendment occasioned by ground for opposition - Auxiliary requests 4 and 5 (no)
Amendment after expiry of period in R. 100(2) EPC communication - exceptional circumstances - Auxiliary requests 6 and 7 (yes)

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Case Number: T 0757/21 - 3.3.03

D E C I S I O N
of Technical Board of Appeal 3.3.03
of 27 October 2023

Appellant: (Opponent)	Akdeniz Chemson Additives AG Industriestraße 19 9601 Arnoldstein (AT)
Representative:	Viering, Jentschura & Partner mbB Patent- und Rechtsanwälte Hamborner Straße 53 40472 Düsseldorf (DE)
Respondent: (Patent Proprietor)	Baerlocher GmbH Freisinger Strasse 1 85716 Unterschleissheim (DE)
Representative:	Mathys & Squire Theatinerstraße 7 80333 München (DE)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 25 May 2021 concerning maintenance of the European Patent No. 2840112 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 European patent No. 2 840 112 on the basis of the claims of auxiliary request 3 filed with letter of 22 May 2020 and an adapted description.

II. Claims 1 and 8 of auxiliary request 3 read as follows:

"1. A stabilized polymer composition comprising:
500 parts per million (ppm) to 25,000 ppm of a stabilizer composition, comprising:
(a) 1 wt% to 60 wt% of an antacid, wherein the antacid comprises a metal oxide or a metal hydroxide;
(b) 10 wt% to 69 wt% of an organic acid-metal salt having a general formula M^1Y_m, wherein M^1 is selected from the group consisting of bismuth, calcium, zinc, magnesium, lithium, sodium, potassium, barium, strontium, aluminum, and combinations thereof; wherein Y is a conjugate base of an organic acid, having from six to twenty-four carbon atoms, selected from the group consisting of a linear or branched organic acid, a saturated or unsaturated organic acid, a substituted or unsubstituted organic acid, an aliphatic organic acid, an aromatic organic acid, an alicyclic organic acid, an oxygen-containing heterocyclic organic acid, dicarboxylic acid, polyprotic carboxylic acid, and combinations thereof; and wherein m is an integer from 1 to 3; and
(c) 30 wt% to 89 wt% of a primary antioxidant selected from a sterically hindered phenolic compound, a hindered amine compound, a hydroxylamine compound,

and combinations thereof, wherein the primary antioxidant comprises the sterically hindered phenolic compound selected from the group consisting of 2,6-di-tert-butyl-4-methyl phenol; pentaerythrityl-tetrakis(3-(3',5'-di-tert-butyl-4-hydroxyphenyl)-propionate; octadecyl3-(3',5'-di-tert-butyl-4-hydroxy-phenyl)propionate; 1,3,5-trimethyl-2,4,6-tris-(3,5-di-tert-butyl-4-hydroxyphenyl)benzene; 2,2'-thiodiethylene-bis-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate; calcium-(3,5-di-tert-butyl-4-hydroxy benzylmonoethylphosphonate); 1,3,5-tris(3',5'-di-tert-butyl-4'-hydroxybenzyl)-isocyanurate; bis-(3,3-bis-(4'-hydroxy-3'-tert-butylphenyl) butanoic acid)-glycolester; 4,4'-thiobis(2-tert-butyl-5-methylphenol); 2,2'-methylene-bis(6-(1-methylcyclohexyl) para-cresol); N,N'-hexamethylene bis(3,5-di-tertbutyl-4-hydroxy hydrocinnamamide; 2,5,7,8-tetramethyl-2(4',8',12'-trimethyltridecyl)chroman-6-ol; 2,2'-ethylidenebis(4,6-ditert-butylphenol); 1,1,3-tris(2-methyl-4-hydroxy-5-tert-butylphenyl)butane; 1,3,5-tris(4-tert-butyl-3-hydroxy-2,6-dimethylbenzyl)-1,3,5-triazine-2,4,-6-(1H,3H,5H)-trione; 3,9-bis(1, 1-dimethyl-2-(beta-(3-tert-butyl-4-hydroxy-5-methylphenyl)propionyloxy)ethyl)-2,4,8,10-tetraoxaspiro(5,5)undecane; 1,6-hexanediyl-bis(3,5-bis(1,1-dimethylethyl)-4-hydroxybenzene-propaonate); 2,6-di-tert-butyl-4-nonyl-phenol; 3,5-di-tert-butyl-4-hydroxyhydrocinnamic acid trimester with 1,3,5-tris(2-hydroxyethyl)-s-triazine-2,4,6(1H,3H,5H)-trione; 4,4'-butylidenebis(6-tert-butyl-3-methylphenol); 2,2'-methylene bis(4-methyl-6-tertbutylphenol); 2,2-bis(4-(2-(3,5-di-t-butyl-4-hydroxyhydrocinnamoyloxy))ethoxyphenyl))propane;

triethylene-glycolbis-(3-tert-butyl-4-hydroxy-5-methylphenyl)propionate; benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)-4-hydroxy, C_{13}-C_{15}-branched and linear alkyl esters; 6,6'-di-tert-butyl-2,2'-thiodi-p-cresol; diethyl((3,5-bis(1,1-dimethylethyl)-4-hydroxyphenyl)-methyl)phosphonate; 4,6-bis(octylthiomethyl)o-cresol; benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)4-hydroxy-, C_7-C_9-branched and linear alkyl esters; 1,1,3-tris[2-methyl-4-[3-(3,5-di-t-butyl-4-hydroxyphenyl)propionyloxyl-5-^{t}butylphenyl]butane; butylated reaction product of p-cresol and dicyclopentadiene; and combinations thereof;

wherein the wt% is based on the total weight of components (a)-(c); and a polymer,

wherein ppm is based on the total weight of the polymer, and

wherein said composition is substantially free of an organic phosphite and an organic phosphonite compound".

"8. A method of making a stabilized polymer composition, comprising

(1) preparing a premixture comprising

(a) 1 wt% to 60 wt% of an antacid, wherein the antacid comprises a metal oxide or a metal hydroxide; and at least one additional component selected from:

(b) 10 wt% to 69 wt% of an organic acid-meta I salt having a general formula M^1Y_m, wherein M^1 is selected from the group consisting of bismuth, calcium, zinc, magnesium, lithium, sodium, potassium, barium, strontium,aluminum, and combinations thereof; wherein Y is a conjugate base of an organic acid, having from six to twenty-four carbon atoms, selected from the group consisting of a linear or branched organic acid, a saturated or unsaturated organic acid, a substituted or

unsubstituted organic acid, an aliphatic organic acid, an aromatic organic acid, an alicyclic organic acid, an oxygen-containing heterocyclic organic acid, dicarboxylic acid, polyprotic carboxylic acids, and combinations thereof; and wherein m is an integer from 1 to 3; or

(c) 30 wt% to 89 wt% of a primary antioxidant selected from a sterically hindered phenolic compound, a hindered amine compound, a hydroxylamine compound, and combinations thereof to provide a stabilizer composition, wherein the primary antioxidant comprises the sterically hindered phenolic compound selected from the group consisting of 2,6-di-tert-butyl-4-methyl phenol; pentaerythrityl-tetrakis(3-(3',5'-di-tertbutyl-4-hydroxyphenyl)-propionate; octadecyl3-(3',5'-di-tert-butyl-4-hydroxy-phenyl)propionate; 1,3,5-trimethyl-2,4,6-tris-(3,5-di-tert-butyl-4-hydroxyphenyl)-benzene; 2,2'-thiodiethylene-bis-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate; calcium-(3,5-di-tert-butyl-4-hydroxybenzylmonoethylphosphonate); 1,3,5-tris(3',5'-di-tert-butyl-4'-hydroxybenzyl)-isocyanurate; bis-(3,3-bis-(4'-hydroxy-3'-tert-butylphenyl)butanoic acid)-glycolester; 4,4'-thiobis(2-tert-butyl-5-methylphenol); 2,2'-methylene-bis(6-(1-methylcyclohexyl)para-cresol); N,N'-hexamethylene bis(3,5-di-tertbutyl-4-hydroxy hydrocinnamamide; 2,5,7,8-tetramethyl-2(4',8',12'-trimethyltridecyl)chroman-6-ol; 2,2'-ethylidenebis(4,6-di-tertbutylphenol); 1,1,3-tris(2-methyl-4-hydroxy-5-tert-butylphenyl)butane; 1,3,5-tris(4-tert-butyl-3-hydroxy-2,6-dimethylbenzyl)-1,3,5-triazine-2,4,-6-(1H,3H,5H)-trione; 3,9-bis(1,1-dimethyl-2-(beta-(3-tert-butyl-4-hydroxy-5-methylphenyl)propionyloxy)ethyl)-2,4,8,10-

tetraoxaspiro(5,5)undecane; 1,6-hexanediyl-bis(3,5-bis(1,1-dimethylethyl)-4-hydroxybenzene-propaonate); 2,6-di-tert-butyl-4-nonyl-phenol; 3,5-ditert-butyl-4-hydroxyhydrocinnamic acid trimester with 1,3,5-tris(2-hydroxyethyl)-s-triazine-2,4,6(1H,3H,5H)-trione; 4,4'-butylidenebis(6-tertbutyl-3-methylphenol); 2,2'-methylene bis(4-methyl-6-tertbutylphenol); 2,2-bis(4-(2-(3,5-di-t-butyl-4-hydroxyhydrocinnamoyloxy))ethoxyphenyl))propane; triethylene-glycolbis-(3-tert-butyl-4-hydroxy-5-methylphenyl)propionate; benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)-4-hydroxy, C13-C15-branched and linear alkyl esters; 6,6'-di-tert-butyl-2,2'-thiodi-p-cresol; diethyl((3,5-bis(1,1-dimethylethyl)-4-hydroxyphenyl)-methyl)-phosphonate; 4,6-bis(octylthiomethyl)o-cresol; benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)4-hydroxy-, C7-C9-branched and linear alkyl esters; 1,1,3-tris[2-methyl-4-[3-(3,5-di-t-butyl-4-hydroxyphenyl)propionyloxy]-5-t-butylphenyl]butane; butylated reaction product of p-cresol and dicyclopentadiene; and combinations thereof, wherein wt% is based on the total weight of (a)-(c); and

(2) intimately mixing the premixture obtained from step (1);

(3) combining the mixed premixture with the at least one additional ingredient of (b) or (c) not already present to provide the stabilizer composition; and

(4) combining 500 parts per million (ppm) to 25,000 ppm of the stabilizer composition with a polymer,

wherein said composition is substantially free of an organic phosphite and an organic phosphonite compound".

III. The decision under appeal is *inter alia* based on the following documents:

D1: EP 0 889 085 A2
D6: EP 0 330 097 A2
D7: Comparative examples filed by the patent proprietor with letter of 22 May 2020
D8: Plastics Additives Handbook, Hans Zweifel, Ralph D. Maier, Michael Schiller, 6th edition, 2009, pages 40-57, 98-109, 112-115

IV. The decision under appeal as far as it is relevant to the present decision can be summarized as follows:
- The subject-matter of claim 9 of the main request was sufficiently disclosed.
- The subject-matter of claim 1 of the main request was novel over example 16 of D1. It lacked inventive step over that example taken as the closest prior art, but was inventive over D8 as the closest prior art.
- The subject-matter of claim 1 according to auxiliary requests 1 and 2 lacked an inventive step over D1 taken as the closest prior art.
- The subject-matter of claim 1 of auxiliary request 3 involved an inventive step over D1 or D8 as the closest prior art.

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

VI. The patent proprietor (respondent) submitted document D10 (Comparative Examples E3) and five sets of claims as auxiliary requests 1 to 5 with their reply to the statement of grounds of appeal. With a later letter dated 22 September 2023 they submitted two further sets

of claims as auxiliary requests 6 and 7.

VII. The parties were summoned to oral proceedings and a communication pursuant to Article 15(1) RPBA 2020 indicating specific issues to be discussed at the oral proceedings was sent to the parties.

VIII. Oral proceedings were held on 27 October 2023 in the presence of both parties.

IX. 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 or that the patent be maintained on the basis of any of auxiliary requests 1 to 5 filed with the rejoinder to the statement of grounds of appeal or on the basis of auxiliary requests 6 and 7 filed with letter dated 22 September 2023.

The main request in appeal corresponded to auxiliary request 3 on which the decision was based (point II, above).

Claims 1 and 8 of auxiliary request 1 corresponded to claims 1 and 8 of the main request in which the primary antioxidant was limited to a sterically hindered phenolic compound.

Claims 1 and 7 of auxiliary request 2 corresponded to claims 1 and 8 of auxiliary request 1 "wherein the metal oxide is selected from the group consisting of zinc oxide, calcium oxide, magnesium oxide, and

combinations thereof; and the metal hydroxide is selected from the group consisting of calcium hydroxide, magnesium hydroxide, and combinations thereof".

Claims 1 and 7 of auxiliary request 3 corresponded to claims 1 and 7 of auxiliary request 2 wherein the stabilizer composition (claim 1) or the premixture (claim 7) were defined as "consisting of" components (a) to (c).

Auxiliary request 4 is based on auxiliary request 2 from which claims 1 to 6 pertaining to the stabilized polymer composition were deleted. Claims 1-7 of auxiliary request 4 corresponded to renumbered claims 7-13 of auxiliary request 2 and claims 8-11 were newly added.

Auxiliary request 5 corresponded to auxiliary request 4 in which claim 1 was further limited in that "the premixture of (a) and (b) is prepared by a melt mix or fusion process" and "the premixture of (a) and (c) is prepared by a melt mix process".

Auxiliary requests 6 and 7 corresponded to auxiliary requests 4 and 5 in which claims 8 to 11 were deleted.

X. The arguments of the appellant and of the respondent relevant to the present decision can be found in the reasons for the decision. The disputed issues essentially concerned:

- the admittance of document D10 and of a new line of defence based on D10 in the analysis of inventive step over D1 as the closest prior art into the appeal proceedings;

- inventive step of the subject-matter of claim 1 of the main request and of auxiliary requests 1-3 starting from example 16 of D1 as the document representing the closest prior art;

- the fulfillment of the requirements of Rule 80 EPC for auxiliary requests 4 and 5;

- the admittance of auxiliary requests 6 and 7 into the appeal proceedings;

- inventive step of the subject-matter of claim 1 of auxiliary request 6 starting from example 16 of D1 as the closest prior art.

Reasons for the Decision

1. Admittance

1.1 Document D7, which contains comparative examples relating to the patent in suit, was mentioned in the reply to the statement of grounds of appeal. D7 had been filed first before the opposition division but its admittance into the proceedings was not decided upon by the opposition division (point 6, page 10 of the decision under appeal) because it was not deemed necessary for the decision. D7 was filed with the reply to the notice of opposition (see in particular page 17) and its admittance into the appeal proceedings was not objected to by the appellant. On that basis the Board does not see any reason against the admittance of D7, which is therefore admitted into the proceedings.

1.2 Document D10 was filed with the reply to the statement of grounds of appeal. The document contains comparative

examples submitted in the discussion of inventive step over D8 as the document representing the closest prior art (rejoinder, page 11, fourth paragraph of section 3). Since D8 and the argumentation based thereon were only submitted two months prior to the oral proceedings before the opposition division (letter of the opponent of 15 January 2021), the Board finds that the filing of D10 was a fair reaction to the filing of D8 at a late stage of the opposition procedure. The Board therefore finds it appropriate to exercise its discretion under Article 12(4) RPBA by admitting D10 into the proceedings.

1.3 The respondent additionally requested the admittance of a new line of defense based on the use of the data contained in D10 to show the presence of an effect in the discussion of inventive step of claim 1 of the main request starting from D1 as the closest prior art. It was not disputed that this new line of defense was provided for the first time at the oral proceedings before the Board.

1.4 The respondent submitted that the new line of defense should be admitted into the proceedings on the grounds that it was submitted in reaction to the preliminary opinion of the Board. In particular, the respondent justified the admittance of the new line of defense on the grounds that the absence of a phosphorus compound in the composition according to operative claim 1 had been neglected in the communication of the Board.

1.5 The absence of a phosphorus compound in the composition according to operative claim 1 put forward by the respondent, which the Board understands as referring to the absence of "an organic phosphite and an organic phosphonite compound" as defined in operative claim 1,

was, however, never argued by the respondent to be a distinguishing feature over D1 nor argued to provide any effect over the closest prior art D1 in their written submissions in appeal (reply to the statement of grounds of appeal, section IV and letter of 22 September 2023, section III.2.b). There was therefore no reason for the Board to address that element in view of the formulation of the problem solved over D1 in their communication.

1.6 The admittance of the new line of defense provided by the respondent at the oral proceedings before the Board is therefore not justified by the communication of Board. The Board does also not find any further exceptional circumstances that could justify its admittance in accordance with the provisions of Article 13(2) RPBA. The new line of defense is therefore not admitted into the proceedings.

Main request

2. Inventive step

2.1 The decision under appeal concluded that the subject-matter of auxiliary request 3 in opposition was inventive over D1 as the document representing the closest prior art. The appellant contested that conclusion.

2.2 The opposition division considered that example 16 was the relevant starting point within D1 and indicated (section 5.2.1 of the contested decision) that claim 1 of auxiliary request 3 (current main request) differed from that example in

(i) the specific relative amounts of components (a) to (c) in the stabilizer composition and

(ii) the additional presence of a hindered phenolic compound as defined in operative claim 1.

2.3 Both parties in appeal additionally regarded the amount of stabilizer composition (500 ppm to 25,000 ppm) in the stabilized polymer composition as a further distinguishing feature over example 16 of D1 (statement setting out the grounds of appeal, section 2.1.2 and rejoinder, page 6, second paragraph). Since example 16 of D1 does not disclose an overall amount of components (a) to (c) in the polymer according to the range in claim 1, the Board also finds that it constitutes a third distinguishing feature over D1.

2.4 The respondent formulated the problem solved as the provision of stabilized compositions with reduced long-term thermal ageing using low amounts of antioxidant compounds (reply to the statement of grounds of appeal, page 5, last paragraph).

2.5 The established case law about alleged technical advantages of the claimed subject matter over the closest prior art is unambiguous (Case Law of the Boards of Appeal, 10th Edition 2022, 4.3.1). Alleged advantages to which the patent proprietor merely refers, without offering sufficient evidence to support the comparison with the closest prior art, cannot be taken into consideration in determining the problem underlying the invention and therefore in assessing inventive step. That is especially the case when the alleged effect is neither self-evident nor predictable.

In such a case, the burden of proving the allegation that the claimed invention provides a technical effect is on the patent proprietor.

2.6 In the present case it is not apparent that any of the distinguishing features over example 16 of D1 provides the alleged effect. The patent in suit does not contain evidence of any effect over a composition that could be seen to represent example 16 of D1. Document D7 does also not contain a composition that could be seen as representing the closest prior art. It contains only a comparison that aims at showing that the premixture of components (a) and (b) improves the resistance to discoloration of stabilized compositions. D7 therefore does not show the presence of any effect resulting from the distinguishing features of claim 1 of the main request over example 16 of D1 as the closest prior art. Since the alleged effect was not supported by factual evidence, it cannot be taken into account when formulating the technical problem over the closest prior art. The Board finds therefore that the problem over D1 is the provision of further stabilized polymer compositions.

2.7 D1 concerns the stabilization of compositions against thermal, oxidative or light-induced degradation, the compositions comprising an organic material (a) and a mixture of stabilizer components (b) being among others hindered amines of formula (I), (II), (IIA) and (III) (claim 1 of D1). Claim 5 of D1 further discloses the additional presence of at least one coadditive stabilizer that can be among others a phenolic antioxidant, a metal stearate and a metal oxide.

2.8 Example 16 of D1 more specifically shows such a composition comprising 0.05-2 wt.-% of compounds of

formula (I), (II), (IIA) and (III) as well as 0.05-0.5 wt.-% of metal stearate and 0.05-0.5 wt.-% of a metal oxide. The composition of example 16 of D1 does not contain an antioxidant but it is disclosed in claim 5 of D1 as well as on page 8, lines 3-20 that the composition may optionally contain 0.005 to 5 wt.-% of further stabilizers, among which are antioxidants such as Irganox 1076 and Irganox 1010 (page 16, lines 7-14) that are also used in the patent in suit. The use of these antioxidants in amounts known from D1 in the composition of example 16 does therefore not involve an inventive step especially since their presence is compatible with the problem solved in D1.

2.9 It was also established by the opposition division (contested decision, section 3.4.1) by reference to the letter of 15 January 2021 of the appellant, that the amounts of metal stearate (0.05-0.5 wt.-%) and metal oxide (0.05-0.5 wt.-%) in the composition of example 16 of D1 largely overlapped with the ranges of amounts defined for (a) and (b) in operative claim 1. That is also true for a composition containing 0.005-5 wt.-% of Irganox 1076 or Irganox 1010. In particular, the ranges of amounts disclosed for metal stearate, metal oxide and the antioxidant in D1 were indicated to be common ranges of stabilizers in the preliminary opinion of the Board (point 8.5), which was not contested by the respondent.

2.10 The respondent, however, argued that D1 would not teach the presence of the specific combination of components (a) to (c) as defined in operative claim 1 in amounts according to that claim. The use of metal stearate, metal oxide and Irganox 1076 or Irganox 1010 antioxidant for the provision of stabilized compositions is, however, part of the general teaching

of D1. The amounts of these components as taught in D1 as well as the total amount largely overlap with the ranges of operative claim 1. The skilled person therefore does not need a further incentive to understand that compositions according to operative claim 1 would be suitable as stabilizer composition when simply looking for a further stabilized composition. The Board therefore finds that the use of metal stearate, metal oxide and antioxidants, considering the problem posed, is an arbitrary selection within the teaching of D1, a selection that does not involve an inventive step.

2.11 The respondent also considered that an inventive step for operative claim 1 derived from the fact that the person skilled in the art had to choose not to include an organic phosphite and an organic phosphonite compound in the composition, as defined in operative claim 1. The disclosure of example 16 of D1, however, does not mention the presence of an organic phosphite or an organic phosphonite compounds with the consequence that, even if D1 mentions in some other parts of the disclosure that such compounds could optionally be added, their absence in the composition starting from example 16 is irrelevant to the question of obviousness over D1.

2.12 The Board thus finds that the subject-matter of claim 1 of the main request does not involve an inventive step over D1.

Auxiliary requests 1-3

3. Inventive step

3.1 Claim 1 of auxiliary request 1 differs from claim 1 of the main request in that the hindered amine compounds and hydroxylamine compounds were deleted from the list of primary antioxidants. Since the composition and stabilizer composition in operative claim 1 are, however, defined by an open formulation ("comprising"), the deletion performed in the list of primary antioxidants does not change the discussion of inventive step over D1 since the presence of hindered amine compounds and hydroxylamine compounds in the composition is formally not excluded. The subject-matted of claim 1 of auxiliary request 1 therefore lacks an inventive step for the same reasons as outlined for claim 1 of the main request.

3.2 Claim 1 of auxiliary request 2 corresponds to claim 1 of auxiliary request 1 further limited by the list of antacid "wherein the metal oxide is selected from the group consisting of zinc oxide, calcium oxide, magnesium oxide, and combinations thereof; and the metal hydroxide is selected from the group consisting of calcium hydroxide, magnesium hydroxide, and combinations thereof". Since the composition of example 16 of D1 lists as metal oxide zinc oxide or magnesium oxide, the amendment made does not constitute a further distinguishing feature over D1 and the discussion of inventive step over D1 remains the same as for the main request. The subject-matter of claim 1 of auxiliary request 2 therefore lacks an inventive step over D1.

3.3 Claim 1 of auxiliary request 3 corresponds to claim 1 of auxiliary request 2 further limited in that the

stabilizer composition is not in an open formulation ("consisting of"). Since claim 1, however, concerns a stabilized polymer composition which has an open formulation ("polymer composition comprising"), the amendment performed in claim 1 still does not exclude the presence of hindered amine compounds and hydroxylamine compounds in the composition and does not change therefore the reasoning of inventive step over D1. The subject-matter of claim 1 of auxiliary request 3 thus lacks an inventive step over D1.

Auxiliary requests 4 and 5

4. Rule 80 EPC

4.1 Auxiliary request 4 is based on auxiliary request 2 from which claims 1 to 6 pertaining to the stabilized polymer composition were deleted and the claims relating to the method were renumbered. Auxiliary request 4, however, contains new dependent claims 8-11 relating to the definition of the polymer (claim 8), the presence of further components (claim 9), the definition of the antacid (claim 10) and the definition of the organic acid (claim 11) that are used in the method claimed.

4.2 The specific subject-matter of these dependent claims was, however, not part of the granted claims and the presence of this subject-matter in dependent claims 8 to 11 does not result directly from any other amendments of the claims of auxiliary request 4. In this respect it is relevant to note that the method claims of the granted patent did not refer to the composition claims so that the addition of these claims cannot be seen as occasioned by the objection of lack of inventive step of the composition claims and the

deletion thereof. The addition of dependent claims 8 to 11 of the auxiliary request 4 is therefore not occasioned by a ground of opposition. It follows that the amendment in auxiliary request 4 in the form of the addition of claims 8 to 11 contravenes the requirements of Rule 80 EPC.

4.3 The claims of auxiliary request 5 correspond to the claims of auxiliary request 4 further limited in that in claim 1 the following was added: " wherein the premixture of (a) and (b) is prepared by a melt mix or fusion process, wherein the premixture of (a) and (c) is prepared by a melt mix process". Auxiliary request 5 therefore contains the same dependent claims 8 to 11 which are part of auxiliary request 4 and were found to contravene the requirements of Rule 80 RPC. It follows that the amendment in auxiliary request 5 in the form of the addition of claims 8 to 11 contravenes the requirements of Rule 80 EPC.

4.4 Auxiliary requests 4 and 5 are therefore not allowable.

Auxiliary requests 6 and 7

5. Admittance

5.1 Auxiliary requests 6 and 7 were submitted with letter of 22 September 2023, after the communication of the Board dated 16 August 2023. The admittance of auxiliary requests 6 and 7 into the appeal proceedings underlies the provisions of Article 13(2) RPBA.

5.2 The respondent submitted with their accompanying letter (section IV.1 on pages 13 and 14) that auxiliary requests 6 and 7 were submitted in reaction to the objection under Rule 80 EPC that was raised by the

Board for the first time in their communication from 16 August 2023 against auxiliary requests 4 and 5. The new requests corresponded to the previous ones in which claims 8 to 11 were deleted.

5.3 The Board agrees that the objection under Rule 80 EPC was raised in that communication for the first time and that the deletion of claims 8 to 11 is a justified and adequate reaction to that objection which solves the issue without changing the legal and factual framework of the remaining case.

5.4 It follows that there are exceptional circumstances that justify the admittance of auxiliary requests 6 and 7 into the appeal proceedings under the provisions of Article 13(2) RPBA. Auxiliary requests 6 and 7 are thus admitted into the proceedings.

6. Inventive step of auxiliary request 6

6.1 Claim 1 of auxiliary request 6 pertains to a method of making a stabilized polymer composition, comprising
(1) preparing a premixture consisting of the components (a), and at least one of (b) or (c) (as they are defined in auxiliary request 2),
(2) intimately mixing the premixture obtained from step (1);
(3) combining the mixed premixture with the at least one additional ingredient of (b) or (c) not already present to provide the stabilizer composition; and
(4) combining 500 parts per million (ppm) to 25,000 ppm of the stabilizer composition with a polymer,
wherein said composition is substantially free of an organic phosphite and an organic phosphonite compound.

6.2 Example 16 of D1 was still considered by the parties to represent the closest prior art for the method of claim 1 of auxiliary request 6. The Board has no reason to take a different position.

6.3 It is apparent that claim 1 of auxiliary request 6 is defined by the fact that a premixture is made from components (a) and at least one of (b) or (c) before intimately mixing the premixture. The preparation of this premixture is not disclosed in D1. Instead, D1 discloses that dry blends of the polymer and the stabilizer components are processed. That distinguishing feature was not disputed by the appellant (statement of grounds of appeal, page 5, fourth and fifth paragraphs). Further to the premixture, claim 1 of auxiliary request 6 differs from example 16 of D1 in the distinguishing features identified for claim 1 of the main request.

6.4 The respondent argued that the stabilization by premixed stabilizers as now defined in claim 1 of auxiliary request 6 was considerably higher than the stabilization of dry blends as disclosed in D1.

6.5 Indeed, the results reported in Figures 1 and 2 of the patent in suit show for a comparison of premixes according to claim 1 of auxiliary request 6 (Entries 5-8, Table 1; Entries 4-7, Table 2) with dry blends representing the closest prior art D1 (Entry 2, Table 1; Entry 9, Table 2) that the premixed stabilizers result in improved thermal discoloration resistance of the stabilized compositions. D7 further essentially confirms that effect as it shows that a polyethylene composition comprising a premixture of zinc oxide (ZnO) as component (a) and zinc stearate (ZnSt) as component (b) later added to Irganox 1076 as component (c) and

LLDPE (polyethylene) shows better resistance to discoloration than an analogous composition in which the components (a) and (b) are not premixed.

6.6 The appellant argued for the first time at the oral proceedings that the evidence provided by the respondent only showed an effect for a premix of components (a) and (b) but that that effect had not shown to be equally valid for a premix of (a) and (c). Considering, however, that that argument regarding the validity of the effect when premixing (a) and (c) was only made at the oral proceedings before the Board and in the absence of counter evidence that could have supported the argument of the appellant, the Board finds that in the present situation, the benefit of the doubt must be given to the respondent.

6.7 Under these circumstances, the Board finds that the problem is the provision of a method to produce a composition with improved long term stability.

6.8 The closest prior art does not mention a method by which a premix of stabilizer components is performed in order to solve the problem posed.

6.9 The appellant cited the teaching of D8 (pages 1132 to 1134) and D6 (column 1, lines 1-13; Examples) with regard to the premixing of stabilizer components (statement of grounds of appeal, page 6, first two paragraphs).

6.9.1 The pages cited in D8 very generally disclose preblending additives for polymer compositions (in particular the fourth paragraph on page 1134) but there is no hint towards preblending or premixing of stabilizer components in order to produce a composition

with improved long term stability in that document. D8 therefore does not lead to the subject matter of claim 1 of auxiliary request 6 when aiming at solving the posed problem.

6.9.2 D6 is even more remote than D8 as the passages cited by the appellant only disclose the mixing of organic acids with an antacid to obtain the respective salts but it does not do so to produce stabilized polymer compositions. D6 does therefore not lead to claim 1 of auxiliary request 6 when aiming at solving the posed problem.

6.10 The Board therefore concludes that claim 1 of auxiliary request 6 involves an inventive step over D1 as the document representing the closest prior art.

6.11 The objections of lack of inventive step starting from D8 or alternatively D3 as the document representing the closest prior art that had been submitted in writing in appeal (statement of grounds of appeal, points 2.2 and 2.3) were not maintained at the oral proceedings before the Board against auxiliary request 6. As there were no further objections pending, there is no further point on which the Board needs to decide.

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 claims 1 to 7 of auxiliary request 6 filed with letter dated 22 September 2023 after any necessary consequential amendment of the description.

The Registrar: The Chairman:

D. Hampe D. Semino

Decision electronically authenticated