

**Internal distribution code:**

- (A) [ ] Publication in OJ  
(B) [ ] To Chairmen and Members  
(C) [X] To Chairmen

**D E C I S I O N**  
of 29 January 1997

**Case Number:** T 0207/93 - 3.3.3

**Application Number:** 85300181.6

**Publication Number:** 0150933

**IPC:** C08F 6/00

**Language of the proceedings:** EN

**Title of invention:**

A process for the production of polymers and aqueous solutions thereof

**Patentee:**

ALLIED COLLOIDS LIMITED

**Opponent:**

SNF Floerger  
Chemische Fabrick Stockhausen GmbH

**Headword:**

-

**Relevant legal provisions:**

EPC Art. 54, 56  
R. 55(c)

**Keyword:**

"Admissibility of appeal (yes) - opposition against entire patent from the beginning"  
"Novelty (yes) - claimed properties not clearly and unambiguously disclosed"  
"Inventive step (yes) - no incentive"

**Decisions cited:**

T 0219/83, T 0376/90, G 0009/91

**Catchword:**

-



Europäisches  
Patentamt

European  
Patent Office

Office européen  
des brevets

Beschwerdekammern

Boards of Appeal

Chambres de recours

Case Number: T 0207/93 - 3.3.3

**D E C I S I O N**  
of the Technical Board of Appeal 3.3.3  
of 29 January 1997

**Appellant:**  
(Opponent 1)

SNF Floerger  
41, Rue Jean-Huss  
F-42028 Saint-Etienne Cedex (FR)

**Representative:**

Maiwald, Walter, Dr. Dipl. -Chem.  
Maiwald & Partner  
Poccistrasse 11  
D-80336 München (DE)

**Other party:**  
(Opponent 2)

Chemische Fabrik Stockhausen GmbH  
Patentabteilung  
Bäckerpfad 25  
D-47705 Krefeld (DE)

**Representative:**

Klöpsch, Gerald, Dr. -Ing.  
Patentanwalt  
An Gross St. Martin 6  
D-50667 Köln (DE)

**Respondent:**  
(Proprietor of the patent)

ALLIED COLLOIDS LIMITED  
P.O. Box 33  
Low Moor  
Bradford, West Yorkshire BD12 OJZ (GB)

**Representative:**

Lawrence, Peter Robin Broughton  
Gill Jennings & Every  
Broadgate House  
7 Eldon Street  
London EC2M 7LH (GB)

**Decision under appeal:**

Interlocutory decision of the Opposition Division  
of the European Patent Office posted  
23 December 1992 concerning maintenance of  
European patent No. 0 150 933 in amended form.

**Composition of the Board:**

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

## Summary of Facts and Submissions

- I. Mention of the grant of European patent No. 0 150 933 in respect of European patent application No. 85 300 181.6, filed on 10 January 1985, claiming priority from an earlier application in Great Britain (8401206 of 17 January 1984), was announced on 26 July 1989, on the basis of twelve claims, Claim 1 reading:

"A process in which a stable, water dispersable, substantially anhydrous dispersion of water soluble or water-swellaable polymer particles in water-immiscible liquid is made by polymerising aqueous polymerisable monomer dispersed in water-immiscible liquid by reverse phase suspension polymerisation to form a dispersion of aqueous polymer dispersed in water-immiscible liquid, dehydrating this dispersion and, after the dehydration, adding a surfactant that has HLB at least 7, characterised in that the surfactant having HLB at least 7 is an oil soluble surfactant that has a solubility at 20°C in the water-immiscible liquid of at least 1 part per 9 parts by weight of the liquid and that has a lower solubility in water and that will promote distribution of the dehydrated dispersion into water."

Claims 2 to 9 were dependent and referred to preferred embodiments of the process of Claim 1.

Independent Claim 10 referred to:

"A water dispersable, stable, substantially anhydrous dispersion of water soluble or water swellaable polymer particles dispersed in water immiscible liquid wherein the particles have a size of below 5 microns, the dispersion includes 0 to 2% by weight, based on the

weight of dispersion, of a water in oil emulsifier having HLB below 7, 0.01 to 15% by weight of a polymeric polymerisation stabiliser and 0.1 to less than 3% by weight of an oil soluble surfactant that has a solubility in the water immiscible liquid of at least 1 part in 9 parts of the liquid, and that has a lower solubility in water and that has HLB at least 7 and that will promote dispersion of the dehydrated dispersion into water."

Claims 11 and 12 were dependent and referred to a preferred embodiment of the dispersion of Claim 10.

II. On 6 April 1990 and 21 April 1990 respectively, two Notices of Opposition were filed and revocation of the granted patent in its entirety was requested under Articles 100(a) and 100(c) EPC (the latter ground was later withdrawn) by Opponent 1, and under Article 100(a) EPC by Opponent 2. These objections were essentially based upon the following documents:

D1: US-A-4 299 755,

D2: US-A-4 052 353 and

D11: "Synperonic NP" (ICI), pages 1 to 6, not dated, which was filed after the nine months opposition period.

III. By an interlocutory decision delivered orally on 8 December 1992 and issued in writing on 23 December 1992, 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 filed as main request on 8 December 1992, Claim 1 reading as follows:

"A process in which a stable, water dispersable, substantially anhydrous dispersion of water soluble or water swellable polymer particles in water-immiscible liquid is made by polymerising aqueous polymerisable monomer dispersed in water-immiscible liquid by reverse phase suspension polymerisation to form a dispersion of aqueous polymer dispersed in water-immiscible liquid, dehydrating this dispersion and, after the dehydration, adding a surfactant that has HLB at least 7, characterised in that the surfactant having HLB at least 7 is an oil soluble surfactant that is added in an amount of below 5 % by weight of the dehydrated dispersion and that has a solubility at 20°C in the water-immiscible liquid of at least 1 part per 9 parts by weight of the liquid and that has a lower solubility in water and that will promote distribution of the dehydrated dispersion into water."

Claims 2 to 12 remained as granted.

The Opposition Division held, in essence, that:

- (a) Both D1 and D2 described the addition of a water-soluble surfactant having high hydrophile-lipophile balance or HLB (also called "activator") to non-aqueous dispersions of water-soluble polymers in a dispersing oil. However, these documents, contrary to the opposed patent, referred to reverse emulsion polymerisation and not to reverse suspension polymerisation, as could be seen from the amounts of emulsifier used for the polymerisation. The differences between those two polymerisation systems, as described in the contested patent, were accepted. Moreover, there was no convincing evidence that the disclosed activators actually

had the specific oil- and water-solubility properties now being required, as alleged by the Opponents but denied by the Proprietor. As none of the other documents cited during the proceedings disclosed the combination of the specific requirements of present Claims 1 or 10 either, the claimed subject-matter was novel.

- (b) With respect to the presence of an inventive step, D1 was considered to be the closest document since it had most elements in common with the patent in suit. The problem of the patent was seen as the reduction of instability of water-in-oil or W/O dispersions, reduction of the amount of water-soluble surfactants used in such dispersions and reduction of the presence of emulsifiers in waste water. For the solution of that problem four selections had had to be made: the use of reverse phase suspension polymerisation, dehydration of the thus obtained polymer dispersion followed by the addition of a high HLB surfactant, and the selection of a surfactant having adequate solubility properties.

None of the cited documents referred to the third aspect of the above-identified problem, the amount of surfactant in waste-water. Moreover, all documents describing the dissolution of a W/O polymer dispersion in water referred to the addition of a water-soluble high HLB surfactant. In none of the documents the oil-solubility of those compounds was mentioned and there was no suggestion to link the problem to be solved to the selections necessary to arrive at the now claimed subject-matter. Hence an inventive step was present.

IV. On 26 February 1993 the Appellant (Opponent 1) lodged an appeal against the above decision and paid the prescribed fee on the same day. The Statement of Grounds of Appeal was filed on 29 April 1993.

V. The Appellant argued essentially as follows:

(a) As regards novelty, the process of present Claim 1 was not limited to suspension polymerisation, but also included emulsion polymerisation. Although in the examples of D1 only water-soluble surfactants were used as activators, the description also mentioned nonyl phenol having about 7 ethylene oxide units, which, according to the information contained in D11, was both water- and oil-soluble. Even if the solubility properties were not expressly mentioned in D1, the skilled man knew those by the structure of the compounds, in particular by the length of the ethoxy chains. As the amount of activator overlapped with the range disclosed in D1, no novelty was present over D1.

(b) Regarding inventive step, D1 was considered to be the closest document because it described the polymerisation of water-soluble monomers in reverse phase to form a W/O dispersion, which was dehydrated and then treated with a surfactant to promote dissolution in water. As D1 disclosed the use of activators which were both water- and oil-soluble and D2 also disclosed the use of an activator having a high HLB, the subject-matter of present Claim 1 was obvious over D1 taken alone as well as in combination with D2, together with D11.

The dispersion claimed in Claim 10 was also not inventive because D1 disclosed an activator that could be oil-soluble. The amount of activator as now claimed was nothing but a random choice or extrapolation of the amounts mentioned in D1. The polymer particle size required by Claim 10 could be learned from D2, so that the combination of D1 with D2 and/or D11 rendered the subject-matter of Claim 10 obvious.

- (c) The Appellant, while basically relying on the teaching of D1, D2 and D11 to support his obviousness objection, also referred to a number of other documents on file (D3: GB-A-1 482 515, D5: US-A-4 021 399 and D12: DE-A-2 419 764) showing that elements of the presently claimed process were known; in particular D12 disclosed the use of e.g. nonyl phenols with 8 ethylene oxide units, which had an HLB of 12.5, as wetting agents.

VI. Together with the Counterstatement of Appeal the Respondent (Proprietor) indicated the basis for three auxiliary requests and argued essentially as follows:

- (a) The appeal of Opponent 1 was not admissible as regards Claims 10 to 12 since these claims had not been specifically attacked during the opposition proceedings.
- (b) The invention achieved its object of reducing the total amount of emulsifier used by a number of measures: polymerising by reverse suspension polymerisation, then dehydrating the obtained



dispersion, and thereafter adding a surfactant having a HLB of 7 or more and being relatively oil-soluble and water-insoluble, in an amount of less than 5% by weight of the dehydrated polymer dispersion.

- (c) As regards novelty, the subject-matter under attack referred to reverse phase suspension polymerisation, thus excluding emulsion polymerisation, so that D1 differed from the opposed patent already in that respect. The difference between the two techniques was well-known in the art and, moreover, acknowledged in the description.
- (d) D11 merely listed a number of surfactants having different solubility properties and there was no reason to select any particular one from those mentioned to use in a particular process. None of the documents cited in the proceedings, taken alone or in combination, disclosed the use of the amount of specific compounds as now required, nor the advantages of that use. Therefore, the claimed subject-matter was both novel and inventive.
- (e) In order to illustrate that a skilled person was well aware of the differences between suspension and emulsion polymerisation processes, the Respondent referred to a new document not yet in the proceedings.
- (f) As auxiliary requests, three further sets of claims were also added.

VII. Opponent 2, who had not lodged an appeal, did not take an active part in the proceedings; in particular, he did not file any statement in reaction to the submissions of the Respondent.

VIII. The Appellant requested that the decision under appeal 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 one of the auxiliary requests filed on 17 November 1993.

### Reasons for the Decision

#### *Admissibility of the appeal*

1. The Appellant (then Opponent 1) filed its opposition by means of EPO form 2300 and, by ticking off the appropriate box under No.V., indicated that the opposition was filed against the patent as a whole. Although in the reasoned statement for opposition explicit reference was only made to Claims 1, 2, 3, 4, 8 and 9, from the Appellant's arguments it is clear that the principally attacked feature was the use of an oil-soluble surfactant having a high HLB as activator, which feature is present in both independent Claims 1 and 10. Since the opposition not only contained an explicit statement as to the extent of the opposition, but the arguments also clearly referred to the subject-matter of the two independent claims of the opposed patent, there can be no doubt that the opposition, right from the beginning, did affect the patent in its entirety and that the requirements of Rule 55c) were fulfilled (See also decision T 376/90, OJ EPO 1994, 906.) Therefore, any attack on Claims 10

to 12 cannot be considered to be an extension of the scope of opposition filed after the expiry of the nine months period for filing an opposition, and thus inadmissible in the light of G 9/91 (OJ EPO 1993, 408).

For these reasons the Board considers the appeal to be admissible in its entirety.

*Late filed documents*

2. A number of documents were filed after the nine months opposition period. As the Opposition Division took them into full consideration and the Respondent did not protest against that fact and also has had full opportunity to comment upon those documents, the Board sees no reason to exclude those documents from the appeal proceedings.

The further document to which the Respondent in its letter of 17 November 1993 referred (see point VI(e) above), has been duly examined by the Board, but did not appear to be any more relevant than the documents already on file, and is therefore disregarded pursuant to Article 114(2) EPC.

*Amendments*

3. As can be seen from points I and III above, Claim 1 of the main request differs from the one as granted in the feature that the oil-soluble surfactant having HLB of at least 7 is added in an amount of below 5 % by weight of the dehydrated dispersion. This feature is disclosed on page 9, line 16, of the application as originally filed (column 6, lines 5 to 8 of the patent specification), so that Article 123(2) EPC is complied with.

Since the addition of that further feature does not extend the scope of protection of the claims as granted, the requirements of Article 123(3) EPC are also fulfilled.

*Novelty*

4. The novelty discussion, which referred to the subject-matter of Claim 1 only, focused mainly on two points, namely emulsion vs. suspension polymerisation and the solubility requirements of the activator.
- 4.1 The Respondent stated that D1, in view of the amounts of emulsifier used, referred to emulsion polymerisation and not to suspension polymerisation. This has not been contested by the Appellant, who however argued that the present wording of Claim 1 did not restrict the claimed process to suspension polymerisation, but that it also included emulsion polymerisation.
- 4.1.1 Claim 1 explicitly refers to reverse suspension polymerisation. According to the patent specification (column 1, lines 47 to column 2, line 5), in reverse phase suspension polymerisation none or only a small amount of water-in-oil emulsifier (having a low HLB) is used, whereas in reverse phase emulsion polymerisation low HLB emulsifiers are used in a concentration sufficient so as to form micelles (column 1, lines 31 to 46). As a consequence, emulsion polymerisation results in polymer particles that are much smaller than those formed by suspension polymerisation. This is in line with the general knowledge in this technical field, as illustrated by e.g. Winnacker-Küchler, *Organische Technologie II*, fourth edition, volume 6,

pages 328 to 331 (on file as D18), in particular Chapters 2.2.4, 2.2.4.1 and 2.2.4.2. From that document it is clear that the differences between suspension and emulsion polymerisation are not only well-known in the art, but are also correctly reproduced in the description of the contested patent.

4.1.2 In view of the above, the Board concludes that present Claim 1, by its explicit reference to reverse phase suspension polymerisation, does not include emulsion polymerisation processes.

4.2 From the wording of Claims 1 and 10 of the opposed patent it is clear that the selection of the solubility properties of the activator is an essential feature of the claimed subject-matter. Those properties, as required by both claims, are: HLB of at least 7 and a solubility in the water-immiscible reaction liquid of at least 1 part per 9 parts by weight at 20°C, the solubility in water being less.

4.2.1 Surfactants contain both lipophilic and hydrophilic groups and may be classified by their "Hydrophile-Lipophile Balance" (HLB) (see e.g. "Das Atlas HLB System", 1963, pages 2 to 6, on file as D13, and D11, page 1, column 1), according to which a low HLB indicates that the surfactant is lipophilic and a high HLB that it is hydrophilic. Although it is clear that lipophilic (low HLB) surfactants have less affinity with water than hydrophilic (high HLB) ones, the exact solubility behaviour cannot be predicted by the HLB (See D13, page 4, left column, third paragraph).

In the present claims, although on the one hand the lower limit of 7 for the HLB indicates that the activator should be hydrophilic, on the other hand it must also be oil-soluble, hence lipophilic. By the requirement that the water-solubility should be less than the oil-solubility, it is indicated that the lipophilic properties should prevail. The Appellant argued that those features were disclosed by D1.

- 4.2.2 D1 describes non-aqueous dispersions of water-soluble polymers consisting of (a) 45-60 parts by weight of a water-soluble polymer prepared by the addition polymerisation of an unsaturated water-soluble monomer; (b) 25-45 parts by weight of a dispersing oil which is a liquid aliphatic or aromatic hydrocarbon, a substitution product thereof or a mixture thereof; (c) 3-8 parts by weight of a member selected from the group consisting of sorbitan monooleate, sorbitan stearate, sorbitan laurate and sorbitan palmitate; and (d) 3-8 parts by weight of the reaction product of 3 to 10 mol of ethylene oxide and 1 mol of a member selected from the group consisting of C<sub>8</sub>-C<sub>20</sub> fatty alcohols and C<sub>10</sub>-C<sub>20</sub> fatty acids, the sum of components (a) to (d) being 100 parts by weight (Claim 1). According to the description, column 5, lines 11 to 15, in order to improve the solubility of the polymer dispersion in water, water-soluble wetting agents could also be added after dehydration of the polymer dispersion (see also the examples). Such possible wetting agents are ethoxylated alkyl or aralkyl phenols having 8 to 20 carbon atoms in the alkyl or aralkyl group, e.g. nonyl phenols having polyether chains of 7 to 20 ethylene oxide units, or e.g. reaction products of fatty alcohols having 8 to 20 carbon atoms and 11 to 50 ethylene oxide units (column 3, lines 55 to 62).

4.2.3 According to the Appellant (Statement of Grounds of Appeal, page 5, point II, 2nd paragraph), the explicitly mentioned nonyl phenol having 7 ethylene oxide units has not only a HLB of 11.7, but is also both water- and oil-soluble. For support of that statement, the Appellant referred to D11, page 6, "Solubility Guide for Synperonic Surfactants", where, allegedly, that compound was indicated as such.

However, the Board cannot find any such statement in D11. On the contrary, according to the "Solubility Guide" (page 6, second table), nonyl phenol with 7 ethylene oxide units is both water- and mineral oil-insoluble and vegetable oil-soluble. According to the "Application Guide" (page 6, third table), it is oil-soluble. According to D1 again, the wetting agents should be water-soluble (column 3, line 51; column 5, line 12), thus implying that nonyl phenol with 7 ethylene oxide units is water-soluble. It must therefore be concluded that the exact solubility properties of that compound do not appear from the cited documents.

4.2.4 On the other hand, a condensate of nonyl phenol with about 5.5 moles ethylene oxide is, according to the patent in suit, column 6, lines 36 to 38, a particularly suitable activator. With its shorter ethoxy chain, it is bound to be more lipophilic than nonyl phenol with 7 ethylene oxide units. Therefore, it is at least questionable whether the latter compound would still fulfil the now claimed requirements, in particular whether its oil-solubility would prevail over its water-solubility.

4.2.5 In a situation such as the present one, where there are contrary assertions from the parties and where the documents provide no clear information, it is up to the Appellant, who, as the Opponent has the onus of proof (T 219/83, OJ EPO 1986, 211 and 328, Reasons, point 12), to prove that the solubility properties of nonyl phenol with 7 ethylene oxide units fall within the terms of Claim 1. However, no such evidence has been provided. Therefore, the Board concludes that the use of an activator having the now required solubility properties cannot be clearly and unambiguously derived from D1.

5. For the above reasons, the Board is satisfied that the subject-matter of Claim 1 is novel. As regards Claim 10, its novelty has not been challenged and the Board sees no reason to decide otherwise.

*Inventive step*

6. The patent in suit concerns a process for the production of polymers and aqueous solution thereof.

6.1 As stated above, such a process is disclosed in D1, which the Board, like the Opposition Division, regards as the closest state of the art. According to Examples 1 and 2 of D1, 400 g of a monomer mixture (280 g acrylamide and 120 g dimethylaminoethyl methacrylate according to comparative Example 1, column 5, lines 42 to 43), 400 g C<sub>12</sub>-C<sub>18</sub> paraffin mixture, 40 g sorbitan monooleate and either 40 g ethoxylate of oleic acid with 6 mol of ethylene oxide or 40 g ethoxylate of lauryl alcohol with 3 mol of ethylene oxide were present in the polymerisation mixture. After polymerisation, the dispersion is dehydrated and ethoxylated nonyl phenol with 10 mol of ethylene oxide per mol of nonyl phenol is added.



6.2 As explained above (point 4) that process differs from the subject-matter of Claim 1 in that it is an emulsion polymerisation process and, in the activator used.

6.3 Present Claim 10 refers to a polymer dispersion, so that a restriction to emulsion polymerisation does not directly apply. However, although the upper limit given for the polymer particle size also includes the small particles produced by emulsion polymerisation, the upper limits given for the amounts of surfactants that may be present in the dispersion, distinguish this claim from the prior art dispersions. In this respect, by the different amounts indicated in the claims and by the reference in the patent specification (column 1, lines 63 to 65) to GB-A-1 482 515 (on file as D3), the Board understands that the "polymeric polymerisation stabiliser" must be regarded as a compound different from the surfactants also present in the dispersion.

Apart from the fact that D1 does not disclose the solubility properties of the activator (see point 4.2 above), the polymer dispersion resulting from the process of D1, Examples 1 and 2, also differs from the subject-matter of present Claim 10 in the amount of surfactants present. In particular, the amounts of both surfactants having HLB below 7 and at least 7, respectively, are much higher than the amounts allowed by Claim 10. Also, D1 does not mention the presence of a polymeric polymerisation stabiliser.

6.4 Although the dehydrated polymer dispersions of D1 are said to be stable, to have a high solids content and to be able to be rapidly dissolved in water without forming lumps (column 1, lines 5 to 8), their preparation not only involves the use of large amounts

of surfactants during polymerisation, but also the use of large amounts of water-soluble high HLB surfactants as wetting agents or activators, which, of necessity, end up in the aqueous phase and thus remain with the dissolved polymer.

- 6.4.1 In view of this, the technical problem underlying the patent in suit, in line with column 3, lines 27 to 38, of the patent specification, may be seen in providing a polymer dispersion that not only readily dissolves in water, but which also, upon dissolution in water, results in an aqueous system that does not contain large amounts of surfactants.
- 6.4.2 According to the patent in suit this problem is solved by applying reverse suspension polymerisation and, after dehydration of the thus obtained polymer dispersion, using a specific high HLB surfactant as activator, as indicated in Claims 1 and 10.
- 6.4.3 The examples and comparisons with the prior art in the patent (column 7, line 25 to column 8, line 54), as well as the experiments reported in the Respondent's (then Applicant) letter dated 2 June 1988, show that the various aspects of the above-defined problem are effectively solved. In particular, it has been shown that the distinguishing features of the patent in suit, the presence of low amounts of surfactants during reverse suspension polymerisation and the use of an activator with specific solubility properties, lead to satisfactory polymer dispersions.
7. The issue to be decided, therefore, is whether the claimed subject-matter is obvious having regard to all documents on file.

7.1 D2 describes a self water dissolving composition of a water-soluble polymer dispersed in oil which is stable to polymer coagulation and agglomeration, comprising (a) a water-soluble polymer dispersed in oil, said polymer having a water content at which the polymer remains finely divided and dispersed in the oil, said water content being less than 40%, by weight, based on polymer and water, said water-soluble polymer dispersed in oil having been prepared from a water in oil emulsion of said water-soluble polymer by reduction of the water content thereof; and (b) a water-soluble surfactant, having an HLB number of above 8 in an amount effective to render the water-soluble polymer self dissolving in water (Claim 1). In Example 1 reference is made to the polymerisation process of US-A-3 284 393 (on file as D15), in which large amounts of surfactant are present during polymerisation and which hence is an emulsion polymerisation process (see point 4.1 above); after drying of the polymer dispersion, a surfactant of the polyethylene oxide condensate type is added (column 9, lines 29 to 31), but no further details regarding that surfactant, in particular about the solubility properties, are given. Therefore, like D1, the disclosure of D2 differs from the subject-matter of present Claim 1 in that it concerns an emulsion polymerisation process and in the activator used, and from the subject-matter of present Claim 10 in the amount of surfactants present, in the activator and in the absence of a polymeric polymerisation stabiliser.

7.2 D11 is an information leaflet giving an overview of the properties of nonylphenol ethoxylate surfactants. The solubility properties of various such compounds are indicated by way of HLB, solubility in several solvents and a general classification in application categories. The surfactants are said to be "effective multi-purpose and versatile" (page 1, left-hand column, paragraph 3).

Although according to the table "Application Guide by Product" on page 6, the surfactants NP20 to NP50 would be suitable in emulsion polymerisation, the table "Solubility Guide" on page 6 shows that ethoxylates of such grades are in fact insoluble in mineral oil, kerosene and vegetable oil. In addition to the fact that D11 is silent about the suitability of such emulsifiers in reverse suspension polymerisation, it would point at a category of compounds that does not fulfil the now required solubility conditions. For both reasons D11 cannot lead the skilled person to the claimed subject-matter.

7.3 The Appellant based its obviousness arguments on D1 taken alone or in combination with D2 and/or D11. Although the contents of D3, D5 and D12 were also discussed to some extent, no conclusions concerning their relevance were drawn. In that respect, it is to be noted that the remark about the exact solubility properties of nonyl phenol with 7 ethylene oxide units (see point 4.2.4 above) applies even stronger for the nonyl phenols with more than 8 ethylene oxide units disclosed in D12. Regarding the other documents cited during the proceedings, those were only mentioned by referring generally to the previously filed submissions and they are all more remote than D1 and D2. Therefore, neither D1 nor D2 or D11, nor any of the other documents on file, taken alone or in combination, suggests the use of the specific high HLB surfactant as activator in a reverse phase suspension polymerisation system as now claimed.

7.4 On the contrary, apart from the differences between emulsion and suspension polymerisation, whereas there is no doubt that D1 and D2 disclose the addition of high HLB surfactants as activators, the only reference to the solubility properties of those compounds is their water-solubility; nothing is said about

oil-solubility. In view of D13, page 4, second column, lines 3 to 7 ("Mit anderen Worten, Sie verwenden einen wasserlöslichen Emulgator, wenn Ihr Endprodukt wasserverdünnbar sein soll. Für diesen Zweck würden Sie bestimmt kein öllösliches Emulgatorsystem verwenden."), the skilled person would not be inclined to use an oil-soluble surfactant as activator. It is the recognition that it is possible to use such a compound at all, albeit only in reverse phase suspension polymerisation systems, as explained in column 3, lines 27 to 38 of the contested patent, which constitutes the Respondent's technical contribution to the art.

- 7.5 In view of the above, the Board concludes that the process of Claim 1 and the product of Claim 10 are inventive.
8. As Claims 1 and 10 of the main request are allowable, the same goes for dependent Claims 2 to 9 and 11 and 12, which are directed to preferred embodiments of the process according to Claim 1 and the product of Claim 10, respectively, and the patentability of which is supported by that of the independent claims to which they append.
9. Since the Respondent's main request is allowed, the auxiliary requests need not be considered.

Order

For these reasons it is decided that:

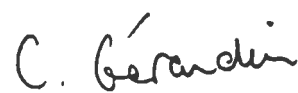
The appeal is dismissed.

The Registrar:



E. Görgmayer

The Chairman:



C. Gérardin