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**Datasheet for the decision
of 15 July 2010**

Case Number: T 0945/08 - 3.3.07

Application Number: 05760435.7

Publication Number: 1758679

IPC: B01J 31/02

Language of the proceedings: EN

Title of invention:

Methods for generating and recycling metal halide catalyst compositions for aromatic ring halogenation

Applicants:

SABIC Innovative Plastics IP B.V.

Headword:

-

Relevant legal provisions:

EPC Art. 123(2)

Relevant legal provisions (EPC 1973):

-

Keyword:

"Procedural violation (no)"

"Undisclosed restriction, intermediate generalization"

Decisions cited:

-

Catchword:

-



Case Number: T 0945/08 - 3.3.07

D E C I S I O N
of the Technical Board of Appeal 3.3.07
of 15 July 2010

Appellant: SABIC Innovative Plastics IP B.V.
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Decision under appeal: Decision of the Examining Division of the
European Patent Office posted 19 November 2007
refusing European patent application
No. 05760435.7 pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: S. Perryman
Members: F. Rousseau
B. ter Laan

Summary of Facts and Submissions

I. The appeal lies from the decision of the examining division refusing European patent application No. 05 760 435.7 originating from international application PCT/US2005/020788 having an international filing date of 13 June 2005 and published as WO-A-2006/009662. The application as filed contained 28 claims, claim 1 reading as follows:

"1. A method for recovering and reusing a ring-halogenation catalyst, said method comprising:

(A) contacting an aromatic compound with chlorine or bromine in the presence of a catalyst composition, said catalyst composition comprising at least one salt comprising a Group 4 - 13 metal, a lanthanide metal, or an actinide metal; and at least one organic counterion derived from an organic acid having a pKa relative to water of 0 or greater; and at least one organic sulfur compound; to form a first product mixture comprising a monochloro or a monobromo aromatic compound and a Group 4 - 13 metal halide, a lanthanide metal halide or an actinide metal halide;

(B) separating said metal halide from said first product mixture; and

(C) contacting at least a portion of said metal halide and an aromatic compound with chlorine or bromine, and at least one organic sulfur compound; to form a second product mixture comprising a monochloro or a monobromo aromatic compound and a Group 4 - 13 metal halide, a lanthanide metal halide or an actinide metal halide."

II. The examining division had issued a first communication in which the claims as originally filed had been objected to for lack of inventive step by reference to the International Preliminary Report on Patentability, which had been drawn up by the EPO acting as the International Search Authority for the international application corresponding to the present European application. In addition, the present application had been objected to in paragraph 3. under the heading "further deficiencies" as contravening the requirements of Rule 29(2) EPC 1973, because claims 1, 27 and 28 were drafted as independent claims of the same category without falling within one of the exceptional situations foreseen by that Rule. The examining division had indicated in paragraph 4.1 that failure to correct the deficiency under Rule 29(2) EPC 1973 could result in refusal of the application on this ground alone. The reasoning on inventive step contained in the International Preliminary Report on Patentability was in essence that due to the breadth of claim 1, the problem solved over the closest prior art represented by either document D1 or D2 was merely the provision of an alternative method of reusing a catalyst in aromatic ring halogenation, which gave comparable activity/selectivity. The claimed solution was considered to be obvious.

III. In response to the communication of the examining division, the Applicants had submitted, with a letter dated 19 September 2007, two amended claims 27 and 28 made dependent on claim 1, as well as arguments in support of inventive step.

- IV. In their decision posted on 19 November 2007, the examining division refused the application *inter alia* on the ground that claim 1 of the sole request, corresponding to claim 1 as filed, did not meet the requirements of Article 56 EPC.
- V. The decision was appealed on 18 January 2008 and the prescribed fee was paid the same day. The statement setting out the grounds for appeal was submitted on 26 March 2008 with a letter dated 25 March 2008 to which was annexed a set of 19 claims forming the basis for the Applicants' (hereafter Appellants) first auxiliary request. A second set of 17 claims was submitted as second auxiliary request with letter dated 21 November 2008.
- VI. In reply to a communication of the Board in preparation for oral proceedings, the Appellants submitted, with a facsimile letter dated 14 July 2010, comments on the issues raised by the Board and two additional sets of claims as their third and fourth auxiliary requests, each comprising 16 claims.
- VII. Oral proceedings were held on 15 July 2010 in the course of which the Appellants withdrew the first auxiliary request. The requests labelled "third auxiliary request" and "fourth auxiliary request" were respectively promoted to first and second auxiliary requests and the request labelled "second auxiliary request" became the third auxiliary request. The Appellants also submitted two further sets of claims of 13 claims each, as their fourth and fifth auxiliary requests.

VIII. Claim 1 of the first to fifth auxiliary requests read as follows (for ease of understanding the Board has indicated by comparison to the text as filed additions in bold and deletions in strikethrough):

First auxiliary request (labelled third auxiliary request as submitted with letter dated 14 July 2010)

"1. A method for recovering and reusing a ring-halogenation catalyst, said method comprising:

(A) contacting an **monocyclic or polycyclic** aromatic compound **having a C₁₋₄ alkyl substituent** with chlorine ~~or bromine~~ in the presence of a ~~catalyst composition,~~ ~~said catalyst composition comprising~~ at least one **cupric** salt comprising a ~~Group 4-13 metal,~~ a ~~lanthanide metal,~~ or an ~~actinide metal;~~ and at least one organic counterion derived from an organic acid ~~having a pKa relative to water of 0 or greater;~~ **selected from the group consisting of a monocarboxylic acid, a dicarboxylic acid, a 2,4-dione, and derivatives of the foregoing acids;** and at least one organic sulfur compound; to form a first product mixture comprising a monochloro ~~or a monobromo~~ aromatic compound and a **cupric chloride** ~~Group 4-13 metal halide,~~ a ~~lanthanide metal halide~~ or an ~~actinide metal halide;~~

(B) separating said **cupric chloride** ~~metal halide~~ from said first product mixture; and

(C) contacting at least a portion of said **cupric chloride** ~~metal halide~~ and an aromatic compound **having a C₁₋₄ alkyl substituent** with chlorine ~~or bromine~~, and at least one organic sulfur compound; to form a second

product mixture comprising a monochloro ~~or a monobromo~~ aromatic compound and a **cupric chloride** ~~Group 4-13 metal halide, a lanthanide metal halide or an actinide metal halide~~

wherein said at least one cupric salt of step (A) is present in an amount corresponding to about 0.005-10.0% by weight based on the aromatic compound and, wherein said at least one organic sulfur compound is present in an amount corresponding to about 0.005-10.0% by weight based on the aromatic compound."

Second auxiliary request (labelled fourth auxiliary request as submitted with letter dated 14 July 2010)

"1. A method for recovering and reusing a ring-halogenation catalyst, said method comprising:

(A) contacting an **monocyclic or polycyclic** aromatic compound **having a C₁₋₄ alkyl substituent** with chlorine ~~or bromine~~ in the presence of a ~~catalyst composition, said catalyst composition comprising~~ at least one **cupric** salt comprising a ~~Group 4-13 metal, a lanthanide metal, or an actinide metal;~~ and at least one organic counterion derived from an organic acid ~~having a pKa relative to water of 0 or greater;~~ **selected from the group consisting of a monocarboxylic acid, a 2,4-dionate;** and at least one organic sulfur compound; to form a first product mixture comprising a monochloro ~~or a monobromo~~ aromatic compound and a **cupric chloride** ~~Group 4-13 metal halide, a lanthanide metal halide or an actinide metal halide;~~

(B) separating said **cupric chloride** ~~metal halide~~ from said first product mixture; and

(C) contacting at least a portion of said **cupric chloride** ~~metal halide~~ and an aromatic compound **having a C₁₋₄ alkyl substituent** with chlorine ~~or bromine~~, and at least one organic sulfur compound; to form a second product mixture comprising a monochloro ~~or a monobromo~~ aromatic compound and a **cupric chloride** ~~Group 4-13 metal halide, a lanthanide metal halide or an actinide metal halide~~

wherein said at least one cupric salt of step (A) is present in an amount corresponding to about 0.005-10.0% by weight based on the aromatic compound and, wherein said at least one organic sulfur compound is present in an amount corresponding to about 0.005-10.0% by weight based on the aromatic compound."

Third auxiliary request (labelled second auxiliary request as submitted with letter dated 21 November 2008)

"1. A method for recovering and reusing a ring-halogenation catalyst, said method comprising:

(A) contacting ~~an~~ **toluene or ortho xylene** ~~aromatic compound~~ with chlorine ~~or bromine~~ in the presence of a catalyst composition, said catalyst composition comprising at least one **cupric** salt comprising a ~~Group 4-13 metal, a lanthanide metal, or an actinide metal;~~ ~~and~~ at least one organic counterion derived from an organic acid ~~having a pKa relative to water of 0 or greater;~~ **selected from the group consisting of a monocarboxylic acid, a dicarboxylic acid, a 2,4-dione,**

and derivatives of the foregoing acids; and at least one organic sulfur compound; to form a first product mixture comprising a **corresponding** monochloro **product** ~~or a monobromo aromatic compound~~ and a Group 4-13 metal **cupric** halide, ~~a lanthanide metal halide or an actinide metal halide;~~

(B) separating said ~~metal~~-**cupric** halide from said first product mixture; and

(C) contacting at least a portion of said ~~metal~~-**cupric** halide and an ~~aromatic compound~~ **toluene or ortho xylene** with chlorine ~~or bromine~~, and at least one organic sulfur compound; to form a second product mixture comprising a **corresponding** monochloro ~~or a monobromo aromatic compound~~ **product** and a Group 4-13 **cupric** metal halide, ~~a lanthanide metal halide or an actinide metal halide.~~"

Fourth auxiliary request (submitted at oral proceedings on 15 July 2010)

"1. A method for recovering and reusing a ring-halogenation catalyst, said method comprising:

(A) contacting ~~an~~ **toluene or ortho xylene** ~~aromatic compound~~ with chlorine ~~or bromine~~ in the presence of a catalyst composition, ~~said catalyst composition comprising~~ at least one **cupric** salt comprising a Group 4-13 metal, ~~a lanthanide metal, or an actinide metal;~~ ~~and~~ at least one organic counterion derived from a **carboxylic acid** ~~an organic acid having a pKa relative to water of 0 or greater;~~ and at least one organic sulfur compound; to form a first product mixture

comprising a **corresponding** monochloro ~~or a monobromo~~ aromatic compound and a **cupric chloride** ~~Group 4-13 metal halide, a lanthanide metal halide or an actinide metal halide;~~

(B) separating said **cupric chloride** ~~metal halide~~ from said first product mixture; and

(C) contacting at least a portion of said **cupric chloride** ~~metal halide~~ and **toluene or ortho xylene** ~~an aromatic compound~~ with chlorine ~~or bromine~~, and at least one organic sulfur compound; to form a second product mixture comprising a monochloro ~~or a monobromo~~ aromatic compound and a **cupric chloride**; ~~Group 4-13 metal halide, a lanthanide metal halide or an actinide metal halide~~

wherein said at least one cupric salt of step (A) is present in an amount corresponding to about 0.005-10.0% by weight based on the aromatic compound and, wherein said at least one organic sulfur compound is present in an amount corresponding to about 0.005-10.0% by weight based on the aromatic compound."

Fifth auxiliary request (submitted at oral proceedings on 15 July 2010)

"1. A method for recovering and reusing a ring-halogenation catalyst, said method comprising:

(A) contacting ~~an~~ **toluene or ortho xylene** ~~aromatic compound~~ with chlorine ~~or bromine~~ in the presence of a ~~catalyst composition, said catalyst composition comprising~~ at least one **cupric** salt comprising a ~~Group~~

~~4-13 metal, a lanthanide metal, or an actinide metal;~~
and at least one organic counterion derived from a
**carboxylic acid selected from the group consisting of a
monocarboxylic acid, a dicarboxylic acid, a 2,4-dione**
~~an organic acid having a pKa relative to water of 0 or
greater;~~ and at least one organic sulfur compound; to
form a first product mixture comprising a **corresponding**
~~monochloro or a monobromo aromatic compound and a~~
cupric chloride ~~Group 4-13 metal halide, a lanthanide
metal halide or an actinide metal halide;~~

(B) separating said **cupric chloride** ~~metal halide~~ from
said first product mixture; and

(C) contacting at least a portion of said **cupric
chloride** ~~metal halide~~ and **toluene or ortho xylene** ~~an
aromatic compound~~ with chlorine ~~or bromine~~, and at
least one organic sulfur compound; to form a second
product mixture comprising a monochloro ~~or a monobromo~~
aromatic compound and a **cupric chloride**; ~~Group 4-13
metal halide, a lanthanide metal halide or an actinide
metal halide~~

wherein said at least one cupric salt of step (A) is
present in an amount corresponding to about 0.005-10.0%
by weight based on the aromatic compound and, wherein
said at least one organic sulfur compound is present in
an amount corresponding to about 0.005-10.0% by weight
based on the aromatic compound."

IX. The arguments of the Appellants can be summarized as follows:

(a) The Applicants had been surprised by the refusal of the application, since a possible refusal of the application had been exclusively indicated under item 4.1 of the single communication issued by the examining division by the sentence "Failure to do so may result in refusal of the application on this ground alone (Art. 97(1) EPC)" and because this warning had to be interpreted in the light of the preceding sentence reading "Should the applicant insist on more than one independent claim being necessary per category, he is invited to show that such claims conform to the special circumstances set out in new Rule 29(2) EPC" which did not deal with the ground for refusal but only with issues under Rule 29(2) EPC. Thus, the examining division committed a substantial procedural violation in refusing the application without giving the Applicants a further opportunity to file observations and amendments.

(b) The basis for the limitations introduced into the claims was given as follows, reference being made to the international application as published:

(i) The restriction to "monocyclic or polycyclic aromatic compound having a C₁₋₄ alkyl substituent could be found in the last paragraph of page 3 and in claim 8.

- (ii) The limitation to cupric salt was disclosed throughout the description and in claims 11, 12, 14 and 17.

- (iii) The definition of cupric salts comprising the anions defined in claim 1 was provided in the last paragraph of page 4 and on page 5, lines 1-4. The limitation to the group consisting of a monocarboxylic acid, a dicarboxylic acid, a 2,4-dione, and derivatives of the foregoing acids was also disclosed in claim 10.

- (iv) In addition, the term "derivative" was further explained on page 5, lines 9-10 as including phosphates, phosphonates, alkoxide, phenoxide, and the like. It had therefore a clear meaning.

- (v) Moreover, the aromatic compound of step (C) could be, but was not necessarily the same as in step (A). The use of toluene was disclosed at the bottom of page 3.

- (vi) The claims as amended could also be seen as a generalization of example 4 which illustrated the reuse for the chlorination of ortho-xylene of the cupric chloride generated *in situ* from copper(II) benzoate. From the paragraph bridging pages 8 and 9 of the application as filed according to which the invention could be illustrated by taking copper(II) benzoate as a metal salt for chlorinating ortho-xylene, it was also clear

that the teaching of that specific example could be generalized.

X. The Appellants requested that the decision under appeal be set aside and as main request that the case be referred back to the examining division and that the appeal fee be reimbursed, or that a patent be granted on the basis of the claims submitted on 14 July 2010 headed third or fourth auxiliary requests, or the claims submitted as second auxiliary request on 21 November 2008, or the claims submitted as fourth or fifth auxiliary requests at the oral proceedings on 15 July 2010.

XI. At the end of the oral proceedings, the decision of the Board was announced.

Reasons for the Decision

1. The appeal is admissible.

Main request

2. The Appellants argued that the examining division's warning in their first communication that the application may be refused could only be understood in relation to the deficiency under Rule 29(2) EPC 1973. In other words, they had not expected the application to be refused on any another ground, in particular lack of inventive step. Point 4.1. of the first communication to which the Appellants referred is to be found under the heading "Further Procedure". It lists the deficiencies that should be remedied, following the

parts dealing with the various objections raised against the claims then on file. The objection under Rule 29(2) EPC 1973 is to be found in point 3. entitled "Further Deficiency", which follows point 2. in which the claims are objected to for lack of inventive step by reference to the International Preliminary Report on Patentability, which had be drawn up for the international application corresponding to the present European application. In the Board's opinion the sentence "Failure to do so may result in refusal of the application on this ground alone" in point 4.1 of the examining division's communication unambiguously means that any deficiency under Rule 29(2) EPC 1973 in a set of claims to be submitted, even if it were the sole deficiency remaining, might result in refusal of the application. It cannot be understood as meaning that the application would be refused only if the claims did not meet the requirements of Rule 29(2) EPC 1973. The heading "Further Deficiencies", which follows point 2.2 where the claims were by reference to the International Preliminary Report on Patentability objected to for lack of inventive step, clearly implies that any deficiency notified in the communication could result in a refusal of the application, in line with the sentence on Form 2001 "If the deficiencies indicated are not rectified the application may be refused pursuant to Article 97(1) EPC".

3. Moreover, the Appellants' argument does not concern the logical chain of reasoning underlying the objection of lack of inventive step which in essence is to be found in the International Preliminary Report on Patentability to which the first communication refers. According to the Case Law of the boards of appeal, a

procedural violation cannot merely result from the fact that only one single communication raising the objection on which the impugned decision is based was issued, as the examining division has the discretionary power whether or not to issue a further communication. In the present case the examining division was not able to acknowledge an inventive step over the whole breadth of claim 1 when the first communication was issued and a refusal followed as the Applicants neither attempted to restrict the claimed subject-matter nor submitted convincing arguments.

4. Accordingly, the examining division did not exercise its discretion in an unreasonable way by refusing the application after a single official communication, so that it did not commit a procedural violation, let alone a substantial one. Accordingly, the Appellants' main request that the decision under appeal be set aside, that the case be referred back to the examining division and that the appeal fee be reimbursed cannot be granted.

First auxiliary request (labelled third auxiliary request as submitted with letter dated 14 July 2010)

5. Claim 1 of the first auxiliary request has been amended compared to claim 1 as originally filed *inter alia* in the following features:
 - (a) the aromatic compound to be halogenated in step (A) has been restricted to monocyclic or polycyclic aromatic compound having a C₁₋₄ alkyl substituent,

(b) the salt used in step (A) as precursor for the metal halide salt has been restricted to a cupric salt comprising at least one organic counterion derived from an organic acid selected from the group consisting of a monocarboxylic acid, a dicarboxylic acid, a 2,4-dione, and derivatives of the foregoing acids,

(c) the halogen used has been restricted to chlorine leading to the production in step (A) of cupric chloride, which is then separated in step (B) and reused in step (C).

6. In order to determine whether these amendments comply with Article 123(2) EPC, it has to be examined whether or not technical information has been introduced which a skilled person would not have directly and unambiguously derived from the application as filed. It is not sufficient to demonstrate that the text as originally filed provides a basis for each of the features introduced into original claim 1 when they are considered in isolation, as has been done by the Appellants, but it is rather necessary to demonstrate that those features are disclosed in the application as filed in the context of present claim 1, *i.e.* in their present combination with the features of original claim 1.

7. According to claim 1 as originally filed, the salt used in step (A) comprises a Group 4 - 13 metal, a lanthanide metal, or an actinide metal; and at least one organic counterion derived from an organic acid having a pKa relative to water of 0 or greater. The use of an organic counterion derived from an organic acid

selected from the group consisting of a monocarboxylic acid, a dicarboxylic acid, a 2,4-dione, and derivatives of the foregoing acids is as such only disclosed in claim 10 or on page 5, lines 2-4 of the application as originally filed. The use of those specific organic acids is however not disclosed in the context of copper salts, but in the more general context of the salts defined in claim 1 or at the beginning of the paragraph bridging pages 4 and 5 which can comprise a Group 4 - 13 metal, a lanthanide metal, or an actinide metal. In the absence of any indication pointing to the use of copper in combination with an organic counterion derived from an organic acid selected from the group consisting of a monocarboxylic acid, a dicarboxylic acid, a 2,4-dione, and derivatives of the foregoing acids, said combination amounts to new information that cannot be considered as directly and unambiguously disclosed in the original application, let alone in combination with an aromatic compound to be halogenated that is selected from monocyclic or polycyclic aromatic compound having a C₁₋₄ alkyl substituent. Aromatic compounds having a C₁₋₄ alkyl substituent are only mentioned in the last paragraph of page 3 of the original disclosure, which passage however neither refers to copper salts, nor to salts comprising an organic acid selected from the group consisting of a monocarboxylic acid, a dicarboxylic acid, a 2,4-dione, and derivatives of the foregoing acids.

8. The Appellants took the view that the subject-matter of claim 1 could be seen as a generalization of the embodiments disclosed in example 4 which illustrated the reuse of the cupric chloride generated *in situ*.

They also argued that it was clear from the paragraph bridging pages 8 and 9 that the teaching of those embodiments could be generalized.

The only processes exemplified that relate to the recyclability of cupric chloride generated in-situ in the first chlorination run are disclosed in the two sections headed "Example 4", on pages 14 and 15 of the application as filed. From these processes, the skilled reader derives nothing more than the bare disclosure of a combination of specific features, namely the use in step (A) of a copper salt which is either copper (II) benzoate or copper (II) bis(trifluoroacetylacetonate), in the context of the chlorination of ortho-xylene using phenothiazine-N-chlorocarbonyl chloride as organic sulfur co-catalyst, whereby the cupric chloride built *in situ* is re-used for the chlorination of ortho-xylene. The cited examples do not disclose processes in which those specific counterions are replaced by a counterion derived from an organic acid selected from the group consisting of a monocarboxylic acid, a dicarboxylic acid, a 2,4-dione, and derivatives of the foregoing acids, using any organic sulfur co-catalyst instead of the phenothiazine-N-chlorocarbonyl chloride, the aromatic compound to be chlorinated being any aromatic compound having a C₁₋₄ alkyl substituent, said aromatic compound not being necessarily identical in the first and the subsequent chlorination runs. As pointed out by the Appellants, it is apparent from the application as filed that a more general teaching falling within the scope of present claim 1 was also contemplated. The question to be answered is however whether the limits now proposed for that generalization by the

presently claimed process, are directly and unambiguously derivable from the application as filed. Even if each feature (cupric salt, type of anion for the copper salt, type of organic sulfur co-catalyst compound and aromatic compound to be chlorinated), taken alone has a basis in the application as filed and can be considered to encompass the specific features used in the exemplified processes, the combination of features proposed by the Appellants as defined above has no basis in the application as filed.

9. Thus, whether the subject-matter of claim 1 is seen as a restriction of original claim 1 or a generalization of the exemplified processes, it contains technical information that a skilled person would not have directly and unambiguously derived from the application as filed, contrary to the requirements of Article 123(2) EPC. The underlying idea of Article 123(2) EPC is that an applicant shall not be allowed to improve his position by adding subject-matter not disclosed in the application as filed, which would give him an unwarranted advantage and could be damaging to the legal security of third parties relying on the content of the original application (G 1/93 OJ EPO, 1994, 541, point 9 of the reasons for the decision). It would be unfair to third parties to allow an undisclosed intermediate restriction or generalization, as it would give an applicant who files a broad speculative claim an unwarranted advantage over other applicants who would be the first to attribute any significance to a specific combination of features encompassed by said broad claim. The underlying principle is that any invention for which protection is sought, *i.e.* in the specific form claimed, must have been made at the date

of filing of the application and properly disclosed therein. In the present case, the application as originally filed does not contain any fall-back position in the form of the process presently claimed. The application as filed in particular does not contain any dependent claims or passages of the description directed to the use of the group of copper salts specifically defined in present claim 1.

10. Therefore, the first auxiliary request cannot be allowed.

Second auxiliary request (labelled fourth auxiliary request as submitted with letter dated 14 July 2010)

11. In claim 1 of the second auxiliary request, the cupric salt is defined to comprise at least one organic counterion derived from an organic acid selected from the group consisting of a monocarboxylic acid and a 2,4-dionate. Cupric salts comprising a counterion derived from an organic acid selected from the group consisting of a monocarboxylic acid and a 2,4-dionate are only disclosed in the context of original claim 15, which depends on claim 14 requiring that the copper salt is a mixed salt also comprising an anion selected from Cl, Br, I, or $(\text{SO}_4)_{1/2}$. Moreover, the chlorination of aromatic compounds having a C_{1-4} alkyl substituent mentioned in the last paragraph of page 3 of the original disclosure is disclosed neither in relation to copper salts, nor to salts comprising a counterion derived from an organic acid selected from the group consisting of a monocarboxylic acid and a 2,4-dionate. Thus, the reasoning regarding the first auxiliary request also applies to the second auxiliary request,

so that the subject-matter of present claim 1 is also considered to contravene the requirements of Article 123(2) EPC.

Third auxiliary request (labelled second auxiliary request as submitted on 21 November 2008)

12. The definition of the cupric salt is identical to that of the first auxiliary request, the definition of the aromatic compound being limited in steps (A) and (C) to toluene or ortho-xylene. The same considerations as for the first auxiliary request apply, leading to the conclusion that the use of cupric salts as defined in the third auxiliary request cannot be considered as directly and unambiguously disclosed in the application as originally filed, let alone in combination with an aromatic compound selected from toluene and ortho-xylene (Article 123(2) EPC). Hence, the third request is also not allowable.

Fourth auxiliary request (submitted at oral proceedings on 15 July 2010)

13. In claim 1 of the fourth auxiliary request, the cupric salt is defined as comprising at least one organic counterion derived from a carboxylic acid. The anions derived from a carboxylic acid have been selected among the several possibilities for the counterions disclosed in the paragraph bridging pages 4 and 5 of the application as filed, including anions derived from acidic organic compounds (page 4, lines 27-28), in particular anions derived from carboxylic acid (page 5, lines 2-3), phosphate, phosphonate, alkoxide or phenoxide (see page 5, lines 9-10). The use of anions

derived from a carboxylic acid is only disclosed on page 5, lines 2-3 of the application as filed. It is, however, not disclosed in relation to cupric salts, but in the more general context of the salts defined in original claim 1, nor is it disclosed in a process directed to the chlorination of an aromatic compound selected from toluene and ortho-xylene. Thus, claim 1 of the fourth auxiliary request, too, does not meet the requirements of Article 123(2) EPC.

Fifth auxiliary request (submitted at oral proceedings on 15 July 2010)

14. In claim 1 of the fifth auxiliary request, the definition of the cupric salt used for the chlorination step (A) is, apart from the deletion of the possibility that the counterion includes "derivatives of the foregoing acids", identical to that given in the first and the third auxiliary requests. It therefore follows that the reasoning for the first and the third auxiliary requests dealing with the question of whether or not the definition of the salt used in step (A) had any basis in the application as filed equally applies to the fifth auxiliary request. The fifth auxiliary request is therefore not allowable under Article 123(2) EPC either.

15. In conclusion, none of the auxiliary requests complies with the requirements of Article 123(2) EPC.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar

The Chairman

S. Fabiani

S. Perryman