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D E C I S I O N
of 26 October 1999

Case Number: T 0044/95 - 3.3.3

Application Number: 85301999.0

Publication Number: 0161757

IPC: C08F 6/24

Language of the proceedings: EN

Title of invention:

Treatment of aqueous suspensions of vinyl chloride polymers

Patentee:

Imperial Chemical Industries PLC

Opponent:

Henkel Kommanditgesellschaft auf Aktien

Headword:

-

Relevant legal provisions:

EPC Art. 54, 56, 113(1)

Keyword:

"Novelty (main request) - enabling disclosure (yes)"
"Inventive step (auxiliary requests) - obvious combination of known features"

Decisions cited:

-

Catchword:

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Boards of Appeal

Chambres de recours

Case Number: T 0044/95 - 3.3.3

D E C I S I O N
of the Technical Board of Appeal 3.3.3
of 26 October 1999

Appellant: Henkel
(Opponent) Kommanditgesellschaft auf Aktien
TFP/Patentabteilung
40191 Düsseldorf (DE)

Representative: -

Respondent: Imperial Chemical Industries PLC
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Representative: Votier, Sidney David
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Decision under appeal: Interlocutory decision of the Opposition Division
of the European Patent Office posted 14 November
1994 concerning maintenance of European patent
No. 0 161 757 in amended form.

Composition of the Board:

Chairman: C. Gérardin
Members: B. ter Laan
J. Stephens-Ofner

Summary of Facts and Submissions

- I. Mention of the grant of European patent No. 0 161 757 in respect of European patent application No. 85 301 999.0, filed on 22 March 1985, claiming priority from two earlier applications in Great Britain (8409962 of 17 April 1984 and 8424353 of 26 September 1984), was announced on 2 August 1989, on the basis of twenty claims, Claim 1 reading:

"Method of treating an aqueous suspension of a vinyl chloride polymer, produced by aqueous suspension polymerisation and containing vinyl chloride monomer, to inhibit wet-foaming therein, which method comprises adding to the suspension a glyceride of an optionally substituted saturated or unsaturated carboxylic acid containing 6 to 20 carbon atoms."

Claims 2 to 12 referred to preferred embodiments of the method according to Claim 1.

Independent Claim 13 read:

"An aqueous emulsion formulation for use in inhibiting wet- and dry-foaming in an aqueous suspension of a vinyl chloride polymer produced by aqueous suspension polymerisation and containing vinyl chloride monomer, which aqueous emulsion formulation comprises a glyceride of an optionally substituted carboxylic acid for inhibiting wet-foaming and a water-soluble PVA or cellulosic derivative serving as the emulsion stabiliser and also for inhibiting dry-foaming."

Dependent Claims 14 to 20 were directed to preferred

embodiments of the aqueous emulsion formulation according to Claim 13.

II. On 30 April 1990 a Notice of Opposition against the granted patent was filed, in which the revocation of the patent in its entirety was requested on the grounds set out in Article 100(a) EPC. The opposition was, *inter alia*, supported by the following documents:

D1: DE-B-1 076 374,

D2: Declaration ("Eidesstattliche Erklärung") of Dr R. Höfer dated 30 April 1990, regarding the contents of DEHYDRAN® P 10 and

D3: Vorläufiges Merkblatt DEHYDRAN® 131, 240, 520, C, F, G, P 10, Ausgabe 07/83.

III. By an interlocutory decision issued in writing on 14 November 1994, the Opposition Division held that there were no grounds of opposition prejudicing the maintenance of the patent in amended form, i.e. on the basis of Claims 1 to 12 as filed by letter of 6 April 1993, Claim 1 reading:

"Method of treating an aqueous suspension of a vinyl chloride polymer, produced by aqueous suspension polymerisation and containing vinyl chloride monomer, to inhibit wet-foaming and dry-foaming therein, which method comprises adding to the suspension a glyceride of an optionally substituted saturated or unsaturated carboxylic acid containing 6 to 20 carbon atoms to inhibit wet-foaming and a wetting agent to inhibit dry-foaming, and wherein said glyceride is added to the

suspension in the form of an oil-in-water emulsion and wherein at least part of the wetting agent used to inhibit dry-foaming is a water-soluble PVA or cellulosic compound which additionally serves as an emulsion stabiliser for the oil-in-water emulsion of the glyceride that is added to the suspension."

Claims 2 to 8 referred to preferred embodiments of the method according to Claim 1.

Independent Claim 9 read:

"The use of a water-soluble PVA or cellulosic compound in the stabilisation of an oil-in-water emulsion of a glyceride of an optionally substituted saturated or unsaturated carboxylic acid containing 6 to 20 carbon atoms for the inhibition of dry foaming in an aqueous suspension of a vinyl chloride polymer produced by aqueous suspension polymerisation and containing vinyl chloride monomer."

Claims 10 to 12 referred to preferred embodiments of the use according to Claim 9.

The Opposition Division held that

- (a) The requirements of Articles 123(2) and 123(3) EPC were met.
- (b) The claimed subject-matter was novel since none of the cited documents disclosed all the features in the required combination.
- (c) As regards the presence of an inventive step,

either D1 or D3 could be considered as the closest document. In accordance with the introductory statement in the patent specification, the problem to be solved was seen as the prevention of both wet- and dry-foaming which occurs in the degassing step of polyvinyl chloride suspensions without impairing the polymer properties, in particular the volume resistivity. That problem had been effectively solved. Since neither D1 nor D3 addressed the same problem as the patent in suit, they contained no suggestion to modify the teaching of either of those documents so as to arrive at the claimed subject-matter. The same was valid for the other documents on file.

IV. On 9 January 1995 the Appellant (Opponent) lodged an appeal against the above decision and paid the prescribed fee simultaneously. The Statement of Grounds of Appeal was filed on 9 February 1995 and contained a reference to a further document which had not been cited before.:

D6: Research Disclosure 19516, July 1980.

V. The Appellant argued essentially as follows:

(a) As to the introduction of D6 into the proceedings, that document contained a passage which disclosed the claimed subject-matter, so that it was highly relevant. Furthermore, the Respondent was familiar with D6 since it had been mentioned as prior art in the patent specification. However, the Respondent had not fully described its contents and the novelty-damaging passage of that document

had not been referred to. For that reason the Appellant, who had relied on the Respondent's summary, had not cited it earlier in the proceedings.

- (b) Regarding novelty, D6 disclosed a method for the removal of monomer residue from aqueous polyvinyl chloride suspensions, according to which a plasticizer with anti-foaming properties, e.g. epoxidized soya bean oil, was added in the form of an aqueous dispersion stabilized with polyvinyl alcohol or a cellulose derivative. Therefore, the claimed subject-matter was not novel.

- (c) As regards inventive step, the problem underlying the patent in suit had already been solved by the products described in D1 and D3 as well as D6. The examples did not show any advantages of the patent in suit over those documents. In particular, the moment of adding the anti-foam emulsion did not result in any unexpected effect. Moreover, the skilled person could learn from D1 to use oil-in-water emulsions for the removal of monomer residues from PVC suspensions, and from both D1 and D3 that such emulsions prevented foaming. Starting from D6 it was obvious to use the glycerides described in D1 and D3 as anti-foaming dispersions. Therefore, the claimed subject-matter was not inventive.

VI. The Respondent, in reply, filed three sets of twelve, eleven and twelve claims respectively, as auxiliary requests.

Claims 1 and 9 of the first auxiliary request were amended in respect of the definition of the glyceride, the epoxidized soya bean oil being disclaimed.

In Claim 1 of the second auxiliary request the glyceride was restricted to compounds derived from an unsaturated carboxylic acid. The same amendment was made to Claim 8 (former Claim 9).

Claim 1 of the third auxiliary request referred to a mono-glyceride and the same limitation occurred in Claim 9.

The Respondent argued essentially as follows:

- (a) No objection was made against the introduction of D6 into the proceedings.
- (b) D6 disclosed "epoxidized soya bean oil" as one of many plasticisers used as anti-foam agents. Being epoxidized, that compound did not fall under the definition of Claim 1. However, the formulation of all three auxiliary requests excluded it anyway. Therefore, the claimed subject-matter was novel.
- (c) Regarding inventive step, D6 contained no general teaching to use the family of glycerides as now defined in the claims. As far as the other documents and the Appellant's statements were concerned, the Respondent relied upon the Opposition Division's findings and concluded that the claimed subject-matter was inventive.

VII. By a communication of 12 November 1998 the Board

summoned the parties to oral proceedings to be held on 30 March 1999.

However, by a letter filed on 23 November 1998, the Respondent withdrew its request for oral proceedings and announced its absence at the hearing.

Likewise, the Appellant also informed the Board of its intention not to attend the oral proceedings and requested a decision on the state of the file.

Accordingly, by a communication dated 15 December 1998, the Board cancelled the oral proceedings and, in a later communication, announced its intention to set aside the Opposition Division's decision and to revoke the patent.

Thereupon the Respondent stated that it would accept the Board's decision.

VIII. The Appellant requested that the decision of the Opposition Division be set aside and the patent be revoked.

The Respondent requested that the appeal be dismissed or, alternatively, that the patent be maintained on the basis of any of the auxiliary requests.

Reasons for the Decision

Admissibility of the appeal

1. The appeal is admissible.

Procedural matters

2. In the Statement of Grounds of Appeal the Appellant relied upon a new document (D6), which had so far only been acknowledged as background art in the introduction of the patent in suit.

In its counterstatement the Respondent made the following comment about this new citation: "... the Proprietor takes no issue with its introduction into the proceedings at this late stage, and will deal with it."

In its communication of 11 March 1999 the Board indicated that the late-filed document D6 had been duly examined and found sufficiently relevant to be introduced into the proceedings (Article 114(1) EPC), all the more so as the Respondent had not objected to it being considered and was apparently familiar with its contents. The Board also raised the issue of novelty as well as inventive step of the various requests in view of the teaching of that document.

It follows that the Respondent, as acknowledged in its letter of 5 May 1999, was well informed of the reasons which form the basis of the present decision and that a final decision can thus be made in writing

(Article 113(1) EPC).

Main request

Wording of the claims

3. Neither the Opposition Division nor the Appellant objected to the claims under Articles 123(2) and 123(3) EPC and the Board concurs with that view.

Novelty

4. D6 describes a method of treating an aqueous suspension of a vinyl chloride polymer produced in a polymerisation reaction and containing residual vinyl chloride monomer, in which method residual vinyl chloride monomer is stripped from the suspension, wherein there is added to the aqueous suspension an anti-foaming amount of a plasticizer which is preferably # 0.2% by weight based on the weight of vinyl chloride used in the polymerisation, to produce a vinyl chloride polymer having a volume resistivity of preferably at least 50×10^{12} ohm cm (paragraph bridging both columns).

- 4.1 The plasticizer may be selected from conventional primary or secondary plasticizers for vinyl chloride polymers and includes esters of polycarboxylic acids (e.g. phthalic acid), phosphoric esters (e.g. trioctylphosphate), polyester plasticisers (e.g. polypropylene laurate), soya bean oil derived plasticizers (e.g. epoxidized soya bean oil) and chlorinated paraffins (second column, sixth full paragraph). In a preferred embodiment, the plasticizer

is added as an aqueous dispersion stabilised by a surfactant which is at least one partially hydrolysed polyvinyl acetate and/or at least one cellulose derivative (second column, third full paragraph). Also, it may be of advantage to add a wetting agent to the suspension of vinyl chloride polymer before adding the plasticizer and particularly before stripping in order to help prevent foam forming. As a particularly suitable wetting agent the above described partially hydrolysed polyvinyl acetate (PVA) is mentioned (second column, last but one paragraph).

- 4.2 Therefore, the treatment of aqueous vinyl chloride polymer suspensions, produced by aqueous suspension polymerisation and containing vinyl chloride monomer, to inhibit wet-foaming therein, which treatment comprises adding to the suspension a plasticizer to inhibit wet-foaming and a wetting agent to inhibit dry-foaming, wherein said plasticizer is added to the suspension in the form of an oil-in-water emulsion and wherein at least part of the wetting agent used to inhibit dry-foaming is a water-soluble PVA or cellulosic compound which additionally serves as an emulsion stabiliser for the oil-in-water emulsion of the glyceride that is added to the suspension, is clearly and unambiguously derivable from D6. The double function of the polyvinyl acetate and/or cellulose derivate as both anti-dry-foam agent and stabilizer for the anti-wet-foam emulsion is explicitly mentioned and the use of epoxidized soya bean oil as the plasticizer, which is a triglyceride of mainly unsaturated fatty acids having 18 carbon atoms, is also clearly contemplated.

4.3 Thus, the information of D6 taken as a whole constitutes a prior description of the claimed method (Claim 1) and use (Claim 9) prejudicial to their novelty, because it supplies a person skilled in the art with all the information needed regarding the constituents of the oil-in-water emulsion, the way to stabilize it and its addition to the suspension of polyvinyl chloride.

5. The Respondent's argument that the epoxidation of the soya bean oil would result in a compound outside the definition of the glyceride specified in present Claim 1 and Claim 9 cannot be accepted for the following reasons.

5.1 First, regarding the features of saturation and substitution, the definition of the glyceride in the present claims is as broad as possible, leaving open all possibilities: "saturated or unsaturated carboxylic acids" includes all degrees of saturation and "optionally substituted" includes all kinds of substitutions, also none at all. According to the patent specification, the glyceride may be substituted or unsubstituted in the carboxylic acid component; if substituted, the substituent is preferably at least one alkoxy or hydroxy group, preferred glycerides being glycerol monooleate and glycerol monoricinoleate (column 2, line 62 to column 3, line 6). The patent specification contains no restriction as to the meaning of the two expressions "saturated or unsaturated" and "optionally substituted". Therefore, whatever the degree of epoxidation and residual unsaturation, in the light of the disclosure of the patent in suit, an epoxidized soya bean oil does not fall outside the

general definition of the glyceride according to Claim 1.

- 5.2 Secondly, the disclosure of D6 is not restricted to epoxidized soya bean oil. That compound is only mentioned as an example of the generic "soya bean oil derived plasticizers" mentioned as suitable anti-foam agents. The term "derived" includes many unspecified options, amongst which also substituted, (partially) saturated and modified, hence also epoxidized, compounds. Such a broad definition only requires that the skilled person can recognize the plasticizer actually used to have soya bean oil as one of its original components, which, being a triglyceride of mainly unsaturated fatty acids having 18 carbon atoms, falls within the terms of the definition of the glyceride given in Claims 1 and 9.
6. For the above reasons, the subject-matter of both Claim 1 and Claim 9 is not novel and the main request has to be rejected.

First auxiliary request

Wording of the claims

7. The first auxiliary request differs from the main request in that the use of epoxidized soya bean oil as a glyceride for the prevention of wet-foaming has been excluded from both Claim 1 and Claim 9. Such a disclaimer is acceptable in view of the disclosure of D6 (Articles 123(2) and (3) EPC).

Novelty

8. As pointed out above (point 5.2), the disclosure of D6 is not restricted to epoxidized soya bean oil and the generic definition "soya bean oil derived plasticizers" only requires that the skilled person can recognize the plasticizer actually used to have soya bean oil as one of its original components. Therefore, it is at least questionable whether the present restricted definition of the glyceride, excluding only epoxidized soya bean oil, is sufficient to render the claimed subject-matter novel. However, even if the novelty of the first auxiliary request were to be accepted, this would raise the issue of inventive step.

Closest document

9. The patent in suit concerns the treatment of aqueous suspensions of vinyl chloride polymers. The treatment of aqueous polyvinyl chloride suspensions is disclosed in D1, D3 as well as D6. In order to determine which one of those documents is the closest prior art, it is first necessary to examine their various teachings.
 - 9.1 The contents of D6 have been discussed above (point 4). The object of D6 is to prevent the formation of excessive foam (first column, second paragraph) in polyvinyl chloride suspensions when removing the residual vinyl chloride monomer by stripping without the significant and unacceptable deterioration of the volume resistivity of the resulting polymer which occurs when commercial anti-foam agents are used (first column, second and third paragraphs).

The general teaching of D6 is to use as anti-foam agents materials which are conventional plasticizers for vinyl chloride polymers and to add these agents during, or optionally in part before, stripping, preferably in the form of an aqueous dispersion stabilised by at least one partially hydrolysed polyvinyl acetate and/or at least one cellulose derivative, the former one serving at the same time as a wetting agent for the polyvinyl chloride and thus assisting in the prevention of foam formation during stripping.

9.2 D1 describes a process for the suspension polymerisation of vinyl chloride at high conversion rates by means of a catalyst which is soluble in the monomer and in the presence of water soluble suspension stabilisers and an ester of an aliphatic polyhydric alcohol and an unsaturated fatty acid, preferably an unsaturated monoglyceride, the acid component having 12 to 20 carbon atoms and at least one double bond as well as a hydroxylic group (Claim 1). This method is said to overcome the problem of the formation of fish-eyes during processing of polyvinyl chloride which has been prepared at high conversion rates (column 1, line 13 to column 2, line 26).

9.2.1 According to an alternative embodiment (column 3, lines 31 to 34), the monoglyceride can also be added after the polymerisation has been going on for some time, or in portions.

- 9.2.2 In the sole example 190 parts by weight water, 0.4 parts per weight polyvinyl alcohol, 0.5 parts per weight isobutyl naphthalene sulphonic acid sodium, 0.3 parts per weight lauroyl peroxide, 0.12 parts per weight glycerol monoricinoleate and 100 parts per weight vinyl chloride are added to a stirred autoclave and polymerised at 54°C.
- 9.2.3 Although the general teaching of D1 refers to the addition of an ester as described above (point 9.2) in order to prevent the formation of fish-eyes, the document also contains a clear instruction to use monoglycerides of unsaturated fatty acids as the ester, so as to prevent foam formation at the recovery stage during filtration and monomer removal (column 3, lines 1 to 6).
- 9.3 D3 describes a commercial anti-foaming agent to be used with the manufacture, recovery and processing of polymer emulsions, DEHYDRAN® P 10 (Table on page 2). This product, which comprises a mixture of special fat derivatives in a vegetable oil, free of silicones, as its essential components, is stable enough to be kept for at least one year.
- 9.3.1 According to D2, this product contains 6.5 wt.% glycerol monostearate, 2.5 wt.% of a reaction product of 5 mol of ethylene oxide with 1 mol of a mixture of cetyl/oleyl alcohol, and 91 wt.% refined peanut oil. DEHYDRAN® P 10 forms an emulsion with water, which is sufficiently stable for immediate use. No mention is made of the presence of PVA in such an emulsion.

9.3.2 The object of D3 is the prevention of foam formation during the removal of residual monomers from emulsion and suspension polymerised vinyl chloride polymers (page 5, first paragraph of the Chapter about DEHYDRAN® P 10). No mention is made regarding the polymer properties after such treatment, in particular about the volume resistivity.

10. According to the patent specification, the object of the patent in suit is to provide a method to inhibit wet-foaming as well as dry-foaming of aqueous suspensions of polyvinyl chloride produced by suspension polymerisation and containing vinyl chloride monomer without deterioration of the polymer properties that would occur due to the presence of anti-wet-foaming agents, in particular the heat stability, volume resistivity and powder flow (column 2, lines 6 to 14; lines 30 to 39; lines 40 to 44; column 3, line 62 to column 4, line 3). Also, the use of an aqueous emulsion for these purposes is aimed at (column 4, lines 45 to 57).

From the above analysis of the documents it is clear that, whereas D1 is mainly directed to the avoidance of fish-eye formation, both D3 and D6 refer to the prevention of foaming. However, only D6 also mentions the volume resistivity of the polymer, so that it is the only document that addresses the various aspects of the object of the patent in suit. For that reason, the Board considers D6 to be an appropriate starting point for assessing the issue of inventive step.

Problem and solution

11. According to D6, the addition of materials which are conventional plasticizers for vinyl chloride polymers as anti-foam agents during, or optionally in part before, stripping, preferably in the form of an aqueous dispersion stabilised by at least one partially hydrolysed polyvinyl acetate and/or at least one cellulose derivative, the former one serving at the same time as a wetting agent for the polyvinyl chloride and thus assisting in the prevention of foam formation during stripping, results in vinyl chloride polymers having a high volume resistivity. Lower limits of 50 and 80×10^{12} ohm cm are said to be preferred (paragraph bridging both columns).

11.1 According to the patent in suit, one or more of the properties, e.g. the volume resistivity, powder flow and heat resistance, of the polymers treated according to the claimed method are not adversely affected by that treatment, contrary to treatments with commercial anti-foam agents. This is confirmed by the examples in the patent specification, in which the values for the volume resistivity would have to be corrected by an obvious, omitted factor, and the additional examples filed on 13 September 1990 during the proceedings before the first instance.

11.2 However, the use of commercial anti-foam agents does not represent the closest state of the art, so that that comparison is not appropriate. Regarding the correct starting point, D6, no comparative experiment

based on the information of that document is present either in the patent in suit or as an additional example, so that no conclusions can be drawn regarding any improvement of the method disclosed in D6.

- 11.3 Therefore, the technical problem underlying the patent in suit as defined above (point 10) needs to be reformulated in less ambitious terms. In the light of the disclosure of D6 and the present patent specification, the Board sees the technical problem underlying the patent in suit as to define a further method for the prevention of wet-foam and dry-foam formation without deterioration of the properties of the vinyl chloride polymer, that is, to find an alternative to the method described in D6.
- 11.4 According to the patent in suit, that problem is to be solved by adding to an aqueous polyvinyl chloride suspension an oil-in-water emulsion of a glyceride, which emulsion contains at least part of the agent used to inhibit dry-foaming, as defined in Claims 1 and 9.
- 11.5 The examples in the patent specification as well as the additional examples filed during the first instance proceedings provide evidence that the above-defined problem is effectively solved. In particular, it has been shown that by the process according to Claim 1 the formation of both wet-foam and dry-foam has been effectively inhibited without any deterioration of the volume resistivity, thermal stability and powder flow of the polyvinyl chloride thus treated.

Obviousness

12. It remains to be decided whether the claimed subject-matter is obvious having regard to the documents on file.

12.1 In D1 it is taught that the use of esters of an aliphatic polyhydric alcohol and an unsaturated fatty acid, preferably an unsaturated monoglyceride, the acid component having 12 to 20 carbon atoms and at least one double bond as well as a hydroxylic group, inhibits fish-eye formation during polyvinyl chloride processing. Monoglycerides of unsaturated fatty acids are especially advantageous since they also almost completely prevent foam forming at the recovery stage during filtration and monomer removal (column 3, lines 1 to 6); glycerol monoricinoleate is exemplified (Example 1).

12.2 This teaching provides a clear incentive to use such monoglycerides with the aim of foam prevention besides the avoidance of fish-eyes. Therefore, the skilled person, when confronted with the problem of finding a method as an alternative to that described in D6, in particular in view of the suggested use of soya bean oil derivatives, would not hesitate to apply that teaching to the method of D6 so as to arrive at the claimed subject-matter.

12.3 In view of the above, the first auxiliary request does not involve an inventive step and hence it has to be rejected.

Second auxiliary request

Wording of the claims

13. The second auxiliary request differs from the main request in that the acid component of the glyceride of is restricted to an optionally substituted unsaturated carboxylic acid having 6 to 20 carbon atoms. That restriction is acceptable under Articles 123(2) and (3) EPC.

Novelty

14. According to the Respondent, the limitation to unsaturated carboxylic acids rendered the claimed subject-matter novel since it excluded the epoxidized soya bean oil disclosed in D6.

However, the notion of "unsaturated" in principle also covers the residual unsaturation present in such epoxidized products. Thus, that restriction does not clearly exclude epoxidized soya bean oil. Moreover, as pointed out above (point 4.2), D6 does not only disclose that one specific component, but more broadly refers to soya bean oil derived plasticizers, which include unsaturated compounds. Therefore, like for the first auxiliary request, it is at least questionable whether the present limitation of the glyceride is sufficient to render the claimed subject-matter novel.

Inventive step

15. However, as was the case with the first auxiliary request, even if novelty were to be accepted, no

inventive step can be acknowledged.

16. Regarding the latter, the same arguments as for the first auxiliary request apply. In particular, for the reasons given in points 9 and 10 above, D6 is considered to be the closest document and the problem to be solved is to define a further method for prevention of wet-foam and dry-foam formation without deterioration of the properties of the vinyl chloride polymer. Likewise, that problem is considered to be solved by the method defined in the claimed subject-matter.

17. Since D1 contains a clear incentive to use monoglycerides of unsaturated fatty acids and glycerol monoricinoleate is exemplified (see point 9.2.3 above), the skilled person, when confronted with the problem of finding an alternative method to that described in D6, in which the use of soya bean oil derivatives is clearly mentioned, would not hesitate to apply that teaching to the method of D6 so as to arrive at the claimed subject-matter.

18. Therefore, the second auxiliary request, like the first one, does not involve an inventive step so that it has to be rejected.

Third auxiliary request

Wording of the claims

19. The third auxiliary request differs from the main request in that the glyceride is restricted to monoglyceride of an optionally substituted unsaturated

carboxylic acid having 6 to 10 carbon atoms. That restriction is, in view of the disclosure in column 3, lines 1 to 2, acceptable both under Articles 123(2) and (3) EPC.

Novelty

20. D6 discloses soya bean oil derived plasticizers, which are based upon triglycerides. Hence the claimed subject-matter is novel.

Inventive step

21. However, regarding the presence of an inventive step, the same arguments as for the first and second auxiliary requests apply. In particular, the Board considers the explicit disclosure to use monoglycerides of fatty acids, such as glycerol monoricinoleate, for foam prevention as a clear incentive to use monoglycerides such as now defined in the claimed subject-matter. The skilled person would not hesitate to apply that teaching to the method of D6 so as to arrive at the subject-matter of the third auxiliary request.
22. Therefore, the subject-matter of the third auxiliary request does not involve an inventive step and, as a consequence, this request has to be rejected.
23. For the above reasons, the claimed subject-matter of all requests is not allowable and the patent has to be revoked.

Order

For these reasons it is decided that:

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

The Registrar:

The Chairman:

E. Görgmaier

C. Gérardin