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**Datasheet for the decision  
of 14 April 2015**

**Case Number:** T 2618/11 - 3.3.03

**Application Number:** 99946162.7

**Publication Number:** 1124866

**IPC:** C08F14/06, C08F4/34

**Language of the proceedings:** EN

**Title of invention:**

CONTINUOUS DOSING OF VERY FAST INITIATORS DURING  
POLYMERIZATION REACTIONS

**Patent Proprietor:**

Akzo Nobel N.V.

**Opponents:**

ARKEMA FRANCE  
SOLVAY (SOCIETE ANONYME)

**Headword:**

**Relevant legal provisions:**

EPC Art. 123(2)  
RPBA Art. 13(3)

**Keyword:**

Amendments - added subject-matter  
(yes) (Main request, 3rd-6th auxiliary requests)  
Late-filed auxiliary requests - admitted  
(no) (1st, 2nd, 7th auxiliary requests)

**Decisions cited:**

G 0001/03, G 0002/10

**Catchword:**



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Case Number: T 2618/11 - 3.3.03

**D E C I S I O N  
of Technical Board of Appeal 3.3.03  
of 14 April 2015**

**Appellant:**  
(Patent Proprietor)

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**Decision under appeal:**

**Decision of the Opposition Division of the  
European Patent Office posted on 31 October 2011  
revoking European patent No. 1124866 pursuant to  
Article 101(3) (b) EPC.**

**Composition of the Board:**

**Chairman**            B. ter Laan  
**Members:**            M. C. Gordon  
                             R. Cramer

## Summary of Facts and Submissions

- I. The appeal lies from the decision of the opposition division revoking European patent number EP-B1-1 124 866 (granted on European patent application number 99946162.7, derived from international application number PCT/EP99/06728, published under the number WO 00/17245).
- II. The patent was granted with a set of 7 claims, claim 1 reading as follows:
- "Process to polymerize vinyl chloride monomer and optional further monomers using one or more organic peroxides, with at least part of the peroxide being dosed in the polymerization mixture at the reaction temperature, **characterized in that** essentially all of the organic peroxide used in the polymerization process has a half-life of from 0.05 hour to 1.0 hour at the polymerization temperature, the vinylchloride based (co)polymer having less than 50 parts by weight of residual peroxide based on one million parts by weight of the (co)polymer, when measured immediately after polymerization and drying of the (co)polymer for 1 hour at 60°C".
- III. Two notices of opposition against the patent were filed in which revocation of the patent on the grounds of Art. 100(a) EPC (lack of novelty, lack of inventive step), Art 100(b) EPC (both opponents) and Art. 100(c) (opponent 2) EPC was requested.
- IV. The decision of the opposition division was based on a main request and four auxiliary requests all filed at the oral proceedings before the opposition division. According to the decision, none of the requests

satisfied the requirements of Art. 83 EPC. Consequently the patent was revoked. The details of the objections are not relevant to the present decision.

- V. The patent proprietor lodged an appeal against the decision and together with the statement of grounds of appeal submitted sets of claims forming a main request and four auxiliary requests.

Claim 1 of the main request differed from claim 1 of the patent as granted in that:

- it was limited to a suspension process and
- the half-life of the peroxide was specified as 0.05 to 0.5 hours at the polymerization temperature.

Claim 1 of the first auxiliary request corresponded to the main request, but introduced the following wording after the phrase "organic peroxides":

"not including acetyl-cyclohexyl-sulfonyl-peroxide (ACSP),".

Claim 1 of the second auxiliary request corresponded to the main request but introduced the following wording after the phrase "organic peroxides":

"not including acetyl-cyclohexyl-sulfonyl-peroxide (ACSP) and peroxydicarbonates,".

Claim 1 of the third auxiliary request corresponded to claim 1 of the main request with the addition of the following wording at the end:

", and wherein the one or more organic peroxides are selected from the group consisting of 1,1,3,3-tetramethylbutylperoxy methoxy acetate, diisobutanoylperoxide, bis(tert-butylperoxy)oxalate, 2-(2,2-dimethylpropanoylperoxy)-2-(2-ethylhexanoylperoxy)-4-methyl pentane, 2,4,4-

trimethylpentyl-2-peroxyneodecanoate, and tert-butyl peroxyneodecanoate."

Claim 1 of the fourth auxiliary request corresponded to claim 1 of the main request with the following wording introduced at the end:

", and wherein the one or more organic peroxides are selected from diisobutanoyl peroxide".

- VI. Rejoinders to the appeal were filed by both opponents, now respondents.
- VII. On 14 October 2014 the Board issued a summons to attend oral proceedings and in a communication of 2 March 2015 set out its preliminary view of the case. In particular, objections pursuant to Art. 123(2) EPC were raised in respect of all requests.
- VIII. The appellant in a written submission dated 10 March 2015, filed a main and seven auxiliary requests, of which auxiliary requests 1, 2 and 7 were new, the previously filed auxiliary requests being redesignated 3, 4, 5 and 6.

Claim 1 of the first auxiliary request differed from the main request in that the half life range of the peroxide was specified as 0.08 to 0.5 hours.

Claim 1 of the second auxiliary request specified the half life range as from 0.08 to 0.35 hours.

Claim 1 of the seventh auxiliary request differed from the main request in that:

- the range of half life of the peroxide was specified as 0.08 to 0.5 hours and
- the following wording was added at the end of the

claim:

", and wherein diisobutanoyl peroxide is used in the process and the polymerization reaction is performed at 45-60°C".

- IX. Oral proceedings were held before the Board on 14 April 2015.
- X. The arguments of the appellant/patent proprietor can be summarised as follows:
- a) Main request  
The feature "suspension process" in combination with the specified amount of residual peroxide was explicitly disclosed in the application as filed. The specified upper and lower limits of the half-life were disclosed in the application as originally filed and were applicable to the invention as a whole. Thus at most a single selection i.e. the range of the half-life had been made compared to the original disclosure.
  - b) First and second auxiliary requests  
The respective half-lives were restricted to ranges explicitly disclosed in the application as filed.
  - c) Third and fourth auxiliary requests  
The compounds excluded by disclaimer were discussed in the application as not being suitable, which statement had resulted in an objection pursuant to Art. 83 EPC during the opposition procedure. Said statement provided a basis for the exclusion of said compounds by "disclosed disclaimer".



- d) Fifth and sixth auxiliary requests  
The specified peroxides were disclosed in the description and examples of the original application.
- e) Seventh auxiliary request  
The wording was based on disclosures in the description.

XI. The arguments of the respondents can be summarised as follows

- a) Main request  
The subject-matter of the main request resulted from three selections from the disclosure of the original application:
  - suspension process,
  - the range of half-life which itself involved a selection from various disclosed ranges and
  - the residual peroxide amount.
- b) First and second auxiliary requests  
The first and second auxiliary requests had been filed late and addressed only one aspect of one of the objections raised in respect of the main requests. Those requests were not admissible.
- c) Third and fourth auxiliary requests  
The discussion of the excluded compounds in the application or patent was in respect of the prior art, not however of the claimed invention. Hence the case law on "disclosed disclaimers" did not apply. The excluded compounds did not relate to a novelty destroying disclosure so the case law on "non-disclosed" disclaimers was not applicable.

d) Fifth and sixth auxiliary requests

The fifth and sixth auxiliary requests represented a further selection from the original disclosure for which no basis was present.

e) Seventh auxiliary request

The seventh auxiliary request added a further selection. The same considerations on admissibility thus applied as for the first and second auxiliary requests.

XII. The appellant requested that the decision under appeal be set aside and that the case be remitted to the department of first instance for consideration of novelty and inventive step on the basis of the main request or alternatively any of auxiliary requests 1 to 7, all requests as filed with the letter of 10 March 2015.

XIII. The respondents (opponents) requested that the appeal be dismissed.

### **Reasons for the Decision**

1. The appeal is admissible.

2. Main request - Article 123(2)

2.1 Claim 1 contains, compared with claim 1 as granted, the feature "suspension process" as well as a restriction of the half-life of the peroxide.

- 2.1.1 A suspension process is disclosed at page 6, line 5 of the application as originally filed as one of two alternative modes for carrying out the process (the other one being a mass process). Restriction to this embodiment hence represents a selection compared to the original disclosure.
- 2.1.2 The restriction from a half-life of 0,05 hour to 1,0 hour to a half-life of 0.05 to 0.5 hour for the peroxide represents a further selection from the application as filed. Page 4, lines 1 to 4, discloses the half-life of the peroxide as being from 0.05 to 1.0 hour, which range was present in claim 1 as granted. Preferred ranges are indicated as being 0.05 to 0.8, 0.08 to 0.5 and 0.08 to 0.35 hour. Therefore, the range of 0.05 to 0.5 hour now being claimed is not disclosed as such in the application as filed but has been constructed from end points of separately disclosed, defined ranges. The present upper limit of the half-life of the peroxide (0.5 hours) represents a further selection compared to the disclosure of the application as originally filed.
- 2.2 Claim 1 also requires that the vinylchloride based (co)polymer should have less than 50 parts by weight of residual peroxide based on one million parts by weight of the (co)polymer, when measured immediately after polymerization and drying of the (co)polymer for 1 hour at 60°C. That requirement was present in claim 1 as granted; it had been introduced during the examination proceedings. However, it provides a further selection that, in combination with the amendments to claim 1 as granted, needs to be dealt with under Art. 123(2) EPC.
- 2.2.1 In respect of the specified amount of residual peroxide, the appellant referred to page 6, lines

15-24, in which polymers obtained by suspension polymerization are described to contain preferably less than 50 ppm of residual peroxide, more preferably less than 40 ppm, and most preferably less than 25 ppm of peroxide, immediately after drying for 1 hour at 60°C and screening. This part of the description does refer to suspension polymerisation, and does explicitly disclose the amount of residual peroxide defined in the claim. However the amount of residual peroxide specified in the claim represents a selection from one of the three disclosed ranges. Furthermore the invoked passage discloses that the residual peroxide amount is determined after drying at 60°C and "screening", which feature is not present in claim 1.

- 2.2.2 For this reason the disclosure on page 6, lines 15 to 24, cannot provide a basis for the combination of the feature "suspension" polymerisation together with the specified residual peroxide amount. Thus, contrary to the position of the appellant, the combination of the features "suspension" polymerisation and "having less than 50 parts by weight of residual peroxide based on one million parts by weight of the (co)polymer [...]" as specified in claim 1 is not directly and unambiguously disclosed in the application as filed.
- 2.2.3 Hence each of the features - suspension polymerisation and the amount of residual peroxide represents an independent selection compared to the generality of the original disclosure.
- 2.3 The presence in the claim of subject-matter arising from a plurality of selections from the application as originally filed creates a constellation of subject-matter that is not directly disclosed - either explicitly or implicitly - in the application as filed.

Consequently the requirements of Art. 123(2) EPC are not met so that the main request is refused.

3. First and second auxiliary requests

3.1 The first and second auxiliary requests were filed after issue of the summons to the oral proceedings. Consequently their admissibility to the proceedings is a matter for the discretion of the Board (RPBA Art. 13(3)). A criterion for admissibility is that the late filed requests should be *prima facie* clearly allowable (cf. "Case Law of the Boards of Appeal", 7th Edition Section IV.E.4.4.2).

3.2 The respective claims 1 of the first and second auxiliary requests differ from the main request in that the specified ranges of half-life are disclosed as such in the application as filed (page 4, lines 3 and 4). However the other objections raised in respect of the main request, i.e. a plurality of selections of features from the description, are not addressed by changing the half-life ranges. Nor do the amendments interact with the other features of the claim so as to change the nature of the selections made, compared to the application as originally filed.

3.3 Consequently the remaining objections raised in respect of the main request apply *mutatis mutandis* to the first and second auxiliary requests so that the first and second auxiliary requests are not clearly allowable. The first and second auxiliary requests are not admitted to the proceedings.

4. Third and fourth auxiliary requests

4.1 The objections raised in respect of the main request also apply to the third and fourth auxiliary requests, since the corresponding parts of the claims do not differ.

4.2 Regarding the "disclaimer" type formulations, the compounds specified are discussed in the application as filed in respect of the prior art and it is said that said peroxides are not effective. Consequently it is apparent that the purpose of the disclaimer is not to exclude novelty destroying subject-matter but to exclude subject-matter that seemingly would not solve the technical problem, i.e. to address a potential defect pursuant to Art. 56 EPC. As held in G 1/03, in such a case a disclaimer is not admissible.

Since the disclaimed compounds are not disclosed as part of the subject-matter of the invention, the findings of decision G 2/10 on so-called "disclosed disclaimers" is also not applicable. For this reason, too, the claims 1 of the third and fourth auxiliary requests do not meet the requirements of Art. 123(2) EPC.

4.3 The third and fourth auxiliary requests are therefore refused.

5. Fifth and sixth auxiliary requests

The claims 1 of the fifth and sixth auxiliary requests differ from claim 1 of the main request by the definition of the organic peroxide.

However the objections raised in respect of the main request apply *mutatis mutandis* to said requests, which has not been disputed by the appellant.

It is therefore not necessary, for the purposes of the present decision, to assess the effect of the further amendments made on the question of added subject-matter.

The fifth and sixth auxiliary requests thus do not meet the requirements of Art. 123(2) EPC and are refused.

6. Seventh auxiliary request

The seventh auxiliary request was filed after the issue of the summons, with the consequence that the admissibility of the request to the proceedings is a matter for the discretion of the Board (See point 3 above with respect to the first and second auxiliary requests).

The seventh auxiliary request differs from the main request in that the range of half life defined, i.e. 0.08-0.5 hour, is explicitly disclosed as such on page 4, line 3 of the application as filed. Thus, in contrast to the main request, the selection of the half-life is based on an explicit disclosure of a range rather than being constructed from end points disclosed for different ranges. Nevertheless the definition of said range constitutes a selection out of various possibilities. The final feature of the claim relating to the use of a specific peroxide and a given reaction temperature is disclosed at page 3, lines 16 and 18. However, this final feature represents a further selection in addition to those noted for the main request. Consequently, as for the main request, the

subject-matter of the seventh auxiliary request is the result of a plurality of selections from the application as originally filed. As a result claim 1 of the seventh auxiliary request is not *prima facie* clearly allowable pursuant to Art. 123(2) EPC.

The seventh auxiliary request is not admitted to the proceedings.

## Order

### **For these reasons it is decided that:**

The appeal is dismissed.

The Registrar:

The Chairman:



S. Sánchez Chiquero

B. ter Laan

Decision electronically authenticated