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D E C I S I O N
of 23 November 1999

Case Number: T 0915/95 - 3.3.3

Application Number: 90307951.5

Publication Number: 0414377

IPC: C08G 73/02

Language of the proceedings: EN

Title of invention:
Polymers and prepolymers and their use in a method for the treatment of wool

Applicant:
Precision Processes Textiles

Opponent:
-

Headword:
-

Relevant legal provisions:
EPC Art. 54, 84, 123(2)
EPC R. 67

Keyword:
"Amendments (fourth auxiliary request) - added subject-matter (no)"
"Claims - interpretation - clarity (yes)"
"Novelty - use claim - different technical purpose"
"Basis of decisions - opportunity to comment (yes)"

Decisions cited:
-

Catchword:
T 0434/92, T 0653/92, T 0426/94

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0915/95 - 3.3.3

D E C I S I O N
of the Technical Board of Appeal 3.3.3
of 23 November 1999

Appellant: Precision Processes Textiles
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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 20 June 1995 refusing European application No. 90 307 951.5 pursuant to Article 97(1) EPC.**

Composition of the Board:

Chairman: C. Gérardin
Members: P. Kitzmantel
J. A. Stephens-Ofner

Summary of Facts and Submissions

I. This appeal, the second appeal in the course of the prosecution of this application, was filed on 18 August 1995, and lies against the decision of the Examining Division dated 20 June 1995 refusing European patent application No. 90 307 951.5 in the name of Precision Processes (Textiles) Limited filed on 20 July 1990 and published under No. 0 414 377. The appeal fee was paid together with the Notice of Appeal and the Statement of Grounds of Appeal was filed on 25 October 1995.

II. Prior to this second appeal the application had already been refused by a first decision of the Examining Division dated 19 January 1995 on the sole ground of non-compliance of the claims then on file with the requirement of Article 123(2) EPC. In addition to this formal issue the Examining Division had also given full consideration to the substantive issues, explaining why the wording of these claims did not overcome the objection of lack of novelty raised previously, but also indicating that in view of the prior art documents the application in suit would appear to contain inventive subject-matter.

That first decision of refusal was rectified by the Examining Division under Article 109(1) EPC, because, together with its (first) appeal against that first decision, the Appellant had reinstated the version of the claims as originally filed, removing thereby the ground on which that first decision of refusal was based.

In the fourth paragraph, last sentence of the Statement of Grounds for Appeal of the said first appeal, received on 17 March 1995 it was stated: "Once we receive notification that the decision to refuse the

application has been set aside and that the examination proceedings are to be resumed, it is the Applicant's intention to submit a further set of claims which have been amended and restricted ... also taking into consideration points raised during the earlier examination proceedings."

However, the notification of rectification of the first decision of 8 June 1995 was immediately followed by the issuance of the second decision of refusal on 20 June 1995, against which the present second appeal was lodged.

III. The current decision under appeal was based on the set of 11 claims as originally filed, independent Claim 1 reading as follows:

"1. A polymer or prepolymer having one of the following structural formulae:

i) $[[(R_1)_nN-]_s J-[N(R_1)_{n-1}-]_{r-s}]_t B$

or

ii) $\{K\}_x-\{B\}_y-K$

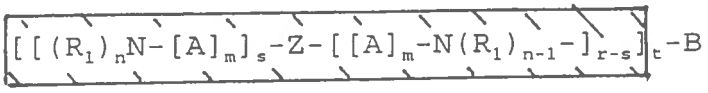
wherein

J represents a residue derived from a polyfunctional polyether;

K represents the monofunctional or polyfunctional residue derived from partial reaction of a prepolymer of the formula:

$Z-\{[A]_m-N(R_1)_n\}_r$ (I) or $J[N(R_1)_n]_r$ (II)

that is, it represents the shaded area in the following formula:



B is the residue created by bi- or polyfunctional reaction between any polyfunctional reactive group and the parent amine of the title compound (formula (I) where R_1 is hydrogen in all cases) or is the residue of a reactive amino-acrylic polymer or a reactive polyamide polymer;

Z represents a residue of a polyol;

A represents a polyalkylene oxide residue;

R_1 represents a fibre reactive grouping such as the residue derived from monofunctional reaction of an epihalohydrin, an alkyl or alkyl aryl polyhalide or a methylol grouping derived from monofunctional reaction of formaldehyde, or is alkyl, hydroxyalkyl or hydrogen, with the proviso that at least one group R_1 per polyoxyalkyleneamine residue, and preferably at least one for each nitrogen, retains residual fibre reactivity;

m is between 4 and 50;

n is 2 or 3, with the proviso that, where n is 3, the nitrogen atom involved also bears a formal positive charge;

p is 1 or 2, with the proviso that, where p is 2, the nitrogen atom involved also bears a formal positive charge;

r equals the functionality of group Z;

t is a number representing the functionality of reaction of the residue B;

s is a number between 1 and r-1;

x is between 2 and 30; and

y is from $\frac{x}{t-1}$ to x,

with the general proviso that, in any given instance, the significance of a particular group Z, A, B, R, J or K in any given structure shall not be dictated by the significance of any other such group in the same formula, and further, wherever a formal positive charge is present in the structure, then the appropriate counter anion is taken to be present."

Claims 2 to 4 were dependent on Claim 1, independent Claim 5 related to a method for the treatment of wool so as to impart shrink resistance, and Claims 6 to 11 were dependent on that method claim.

IV. The current decision under appeal i.a. held that Claim 1 did not meet the requirements of Article 84 EPC because the terms "fibre reactive grouping", "polyfunctional reactive group", "reactive amino-acrylic polymer" and "reactive polyamide polymer" as well as the meaning of the radical "K" were unclear; moreover, the subject-matter of this claim did not comply with Article 54 EPC in that it was anticipated by the disclosure of any of the documents

D1: US-A-4 839 460,

D2: US-A-4 239 497,

D3: EP-A-0 326 937,

D4: FR-A-2 072 594 and

D5: DE-A-1 419 042.

V. In the course of the written appeal proceedings, partly in response to two communications of the Board dated 24 July 1998 and 28 April 1999, the Appellant submitted several amended sets of claims finally leading to four requests: a main request and a first auxiliary request filed on 25 March 1999; second and third auxiliary requests filed on 8 October 1999.

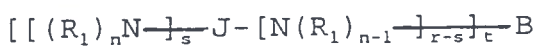
During the oral proceedings held on 23 November 1999 the Appellant submitted a fourth auxiliary request.

In the Appellant's submission, all claims were clear, supported by the original application and their subject-matter was novel and inventive over the citations.

Concerning the request for reimbursement of the appeal fee the Appellant argued that by not favourably responding to its offer to submit amended claims in the Statement of Grounds for the first Appeal (cf. point II supra) the Examining Division committed a substantial procedural violation.

(i) Claim 1 of the **main request** reads as follows [in the interests of consistency the symbol Z', used by the Appellant only in the formula definition of the radical J, was replaced by the symbol Z^1, which was otherwise used by the Appellant for the same unit; the same correction also appears in the subsequent quotation of Claim 1 of the first auxiliary request (cf. sub-paragraph (ii))]:

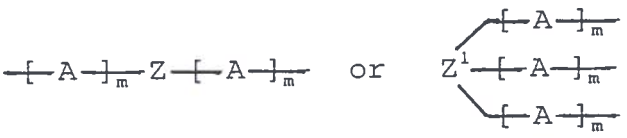
"1. A polymer or prepolymer having the following structural formula:



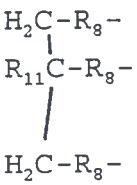
where

N is nitrogen;

J represents a residue derived from a polyfunctional polyether and represented by the grouping:



where Z is a C_2-C_4 alkylene group; and Z^1 represents:



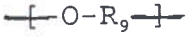
where R_{11} is selected from:

hydrogen, or an ethyl group;

and each R_8 may be the same or different and is selected from:

a direct bond, or a methylene group;

where A represents:



and is always linked to Z or Z^1 by the oxygen atom (O);

where R_9 represents a C_2-C_4 alkylene group, with the proviso that each individual group R_9 in any structure may be the same or different from any other group R_9 in that structure;

B is a bi- or polyfunctional bridging or connecting group, provided that B shall not represent the group $-CH_2CHOHCH_2-$ when R_1 represents a residue derived from epichlorohydrin;

R_1 represents a residue derived from monofunctional reaction of an epihalohydrin, an alkyl or alkyl aryl polyhalide or is alkyl, hydroxyalkyl (provided that it is other than hydroxymethyl) or hydrogen, provided that at least one group R_1 per polyoxyalkylene amine residue shall retain residual fibre reactivity and also provided that each individual group R_1 in any structure may be the same or different;

m is between 4 and 50;

n is 2 or 3, with the proviso that, where n is 3, the nitrogen atom involved also bears a formal positive charge;

r is either 2 or 3;

t is a number representing the functionality of the residue B;

s is 1 when r is 2 and s is 2 when r is 3;

with the general proviso that wherever a formal positive charge is present in the structure, then an appropriate counter anion is taken to be present."

Claims 2 to 4 are dependent on Claim 1, independent Claim 5 relates to a method for the treatment of wool so as to impart shrink resistance (essentially corresponding to Claim 1 of the first auxiliary request: see subsequent paragraph), and Claims 6 to 11 are dependent on Claim 5.

(ii) Claim 1 of the **first auxiliary request** reads as follows:

"1. Use of a polymer as hereinafter defined in a method for the treatment of wool so as to impart shrink resistance which comprises treating the wool with an aqueous solution of the polymer so as to cause the polymer to be applied to the wool fibres, characterised in that the polymer is a polymer or prepolymer having one of the following structural formulae:

(i) $J[N(R_{10})_n]_r$

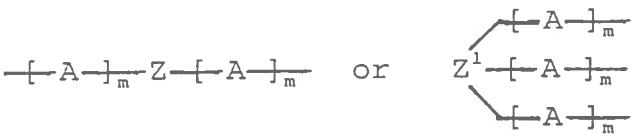
or

(ii) $[[(R_{10})_nN-]_s-J-[N(R_{10})_{n-1}-]_{r-s}]_t-B$

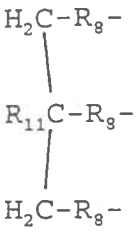
where

N is nitrogen;

J represents a residue derived from a polyfunctional polyether and represented by the grouping:



where Z is a C_2-C_4 alkylene group; and Z^1 represents:



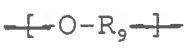
where R_{11} is selected from:

hydrogen, or an ethyl group;

and each R_8 may be the same or different and is selected from:

a direct bond, or a methylene group;

where A represents:



and is always linked to Z or Z^1 by the oxygen atom (O);

where R_9 represents a C_2-C_4 alkylene group, with the proviso that each individual group R_9 in any structure may be the same or different from any other group R_9 in that structure;

m is between 4 and 50;

n is 2 or 3, with the proviso that, where n is 3, the nitrogen atom involved also bears a formal positive charge;

r is either 2 or 3;

t is a number representing the functionality of the residue B;

s is 1 when r is 2 and s is 2 when r is 3;

R_{10} represents a residue derived from monofunctional reaction of an epihalohydrin, an alkyl or alkyl aryl polyhalide or a methylol grouping derived from monofunctional reaction of formaldehyde, or is alkyl, hydroxyalkyl or hydrogen, with the proviso that at least one group R_{10} per polyoxyalkyleneamine residue, and preferably at least one for each nitrogen, retains residual fibre reactivity;

B is a bi- or polyfunctional bridging or connecting group;

with the general proviso that the significance of a particular group in any given structure shall not be determined by the significance of any other such group in the same formula, and further, wherever a formal positive charge is present in the structure, then an appropriate counter anion is taken to be present."

The further nine claims of this request are dependent on Claim 1.

(iii) Claim 1 of the **second auxiliary request** reads as follows:

"1. A polymer or prepolymer having the following structural formula:

$$[[(R_1)_nN\text{---}]_sJ[\text{-}N(R_1)_{n-1}\text{---}]_{r-s}]_tB$$

wherein:

N is nitrogen;

J represents a residue derived from a polyfunctional polyether diol or triol, prepared by polyoxyalkylation of a di- or trivalent active hydrogen containing starter compound, the polyether portions comprising units derived from ethylene, propylene or butylene oxides or tetrahydrofuran,

wherein:

- when J is the residue of a polyether diol, it comprises 2m repeating units (excluding the unit created by the starter compound),

- when J is the residue of a polyether triol, each polyether branch comprises m repeating units,

- and wherein the groups $-N(R_1)_n$ are linked to J via a terminal C-atom of the polyether chains;

B is a bi- or polyfunctional bridging or connecting group, provided that B shall not represent the group $-CH_2CHOHCH_2-$ when R_1 represents the residue derived from epichlorohydrin;

R_1 represents a residue derived from monofunctional reaction of an epihalohydrin, an alkyl or alkyl aryl polyhalide, or is alkyl, hydroxyalkyl (provided that it is other than hydroxymethyl) or hydrogen, provided that at least one group R_1 per polyoxyalkylene amine residue shall retain residual fibre reactivity and also provided that each individual group R_1 in any structure may be the same or different;

m is between 4 and 50;

n is 2 or 3, with the proviso that, where n is 3, the nitrogen atom involved also bears a formal positive charge;

r is either 2 or 3;

t is a number representing the functionality of the residue B;

s is 1 when r is 2 and s is 2 when r is 3;

with the general proviso that the significance of a particular group in any given structure shall not be determined by the significance of any other such group in the same formula, and further, wherever a formal positive charge is present in the structure, then an appropriate counter anion is taken to be present."

Claims 2 to 11 of the second auxiliary request are identical with the same claims of the main request.

(iv) Claim 1 of the **third auxiliary request** reads as follows:

"1. Use of a polymer as hereinafter defined for the purpose of imparting shrink resistance to wool by treating the wool with an aqueous solution of the polymer so as to cause the polymer to be applied to the wool fibres,

characterized in that the polymer has one of the following structural formulae:

i) $J[N(R_1)_n]_r$ or

ii) $[[(R_1)_nN]_sJ[-N(R_1)_{n-1}]_{r-s}]_tB$

wherein:

N is nitrogen;

J represents a residue derived from a polyfunctional polyether diol or triol, prepared by polyoxyalkylation of a di- or trivalent active hydrogen containing starter compound, the polyether portions comprising units derived from ethylene, propylene or butylene oxides or tetrahydrofuran,

wherein:

- when J is the residue of a polyether diol, it comprises 2m repeating units (excluding the unit created by the starter compound),

- when J is the residue of a polyether triol, each polyether branch comprises m repeating units,

- and wherein the groups $-N(R_1)_n$ are linked to J via a terminal C-atom of the polyether chains;

R_1 represents a residue derived from monofunctional reaction of an epihalohydrin, an alkyl or alkyl aryl polyhalide or a methylol grouping derived from monofunctional reaction of formaldehyde, or is alkyl or hydroxyalkyl or hydrogen, with the proviso that at least one group R_1 per polyoxyalkylene amine residue retains residual fibre reactivity;

B is a bi- or polyfunctional bridging group or connecting group;

m is between 4 and 50;

n is 2 or 3, with the proviso that, where n is 3, the nitrogen atom involved also bears a formal positive charge;

r is either 2 or 3;

t is a number representing the functionality of the residue B;

s is 1 when r is 2 and s is 2 when r is 3;

with the general proviso that the significance of a particular group in any given structure shall not be determined by the significance of any other such group in the same formula, and

further, wherever a formal positive charge is present in the structure, then an appropriate counter anion is taken to be present."

Claims 2 to 10 of this auxiliary request are identical to the same claims of the first auxiliary request.

(v) The **fourth auxiliary request** is identical with the third auxiliary request, save for the following three minor changes in Claim 1:

- the statement "N is nitrogen" is deleted;

- in the definition of J the statement "... prepared by polyoxyalkylation of a **di- or trivalent active hydrogen containing** starter compound ..." is replaced by the statement "... prepared by polyoxyalkylation of a **diol or triol** starter compound ...", and

- also in the definition of J the word "wherein" is deleted from the statement "... and **wherein** the groups $-N(R_1)_n$ are linked to J via a terminal C-atom of the polyether chains". [emphasis in the quotations by the Board]

VI. The Appellant requested that the decision under appeal be set aside, a patent be granted on the basis of the main request or any of the auxiliary requests, and the appeal fee be reimbursed.

Reasons for the Decision

1. The appeal is admissible.

2. *Amendments (Article 123(2) EPC)*

2.1 Main request and first auxiliary request

The definitions of the radicals Z, Z^1 (including R_8) and A (including R_9) in Claim 1 of these requests do not comply with the provisions of Article 123(2) EPC.

Particularly, there is no basis in the application as filed for the definitions, that

(i) Z is a C_2-C_4 alkylene group,

(ii) R_8 is a methylene group, and

(iii) "each individual group R_9 in any structure may be the same or different from any other group R_9 in that structure".

There is no general disclosure of any of these definitions in the application as filed; according to page 6, lines 29 to 34 Z is the residue of a polyol, preferably a di- or trivalent polyol and the radical A, which corresponds to the unit $-(OR_9)-$ in the claims under discussion, represents a polyether chain produced by polymerisation of, for example, ethylene, propylene or butylene oxides or tetrahydrofuran. Nor can the formulae IX to XIV (pages 15 and 20) justify the above definitions, since they merely correspond to the specific amine containing prepolymers used in the examples, as it appears from the experimental data in the various tables; the structural features of these prepolymers have thus each been disclosed in a specific

context which cannot be extended to general requirements. This applies in particular to the difunctional radicals Z in formulae IX, XII and XIV, which comprise oxyethylene, oxy-i-propylene, oxy-n-butylene and/or oxy-sec-butylene units in particular combinations and proportions and the trifunctional radicals Z^1 in formulae X, XI and XIII, which comprise oxy-i-propylene or oxy-n-butylene units in particular proportions. None of the latter formulae comprises a unit R_3 = methylene.

Therefore, the features (i), (ii) and (iii) define subject-matter which extends beyond the content of the application as filed.

2.2 Main request and second auxiliary request

The proviso in the definition of the substituent R_1 in Claims 1 of these requests, namely that when this radical is hydroxyalkyl it must be "other than hydroxymethyl", is not based on the disclosure in the application as filed. On the contrary, in the original version of Claim 1 the meaning R_1 = methylol (= hydroxymethyl) is specifically foreseen.

Neither can this proviso be regarded as a disclaimer based on otherwise novelty destroying state of the art, because its content goes beyond the subject-matter which is disclosed in the relevant state of the art, here D1 and D4 (cf. T 0434/92 of 28 November 1995, T 0426/94 of 22 May 1996, T 0653/92 of 11 June 1996). This results from the fact that according to these citations the groups corresponding to the radical B of Claim 1, which may link the repeating units of the polyoxyalkyleneamine-based compounds, whose N-atoms may be substituted with hydroxymethyl groups ($\approx R_1$), do not

satisfy the definition of the radical B. According to D1 this linking group may only be methylene (from bifunctional reaction of formaldehyde) and according to D4 it may only be carbonyl (from bifunctional reaction of urea)(cf. points 4.1 and 4.4 below).

This proviso therefore goes beyond the disclosure of the respective state of the art.

2.3 Second and third auxiliary requests

The definition of the starter compound (Z) as "di- or trivalent active hydrogen containing" compound in the definition of the radical J in Claim 1 of these requests has no basis in the disclosure of the application as filed, because in the only relevant statement in the application (page 6, lines 29 to 30) the starter compound Z is more narrowly defined as "residue of a polyol, preferably a di- or trivalent polyol". Since the term "active hydrogen containing compound" encompasses compounds other than polyols, this statement goes beyond the scope of the original disclosure.

2.4 The main request and the first, second and third auxiliary requests are therefore not allowable as they do not comply with the requirements of Article 123(2) EPC.

2.5 Fourth auxiliary request

2.5.1 Claim 1

(i) The introductory statement of this claim "[U]se of a polymer ... for the purpose of imparting shrink resistance to wool by treating ... to be applied to the wool fibres" is based on page 12, lines 9 to 13 of the application as filed.

(ii) Formulae (i) and (ii) correspond to the formulae in Claim 5 of the application as filed.

(iii) The definition of the radical "J" is based on the disclosure in the application as filed on page 5, line 27 to page 6, line 30; page 8, lines 29 to 30; formulae (IX) to (XIV) on pages 15 and 20, from which it follows that the unit "Z" in formulae (I) and (III) on pages 5 and 6 depicts the residue of the starter compound used in the preparation of polyetherpolyols.

(iv) The definition of the radical R_1 is based on page 9, lines 5 to 13 of the application as filed.

(v) The definition of the linking group B is based on the disclosure in original Claim 1 and on page 6, line 35 to page 8, line 2, according to which the residue B is a unit containing two or more amine-reactive functional groups. The latter feature is in agreement with formula ii), according to which the radical B is bonded to nitrogen.

(vi) The definitions of the parameters m, n, r, t and s as well as the final "general proviso" are based on original Claim 1.

(vii) Claims 2 to 10 of the fourth auxiliary request are based on Claims 2 to 4 and 6 to 11 of the application as filed.

(viii) The set of claims according to the fourth auxiliary request, thus, complies with the requirement of Article 123(2) EPC.

3. *Clarity (Article 84 EPC); fourth auxiliary request*

The decision under appeal (Reasons 2.3.1) held that the terms "fibre reactive grouping" and "polyfunctional reactive groups" in the Claim 1 then valid were unclear.

3.1 Following the restriction to the treatment of wool, the proviso "that at least one group R_1 per polyoxyalkylene amine residue retains residual fibre reactivity" is in the Board's view clear, because it is within the general common knowledge of one skilled in the art to choose, among the alternatives set out in Claim 1, a substituent R_1 which is "capable of causing a molecule [i.e. compounds i) and ii)] to be bound to the surface of a [wool] fibre in such a way as not to be readily removable therefrom" (cf. page 10, line 34 to page 11, line 4 of the application as filed). The broadness of this functional definition does not affect its clarity.

3.2 The same conclusion applies to the definition in Claim 1 of the radical B being "a bi- or polyfunctional bridging group or connecting group". As set out in point 2.5.1(v) supra this definition is limited to such radicals B whose functional groups are able to react with the amino groups of the polyoxyalkylene polyamine units of formula ii). Insofar the objection in the decision under appeal, namely that Claim 1 "does not indicate with what ... the group is reactive" does not apply. Again, the fact that the definition of B is broad does not impair its clarity, as long as the choice of appropriate functional groups is within the common general knowledge of a skilled person.

4. *State of the art*

4.1 Document D1

This document relates to a process for preparing polymers, comprising reacting a primary polyether polyamine of the formula $A(E_pNH_2)_m$ wherein A is the residue of a polyether initiator having m initiator groups, E is an ether moiety from an oxirane compound, p is 5-90 and m is 2-8, with an aqueous solution of monomeric formaldehyde or with paraformaldehyde in the absence of a diluent. When an initiator is used in which m is 3 or greater, a crosslinked network may result (Claim 1; column 4, lines 46 to 50). According to column 5, lines 16 to 23 tacky substances, which are useful as adhesives or resinous, rubbery products may be produced.

This disclosure encompasses polyether polyamine reaction products having hydroxymethyl substituted amino groups (corresponding to R_1) and methylene linking groups (corresponding to B) between the nitrogen atoms of the repeating units.

4.2 Document D2

This document relates to a composition comprising a major amount of a hydrocarbon oil containing 0.0001% to about 1% of the reaction product of 1 molar proportion of a poly(oxyalkylene)amine with about 0.5 to about 2.0 molar proportion of an epihalohydrin (Claim 1). According to column 4, lines 34 to 40 the primary reaction product of epihalohydrin and amine may undergo further condensation.

This disclosure encompasses polyether polyamine reaction products having amino groups which are substituted with residues derived from the

monofunctional reaction of epichlorohydrin (corresponding to R_1) and $-CH_2CHOHCH_2-$ residues derived from the bifunctional reaction of epichlorohydrin (corresponding to B) between the nitrogen atoms of possibly resulting repeating units.

4.3 Document D3

Claim 1 of this document, which is to be considered under Article 54(3) EPC only, relates to a resinous composition comprising an ungelled reaction product of a polyepoxide and a polyoxyalkylene polyamine, whose amino groups have been, partly or completely, reacted with glycidol (page 4, lines 29 to 31). By that reaction radicals $-CH_2CHOHCH_2OH$ are formed.

The modified adducts are at least partially neutralized with acid and used in cationic electrodeposition (page 4, lines 41 to 57; Claims 15, 16).

4.4 Document D4

This document relates to compounds, which comprise units $-CO-NR-(-R'O-)_m-(CH_2CHR"O-)_n-$ wherein R and R" are hydrogen or methyl and R' is C_3 to C_5 alkylene. After introduction of methylol groups by reaction with formaldehyde these compounds are used for the treatment of textiles comprising cellulose or modified cellulose in order to provide them with durable press (i.e. crease proofing) and abrasion resistance properties (Claim 1; page 4, lines 8 to 17; page 17, lines 2 to 9).

In the case that these compounds are formaldehyde modified urea polymers (page 3, lines 9 to 18), they comprise hydroxymethyl radicals (corresponding to R_1) and amino group connecting -CO- units (corresponding to B).

4.5 Document D5

This document relates to a process for the provision of antistatic properties to shaped bodies, including fabrics, by their treatment with aqueous solutions of reaction products of polyoxalkylene substituted polyamines with compounds comprising more than one epoxy or halogenhydrin group. The polyoxalkylene substituted polyamines used as starting compounds may be prepared by reaction of a polyalkyleneoxide comprising reactive substitutents like chlorohydrin or glycidyl with polyalkylene polyamines (Claim 1; manuscript page 2, last paragraph to manuscript page 4, first paragraph).

According to Example 2 (manuscript page 9) the starting compound, prepared by reaction of ethylene chlorohydrin, ethylene oxide and diethylene triamine, is further reacted with epichlorohydrin.

Reaction products, wherein the polyalkylene oxide units are bonded to the amino group via an alkylene group (not via a 2-hydroxy-n-propylene group resulting from the bifunctional reaction of epichlorohydrin), wherein the amino groups are linked by a bridging group and wherein the amino groups are also substituted with groups having fibre reactivity, are not within the disclosure of D5.

According to Example 7 a woollen fabric is treated with a reaction product of polyethylene glycol, epichlorohydrin and dipropylene triamine. After several "household washing operations" the fabric exhibits a good antistatic effect and an improved "shape stability" ("Formstabilität")(manuscript page 14).

5. *Novelty (Article 54 EPC), fourth auxiliary request*

Novelty of the claimed subject-matter has been established by the formulation as use claim for the purpose of imparting shrink resistance to wool.

From the citations only documents D4 and D5 are concerned with the treatment of textiles, but none of them relates to the specified wool treatment.

5.1 Document D4 concentrates on the provision of the very different property of crease proofing of different textiles, i.e. cellulose based materials, which can hardly be compared to woollen materials.

5.2 Document D5, although mentioning the treatment of woollen fabrics (cf. Example 7 of D5 referred to in the last paragraph of point 4.5 supra), does it for purposes which are unrelated to the claimed use of imparting shrink resistance. This conclusion is valid not only for the quite different main purpose of this document of providing antistatic properties, but also for the second advantage referred to in Example 7 of D5, i.e. the "shape retention". In the Board's judgment the Appellant is correct in stating that this property is different from the property of "shrink resistance", because the latter term does not translate into "Formstabilität", the term employed in D5, but into "Schrumpfresistenz" or "Filzfreiheit". As compared with "shrink resistance", i.e. the reduction of the propensity of woollen materials to felting, "Formstabilität" only means that after washing the fabric retains its form and/or appearance, i.e. its width, length, etc.

Since Claims 2 to 10 of the fourth auxiliary request are also directed to the same use, their subject-matter is likewise novel of the cited prior art.

6. *Inventive step (Article 56 EPC), fourth auxiliary request*

Document D5 represents the closest prior art, because it is the only citation disclosing the treatment of wool. However, the teaching of this document cannot suggest the claimed solution of the existing technical problem, i.e. the provision of shrink resistance to wool. As argued in point 5.2 supra the property "shape retention" ("Formstabilität") is unrelated to the property "shrink resistance" and the achievement of a good "shape retention" does not allow, therefore, the assumption that by the treatment of a woollen fabric with the same or a similar composition an improvement of the shrink resistance will result.

Thus, if only for that reason, the subject-matter of Claim 1 of the fourth auxiliary request involves an inventive step.

The same conclusion applies *a fortiori* to the subject-matter of the dependent claims 2 to 10.

7. The set of claims of the fourth auxiliary request, thus, complies with the requirements of the EPC, in particular those of Articles 54, 56, 84 and 123 (2).

8. *Request for reimbursement of the appeal fee*

According to Rule 67 EPC "reimbursement of appeal fees shall be ordered ... where the Board of Appeal deems an appeal to be allowable, if such reimbursement is equitable by reason of a substantial procedural violation."

8.1 The Appellant argued that in the present case its right to be heard as stipulated in Article 113(1) EPC had not been respected, in that the Examining Division had not, as requested by the Appellant, granted it an opportunity to amend the claims on which the interlocutory revision was based (cf. point V, third paragraph).

This argument of the Appellant is based on a misinterpretation of Article 113(1) EPC, which clearly states that "[t]he decisions of the European Patent Office may only be based on grounds or evidence on which the parties concerned have had an opportunity to present their comments."

Since, however, the grounds for the refusal of the application as rectified had already been communicated to the Appellant in detail by the Examining Division's communication of 19 February 1993, this decision of refusal did not contravene the provisions of Article 113 EPC.

8.2 To support its allegation of substantial procedural violation, the Appellant relied in effect on the general procedural principles referred to in Article 125 EPC, according to which "the European Patent Office shall take into account the principles of procedural law generally recognised in the Contracting States", and argued that a final decision against a party should under no circumstance be issued when that party had the legitimate expectation that the examination proceedings would be reopened.

In the present case this principle was not violated, because the decision to satisfy or not the Appellant's wish of being given a further opportunity to submit amended claims was clearly within the discretionary power vested in the Examining Division by virtue of Rule 86 (3) EPC. According to that rule an applicant may, after receipt of the first communication, amend the application of its own volition only once in reply to that communication. No further amendment may be made without the consent of the Examining Division.

The immediate (second) refusal of the application after having rectified the (first) decision of refusal, thus, does not amount to a procedural violation, let alone a substantial one.

8.3 Consequently, there is no equitable reason justifying a reimbursement of the appeal fee.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The main request and the first, second and third auxiliary requests are rejected.

3. The case is remitted to the Examining Division with the order to grant the patent on the basis of the fourth auxiliary request and after any consequential amendment of the description.

4. The request for reimbursement of the appeal fee is refused.

The Registrar: The Chairman:

E. Görgmaier C. Gérardin