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Datasheet for the decision of 13 February 2014

Case Number: T 0817/11 - 3.3.03

Application Number: 00950897.9

Publication Number: 1204701

IPC: C08K3/00, C08J3/20, C09D7/00

Language of the proceedings: EN

Title of invention:
CURED COATINGS HAVING IMPROVED SCRATCH RESISTANCE AND COATED SUBSTRATES

Patent Proprietor:
PPG Industries Ohio, Inc.

Opponents:
Axalta Coating Systems Germany GmbH
NUPLEX RESINS BV
BASF Coatings GmbH

Headword:

Relevant legal provisions:
EPC Art. 83
RPBA Art. 13(1), 13(3)

Keyword:
Sufficiency of disclosure - main request (no)
Late-filed auxiliary requests - request clearly allowable (no)

Decisions cited:
T 1121/03, T 0369/05

Catchword:

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European Patent Office
Office européen des brevets

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Case Number: T 0817/11 - 3.3.03

D E C I S I O N
of Technical Board of Appeal 3.3.03
of 13 February 2014

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Decision under appeal: **Decision of the Opposition Division of the European Patent Office posted on 3 February 2011 revoking European patent No. 1204701 pursuant to Article 101(3)(b) EPC.**

Composition of the Board:

Chairman: B. ter Laan
Members: O. Dury
R. Cramer

Summary of Facts and Submissions

I. The appeal by the patent proprietor lies against the decision of the opposition division posted on 3 February 2011 revoking European patent No. EP 1 204 701, based on application No. 00 950 897.9.

II. The application as filed contained 139 claims, of which claims 1, 12, 27, 28, 35, 42, 43 and 46-48 read:

"1. A cured composition comprising a plurality of particles throughout the cured composition, wherein a concentration of particles within a surface region of the cured composition is greater than a concentration of particles within a bulk region of the cured composition."

"12. A cured composition according to claim 1, wherein the cured composition is formed from a coating composition formed from components comprising a plurality of particles."

"27. A cured composition according to claim 1, wherein at least one surface active agent is present during the formation of the coating composition."

"28. A cured composition according to claim 27, wherein the at least one surface active agent is selected from at least one polysiloxane and at least one fluoropolymer."

"35. A cured composition according to claim 1, wherein at least one reactant is present during the formation of the coating composition."

"42. A cured composition according to claim 35, wherein the cured compositions is formed from components comprising at least one film forming material."

"43. A cured composition according to claim 42, wherein the at least one film-forming material comprises at least one reactive functional group."

"46. A cured composition according to claim 28, wherein at least one reactant comprising at least one functional group that is reactive with at least one reactive functional group of the at least one polysiloxane is present during the formation of the coating composition."

"47. A cured composition according to claim 46, wherein the at least one reactant is selected from at least one film-forming material."

"48. A cured composition according to claim 47, wherein the at least one film-forming material is selected from a polymer, in addition to and different from said at least one polysiloxane, comprising at least one reactive functional group."

III. The granted patent was based on 57 claims of which claim 1 read (hereinafter additions as compared to claim 1 as originally filed are indicated in **bold**, deletions in ~~strikethrough~~):

"1. A cured **coating** ~~composition~~ comprising a plurality of particles throughout the **coating** ~~cured composition~~, wherein a concentration of particles within a surface region of the **coating** ~~cured composition~~ is greater than a concentration of particles within a bulk region of the **coating** ~~cured composition~~, **wherein the cured**

coating is formed from a curable coating composition comprising:

a) at least one film forming material having at least one reactive functional group;

b) a plurality of particles; and

c) at least one surface active agent."

IV. Three notices of opposition against the patent were filed in which the revocation of the patent in its entirety was requested on the grounds of Art. 100 (a) EPC (lack of novelty as well as lack of an inventive step; all opponents), Art. 100 (b) EPC (all opponents) and Art. 100(c) EPC (opponent 01).

V. During the opposition procedure the following documents were *inter alia* cited:

D8: Silicones in Coatings; Organosilicone Surfactants: Properties, Chemistry, Applications; W. Heilen; 2nd Conference in the Series: High Performance Coating Materials; 29th-31st January 1996; Paper 5; Brussels

D9: Pigments: An Introduction to their Physical Chemistry; D. Patterson; 1967; pages 196-203

D14: Nuplex test report (submitted by respondent 02)

D15: TEM picture (submitted by respondent 03)

D16: Declaration by D. Campbell (submitted by respondent 03)

VI. The decision under appeal was based on the patent as granted as the main request and on one auxiliary request. The opposition division held, *inter alia*, that the patent in suit contained no clear teaching how to obtain the claimed surface enrichment. Although the subject matter defined in the claims was very broad,

the examples of the patent in suit illustrated the use of only one single surface active agent and one single type of particle, which was insufficient to provide a technical concept fit for generalisation without undue burden. Also, example 1B of the patent, examples 2, 3 and 22 of the application as filed and the test report D14 showed that not all curable compositions containing components as specified in the claims exhibited surface enrichment upon curing. Therefore, neither the patent in suit nor the auxiliary request satisfied the requirements of Art. 83 EPC. The patent was revoked.

VII. On 6 April 2011, the patent proprietor (appellant) lodged an appeal against the above decision. The prescribed fee was paid on the same day. In its statement of grounds of appeal filed on 7 June 2011 the appellant requested that the decision of the opposition division be set aside and the case be remitted to the department of first instance for further prosecution on the basis of the main request (patent as granted) or on the basis of one of auxiliary requests 1 to 3 filed therewith. With letter of 20 June 2012 the appellant filed five auxiliary requests as replacement of all former auxiliary requests and submitted additional arguments.

VIII. With letter of 23 December 2011 respondent 01 (opponent 01) requested the dismissal of the appeal.

In their joined response dated 23 December 2011, respondents 02 and 03 (opponents 02 and 03, respectively) requested the dismissal of the appeal. An additional test report was also submitted.

IX. In a communication issued by the Board on 11 October 2013 accompanying the summons to oral

proceedings, issues to be discussed at the oral proceedings were specified. Regarding sufficiency of disclosure, it was *inter alia* pointed out that it appeared questionable if the information provided by the patent in suit was sufficient to put the skilled person into a position to prepare, with a good chance of success and without undue burden, the cured coating that was claimed. It was further indicated that it might be necessary to establish whether the objections under Art. 123(2) EPC raised by respondent 01 with regard to the auxiliary requests were also relevant for the main request.

Regarding the auxiliary requests, it was indicated *inter alia* that their admissibility as well as their allowability in particular under the provisions of Art. 84 EPC and Art. 123(2) EPC might have to be assessed.

X. With letter dated 27 December 2013 the appellant filed 8 auxiliary requests in replacement of all former auxiliary requests.

Claim 1 of each of auxiliary requests 1 and 2 was identical to granted claim 1.

Claim 1 of each of auxiliary requests 3 and 4 corresponded to granted claim 1, wherein feature c) was amended to specify that the surface active agent was **"selected from at least one polysiloxane and at least one fluoropolymer."**

Claim 1 of each of auxiliary requests 5 and 6 corresponded to granted claim 1 wherein features b) and c) were replaced by

"b) **a dispersion of colloidal particles in a polysiloxane surface active agent containing reactive functional groups.**"

Claim 1 of each of auxiliary requests 7 and 8 corresponded to claim 1 of auxiliary request 5 wherein it was specified at the end of feature b) "**wherein the particles are selected from colloidal silica, colloidal alumina, colloidal yttria, colloidal zirconia and mixtures of any of the foregoing.**"

XI. Further arguments were submitted by respondent 02 by letter dated 2 January 2014 and by respondent 03 by a letter also dated 2 January 2014.

XII. Oral proceedings were held on 13 February 2014 in the presence of all parties.

XIII. The appellant's arguments relevant for the present decision may be summarised as follows:

Main request

a) The interpretation that the feature of claim 1 reading "wherein a concentration of particles within a surface region of the coating is greater than a concentration of particles within a bulk region of the coating" merely required that the concentration of particles at the surface should be greater than the concentration in the bulk at least at a single location of the cured coating made technically no sense and was not derivable from the patent in suit.

b) Granted claim 1 was a product claim defined both by its components a) to c) as well as by the

surface enrichment feature. It was not disputed that not all combinations of components a) to c) led to cured coatings exhibiting surface enrichment. However, coatings without surface enrichment were not encompassed by claim 1. Therefore, the fact that cured coatings that did not exhibit surface enrichment could be prepared from components a) to c) did not amount to a lack of sufficiency.

The description of the patent in suit disclosed many details for carrying out the invention. Example 1A and Figure 1 together with example 1C and Figure 4 showed how to prepare the claimed coatings and further demonstrated that coatings prepared using a predispersion of colloidal silica led to improved surface enrichment. That Figure 4 corresponded to example 1C was implicit from paragraph [0268] of the patent in suit. Comparative example 1B and Figure 2 also showed that no surface enrichment was obtained in the absence of a surface active agent, here the polysiloxane. In that respect, example 1B was a comparative example because polybutylacrylate was used as a flow additive and not as a surface active agent, as was derivable from the amount used and the corresponding indication in Example 2A of the patent in suit. In addition, at least two different surface active agents were illustrated in e.g. examples 1 and 5 of the patent in suit.

Examples 22F and 22H of the application as filed did not contain any information regarding the presence or not of surface enrichment and there was no evidence on file in that sense. The

indication "Too Seedy to Test" given in the Table on page 99 of the application as filed only meant that none of the tests specified therein could be carried out. It could not be concluded that the compositions specified in claim 1 did not lead to surface enrichment.

In the absence of any TEM (Transmission Electron Microscopy) pictures of the coatings prepared in D14, it was not possible to conclude whether or not surface enrichment had been achieved. It was highly surprising that although it was acknowledged in D14 that TEM had been done, those pictures had not been filed, even after an explicit request (twice) of the appellant. Also in view of respondent 02's argument that it was not possible to conclude from Figure 1 of the patent in suit whether or not surface enrichment was present (which was however evidently the case), the conclusion drawn in D14 regarding the absence of surface enrichment had to be disregarded.

Under these circumstances, there was no evidence on file showing that at least one combination of components a) to c) specified in claim 1 did not lead to surface enrichment.

That the invention was sufficiently disclosed was confirmed by the fact that respondent 03 had had no difficulty in preparing cured coatings according to granted claim 1 as shown in D15 and D16.

Therefore the requirements of Art. 83 EPC were met.

Auxiliary requests 1 and 2

c) Since claim 1 of each of auxiliary requests 1 and 2 was identical to claim 1 of the main request, the same argumentation was valid.

Auxiliary requests 3 and 4

d) Auxiliary requests 3 and 4 were filed in reaction to the communication of the Board. By the deletion of many of the dependent claims they dealt with the concerns of the Board regarding Art. 123(2) EPC and led to a simplification of the proceedings.

e) Article 83 EPC: Because of the amendments made, example 1B of the patent in suit was not according to claim 1 any more. Those requests constituted therefore a *bona fide* attempt to deal with the objection of the Board in respect of sufficiency. In that respect, the respondent had not provided a single piece of evidence showing that the subject-matter now being claimed could not be carried out.

f) Article 123(2) EPC: The cured compositions according to claim 28 of the application as filed mandatorily comprised "a plurality of particles" because of the dependency of that claim on original claim 1. They also implicitly contained a film forming material, which was mandatory for curing. Such film forming materials were also disclosed at the bottom of page 47 of the application as filed as a specific embodiment. That those compositions were intended to prepare cured coatings was derivable from the whole

application as filed. Since similar considerations applied for the dependent claims, the requirements of Art. 123(2) EPC were met.

g) Under these circumstances, auxiliary requests 3 and 4 should be admitted to the proceedings.

Auxiliary requests 5 to 8

h) Auxiliary requests 5 to 8 were submitted in reply to the Art. 123(2) EPC objections identified in the communication of the Board.

i) In respect of sufficiency, the subject-matter now being claimed corresponded to the best working embodiment of the application as filed, which removed the insufficiency objections.

j) The subject-matter of each claim 1 further amounted to the combination of a) film forming materials and b) a dispersion, both features being disclosed in the original application, and therefore satisfied the requirements of Art. 123(2) EPC.

k) Feature b) of each claim 1, which concerned the starting components used to prepare the curable composition, met the requirement of Art. 84 EPC.

l) Therefore, auxiliary requests 5 to 8 were clearly allowable.

m) Therefore, there was no reason not to admit auxiliary requests 5 to 8 to the proceedings.

XIV. The respondents' objections relevant for the present decision were essentially as follows:

Main request

a) The cured coatings according to granted claim 1 should be such that "a concentration of particles within a surface region of the coating is greater than a concentration of particles within a bulk region of the coating". Read in its broadest sense, that feature merely required that the concentration of particles at the surface had to be greater than the concentration in the bulk at least at one location of the cured coating. Said feature was, thus, not really limiting so that the scope of claim 1 was very broad.

b) Not only did the claims define components a) to c) in a broad manner, but also the patent specification failed to provide any hint as to how to select components a) to c) in order to prepare, with a good chance of success, a cured coating having surface enrichment. Examples 22F and 22H of the application as filed, example 1B of the patent in suit and D14, which illustrated the most preferred embodiments of the patent in suit, showed that following the teaching of the patent in suit did not necessarily result in surface enrichment. Regarding D14, respondent 02 acknowledged that he did not have TEM pictures.

The polybutylacrylate used in example 1B was a surface active agent according to the patent specification. Also, the patent in suit contained no limitation regarding the amount of surface active agent.

Under these circumstances, the skilled person could only rely on trial-and-error in order to prepare successfully the cured coatings now being claimed. It was also not derivable from the patent in suit how to change the composition used in e.g. D14 in order to obtain surface enrichment.

c) It was explained in both D8 and D9 that polysiloxanes were used to promote "flooding" i.e. the movement of particles to the surface of a coating, and that that phenomenon was delicate and highly dependent on the coating composition. That teaching confirmed that the patent in suit gave no guidance regarding the appropriate selection of components a) to c) in order to prepare the claimed coatings in a reliable way.

d) The appellant's argument that the patent in suit taught that one had to predisperse the colloidal particles in order to prepare the cured coating now being claimed, could not be derived from the patent in suit, in particular not from examples 1A to 1C which only illustrated the effect of using a polysiloxane surfactant. In that respect, examples 1A and 1C could not be fairly compared because they had been performed using different components in different amounts.

e) The fact that the patent in suit contained some examples illustrating the subject-matter now being claimed was not sufficient to remedy to the lack of sufficient disclosure, in particular because those examples were all performed using only one kind of surface active agent (polysiloxane) and

one kind of particles (colloidal silica).

f) The patent in suit contained no method for the quantitative determination of surface enrichment. One was to rely on visual inspection, which could lead to different interpretations, as shown by the different conclusions reached by the appellant and the respondents in respect of Figure 1 of the patent in suit. Under these circumstances, the skilled person was not in a position to determine whether he was working within or outside claim 1. Although that issue was related to a lack of clarity, numerous decisions of the Boards of Appeal of the EPO had concluded that such a deficiency also led to a lack of sufficiency.

g) Therefore, the patent in suit did not provide sufficient information to carry out the claimed invention without undue burden.

Auxiliary requests 1 and 2

h) As claim 1 of both requests was identical to claim 1 of the main request, the same argumentation applied.

Auxiliary requests 3 and 4

i) Auxiliary requests 3 and 4 had been filed in order to remove the objection of lack of sufficiency, in particular to distinguish the subject-matter being claimed from example 1B of the patent in suit. That objection had already been raised in the opposition proceedings and was part of the contested decision. Hence, auxiliary requests 3 and 4 could have been submitted earlier in the

proceedings and the appellant had not provided valid reasons justifying their filing only at the appeal stage. Those requests had not even been filed with the statement of grounds for the appeal, but only after the summons to the oral proceedings before the Board.

j) The amendments made did not remove all the objections regarding lack of sufficiency raised against the main request, in particular regarding the lack of a concept fit for generalisation and/ or the lack of information regarding the nature of the fluoropolymers to be used in order to prepare successfully a coating according to claim 1.

k) The claimed subject-matter amounted to a series of selections being made in the application as filed, in particular regarding the "film forming material having at least one reactive functional group" and the surface active agent "selected from at least one polysiloxane and at least one fluoropolymer". In that respect, considering that the term "cured" of claim 1 was to be read in its broadest sense as encompassing both chemical and physical curing and was also to be distinguished from the term "crosslinked", "film forming materials" in particular were not necessarily required to be present in the "cured (coating) compositions" as originally claimed. The consistent use in the application as filed of expressions such as "non limiting examples", "in one embodiment" and/or "in another embodiment" further rendered the combination of features now being claimed not directly and unambiguously derivable from the application as filed.

Since the examples of the application as filed had all been carried out using polysiloxane comprising reactive groups and none of them was directed to fluoropolymers, they could not constitute a valid basis for the subject-matter defined in claim 1 of auxiliary requests 3 and 4 at this level of generality.

For those reasons, the specific combination of features now being claimed was not directly and unambiguously disclosed in the application as filed, contrary to the requirements of Art. 123(2) EPC.

l) Therefore, auxiliary requests 3 and 4 should not be admitted to the proceedings.

Auxiliary requests 5 to 8

m) Auxiliary requests 5 to 8 were filed in order to remove an insufficiency objection already raised in first instance proceedings and there was no valid reason for not having submitted them earlier in the proceedings.

n) In respect of sufficiency, the patent in suit still did not provide a concept fit for generalisation, in particular when working outside the examples. Regarding the amendments made, the specific combination of features now defined in claim 1 amounted to a series of selections within the ambit of the application as filed and was not directly and unambiguously derivable from it, in particular not from the passages relied upon by the appellant. Finally, feature b) of each claim 1 rendered the claimed subject-matter unclear

because it was not possible anymore to determine in the curable composition if the colloidal particles were still in the form of a dispersion in the polysiloxane.

o) Therefore, none of auxiliary requests 5 to 8 should be admitted to the proceedings.

XV. The appellant (patent proprietor) requested that the decision under appeal be set aside and the case be remitted to the department of first instance for further prosecution on the basis of the main request (claims as granted) or on the basis of one of auxiliary requests 1 to 8 filed with letter of 27 December 2013.

The Respondents (opponents) requested that the appeal be dismissed.

XVI. The Board announced its decision at the end of the oral proceedings.

Reasons for the Decision

1. The appeal is admissible.

Main request (patent as granted)

2. Sufficiency of disclosure

2.1 In order to meet the requirements of Art. 83 EPC, an invention has to be disclosed in a manner sufficiently clear and complete for it to be carried out by the skilled person in the whole area claimed without undue

burden, on the basis of the information provided in the patent specification and, if necessary, using common general knowledge. This means in the present case that the skilled person should be capable, *inter alia*, to prepare without undue burden cured coatings according to granted claim 1.

2.2 Granted claim 1 is directed to cured coatings having a higher concentration of particles at the air/coating interface than in the bulk of the coating, those domains being specified in the claims as the "surface region" and "bulk region", respectively; they are also defined in paragraphs [0021] and [0023]-[0025] of the patent in suit. That characteristic is referred to hereinafter as "surface enrichment".

2.2.1 According to paragraphs [0023]-[0025] of the patent in suit, the surface enrichment may be defined in different ways and determined either by surface analysis techniques or by visual inspection using microscopy techniques. In the patent in suit and throughout the proceedings, the appellant consistently referred to visual inspection, in particular in order to conclude that the coatings illustrated in Figures 1, 4 and 7-10 of the patent in suit showed surface enrichment whereas that of Figure 2 did not. According to that interpretation, surface enrichment is considered to be present if the cured coating presents a uniform increase in particle concentration at the air/interface of the coating ("surface region" according to claim 1) as compared to within the coating ("bulk region" according to claim 1). That reading of the feature "surface enrichment" is in line with the interpretation of Figures 1 to 4 provided in paragraphs [0265] to [0268] of the patent in suit and is similar to the phenomenon of "flooding" defined in D8 (page 10,

section V) and D9 (paragraph bridging pages 197 and 198) in relation to pigment mixtures in coatings.

2.2.2 The respondents' argument according to which, due to the wording "a" concentration, "a" surface region, and "a" bulk region, granted claim 1 encompassed coatings in which surface enrichment was only present at a single location does not make sense technically and is also not in line with the patent specification as a whole. Therefore, that reading of claim 1 cannot be followed.

2.3 Granted claim 1 is defined both in terms of its components a) to c) (film forming material having reactive functional group(s), particles and surface active agent) as well as by the use of a feature related to surface enrichment, which constitutes a limitation of the claimed subject-matter in terms of the result to be achieved. However, as the definition of components a) to c) is very broad, the subject-matter defined in granted claim 1 encompasses a huge variety of possible combinations. That all those possible combinations of components a) to c) according to granted claim 1, in any amount, necessarily lead to surface enrichment is neither credible, nor was it ever argued during the proceedings and during the oral proceedings before the Board the appellant even agreed that such was not the case. Therefore, it has to be assessed whether the patent in suit discloses a technical concept fit for generalisation that makes available to the skilled person the specific combinations out of the many possibilities encompassed by the subject-matter of claim 1 that do lead to surface enrichment. In other words, whether the skilled person finds sufficient guidance for an appropriate selection of components a) to c) in order to prepare,

with a good chance of success, a cured coating exhibiting surface enrichment (see Case Law of the Boards of Appeal of the EPO, 7th edition, 2013, section II.C.4.2 and 4.4).

2.4 According to the patent specification, the coatings according to granted claim 1 may be prepared by curing compositions comprising different components defined as follows:

(a) film forming material(s) having at least one reactive functional group (feature a) of granted claims 1 and 27-29; paragraphs [0136]-[0158]);
(b) particles (feature b) of granted claims 1 and 14-26; paragraphs [0032]-[0074]);
(c) surface active agent(s) (feature c) of granted claims 1 and 3-13; paragraphs [0075]-[0134]);
(d) optionally reactant(s) (granted claims 2 and 30-42; paragraphs [0135] and [0159]-[0203]). In that respect, it is specified in paragraph [0135] that a "reactant" is a material comprising a functional group that is reactive with at least one functional group selected from at least one functional group of the at least one polysiloxane and at least one functional group of the (film forming) material;
(e) optionally catalyst(s) (granted claims 43-48; paragraphs [0206]-[0207]);
(f) optionally further components (paragraph [0208]).

Many embodiments of each of those components are exemplified in the passages of the patent specification cited above. However, all the information provided in those passages is given in very general terms, most features being with the indication that they are "non limiting" examples and/or "embodiments". In particular, the patent specification does not contain any

information that could serve as a guidance for the skilled person in order to identify e.g. which combinations of components and/or which amounts thereof should be used or which process steps should be applied in order to obtain cured coatings having surface enrichment according to granted claim 1. In the present case, it was not shown that the skilled person could rely on his general knowledge in order to compensate for that lack of information. On the contrary, not only would the skilled person be aware that not all possible combinations of components automatically provide the surface enrichment specified in the claims, but it is also known in the art that surface enrichment is very sensitive and highly depends on the nature of the components, e.g. solvent, particle nature and size, additives and/or the preparation process (D9: page 198: lines 4-9 and bottom paragraph; top of page 200; last paragraph on page 201). Although D9 is primarily directed to pigment mixtures in coatings, the conclusions drawn therein are considered to be relevant for the cured coating defined in granted claim 1 in view of the similarity of the components present in both systems and of the broadness of the definition of components a) to c).

2.5 The only further information given in the patent in suit to prepare the claimed cured coatings resides in the examples.

In the present case, many examples of the application as filed had been deleted during the examination proceedings and are not present anymore in the patent in suit. As a result, a number of inconsistencies are present in the examples of the patent in suit, such as reference being made to components that are not specified elsewhere in the patent in suit. This is in

particular relevant in respect of examples 1A, 1B and 2A, which will be considered below (examples 1A and 1C refer to the catalyst of non-existing example 12 and example 1B to the acrylic polyol of non-existing Example 23A; example 2A refers to non-existing Example 23C). Those inconsistencies render the examples unintelligible without making reference to the original application. Therefore, the examples of the patent in suit are read hereinafter, when necessary, in the light of the information provided in the application as filed.

2.5.1 Example 1A of the patent in suit is directed to a cured coating prepared from a composition comprising an acrylic polyol, colloidal silica and a polysiloxane polyol as components a), b) and c), respectively. according to granted claim 1, whereby the silica and the polysiloxane were added as separate components (page 31, lines 1-2 of the patent in suit). As indicated in paragraph [0265] of the patent in suit, Figure 1 shows that the cured coating prepared in example 1A exhibits surface enrichment.

2.5.2 Example 1C of the patent in suit is directed to a cured coating prepared from a composition comprising an acrylic polyol, colloidal silica and a polysiloxane polyol as components a), b) and c), respectively. according to granted claim 1, whereby the silica and the polysiloxane were added as a predispersion (page 31, lines 3-6 of the patent in suit).

Although Figure 4 of the patent in suit is indicated to be a TEM picture of a cured coating prepared using a predispersion of silica and polysiloxane (paragraph [0268]), it contains no indication that Figure 4 actually illustrates the coating prepared in

Example 1C, which was not contested by the appellant. Since example 1C is indicated in the patent in suit as illustrative of the invention and in the absence of any evidence to the contrary, it is nevertheless credible that the cured coating prepared in Example 1C exhibits surface enrichment.

2.5.3 Further cured coatings were prepared in examples 2A, 3B-G (Figures 7-10), and 4-6 of the patent in suit, all using an acrylic polyol film-forming material, colloidal silica particles and polysiloxane polyol surface active agents (only in example 5 a polysiloxane polyol that differed from the other ones one was used). Those examples are indicated as being according to the invention (paragraphs [0247]-[0254]). Moreover, silicone oils are known in the art to be very effective in improving surface enrichment (D8: page 10, section V). Therefore, and in the absence of any evidence to the contrary, it can be accepted that the cured coatings prepared in those examples exhibit surface enrichment.

2.5.4 However, all the examples of the patent in suit illustrating the subject-matter of granted claim 1 were performed using only a single kind of film forming material (acrylic polyol), a single kind of particles (colloidal silica) and a single kind of surface active agent (polysiloxane polyol), the positive effect of which on surface enrichment is known.

2.5.5 There is no evidence on file that the other surface active agents encompassed by the claims and cited in the patent in suit as suitable compounds have the same effect. In that respect, Example 1B of the patent in suit describes a cured coating prepared from a composition comprising an acrylic polyol, colloidal

silica and polybutylacrylate. Example 1B is indicated as a comparative example. It was made without polysiloxane surface active agent (paragraph [0257]) but the curable composition prepared therein does contain polybutylacrylate, which is a surface active agent in the sense of the patent in suit as explicitly stated in paragraph [0085]. The curable composition prepared in Example 1B is therefore a curable composition within the terms of granted claim 1. Whether or not polybutylacrylate was used as a surface active agent or as a flow additive, as argued by the appellant, is, in the absence of any indication in that respect in the patent in suit, irrelevant. Considering that the cured coatings prepared in example 1B do not exhibit surface enrichment, as shown in Figure 2 and explained in paragraph [0266] of the patent in suit, the patent itself shows that merely following the teaching of the patent specification is not sufficient to prepare a cured coating exhibiting surface enrichment according to granted claim 1. This leads to the conclusion that not all combinations of the components a) to c) listed in the patent in suit necessarily lead to surface enrichment. Also, it cannot be derived from the patent specification what should be changed in example 1B in order to obtain surface enrichment. Hence, although the examples of the patent in suit show that some cured coatings according to granted claim 1 may be prepared, they do not provide sufficient information on how to proceed in order to prepare, in a reliable way, cured coatings having surface enrichment according to granted claim 1 that comprise different combinations of components than those actually used in the specific examples of the patent in suit, but fall within the definition of components a), b) and c) of claim 1. In that light, the appellant’s argument that the patent as whole provided

sufficient teaching in order to carry out the invention cannot be followed.

2.5.6 That conclusion is not changed by D15 and D16 which show that it is possible to prepare some coatings according to claim 1. In the present case, in view of the broad scope of the claimed subject-matter, it is not enough that the patent in suit provides at least one way of carrying out the invention or that some combinations will achieve the required surface enrichment. The issue is that it should provide a clear guidance how to prepare successfully and without undue burden cured coatings exhibiting surface enrichment according to claim 1, also using components different from the few used in the examples.

2.6 The appellant argued that Example 1C, compared to Example 1A, showed that better surface enrichment was obtained by using a predispersion of the particles in the surface active agent. However, the components and the amounts thereof used in Examples 1A and 1C differ in several ways (see the Tables of paragraphs [0259] and [0261]: amounts of methyl amyl ketone and silica; nature and amount of acrylic polyol; amount of polysiloxane polyol; amount of catalyst; different Desmodur reactants). Therefore those examples do not provide a proper comparison and it cannot be concluded on that basis that the use of a predispersion of colloidal silica in polysiloxane leads to an improvement in surface enrichment. Besides, since Example 1C was also performed using components as identified in section 2.5.4 above, it does not change the above conclusion regarding the lack of guidance.

2.7 Under these circumstances, the skilled person wanting to prepare a coating according to granted claim 1 is

left with the task of performing an elaborate program in order to find out which combination of a) film forming materials, b) particles, c) surface active agent and which preparation conditions should be used. In other words, the skilled person can only establish by trial and error whether or not his particular choice out of the numerous possibilities will provide the surface enrichment required by claim 1, which is contrary to the requirements of Art. 83 EPC.

2.8 The above conclusion is in line with e.g. T 1121/03 and T 369/05 since the patent in suit does not provide a technical concept fit for generalisation over the whole scope of the claims for preparing, without undue burden, cured coatings exhibiting surface enrichment.

2.9 In view of the above, it is not necessary to consider D14, relied upon by the respondents, or Examples 22F and 22H of the original application, relied upon by the opposition division.

2.10 For these reasons, the main request does not meet the requirements of sufficiency of disclosure (Art. 83 EPC) and has to be refused.

2.11 Under these circumstances, the question whether the skilled person is in a position unambiguously to determine whether he is working inside or outside the claims would be related to a lack of sufficiency (Art. 83 EPC) or would rather be a clarity issue (Art. 84 EPC), needs not be addressed.

Auxiliary requests

3. The admission to the proceedings of each of auxiliary requests 1 to 8, which were all filed in reply to the

communication of the Board accompanying the summons to oral proceedings, is subject to the Board's discretion (Art. 13(1) and (3) RPBA).

Auxiliary requests 1 and 2

4. Since claim 1 of each of auxiliary requests 1 and 2 is identical to claim 1 of the main request, the same reasoning regarding sufficiency of disclosure applies, thus rendering auxiliary requests 1 and 2 not clearly allowable. Therefore, auxiliary requests 1 and 2 are not admitted to the proceedings.

Auxiliary requests 3 and 4

5. Auxiliary requests 3 and 4 both contain an identical claim 1, which corresponds to granted claim 1 amended by specifying that the surface active agent c) is selected "from at least one polysiloxane and at least one fluoropolymer".

5.1 The amendment made to claim 1 aims in particular at excluding the subject-matter of example 1B of the patent in suit, wherein a coating that does not show surface enrichment is prepared (see section 2.5.5 above). The relevance of example 1B in respect of the issue of lack of sufficiency had been on file from the beginning of the opposition proceedings (page 6 of opponent's 02 notice of opposition) and was also addressed in the contested decision (paragraph bridging pages 6 and 7). Nevertheless, a claim directed to the subject-matter now being defined was neither submitted during the opposition proceedings nor with the statement of grounds of the appeal. In fact, the nature of the surface active agent had never been in the focus until the filing of the (then) first auxiliary request

with letter of 20 June 2012. Such a late filing contravenes the requirements of Art. 12(2) RPBA according to which the statement of grounds of appeal shall contain a party's complete case.

5.2 Apart from their late filing, auxiliary requests 3 and 4 further raise *prima facie* concerns, e.g. in relation to:

(a) Art. 83 EPC: the amendment made does not appear to remove the objection of lack of sufficiency raised against the main request since claim 1 is still directed to a multitude of film forming materials and particles. Regarding the surface active agents, the patent in suit does not provide any information regarding the fluoropolymers to be used and the examples only illustrate one kind of polysiloxane, namely polysiloxane polyol, which comprises reactive functional groups;

(b) Art. 123(2) EPC: claim 43 of the application as filed was directed to feature a) of claim 1 but only in combination with a "reactant" (through its dependency on original claims 42 and 35), which is not reflected in claim 1. In addition, if a basis for each feature a) to c) specified in claim 1 may be found in the application as filed, it is always in passages directed to specific embodiments (page 9, paragraph 1: particles; page 31, line 2 to page 47, first full paragraph: polysiloxanes; page 47, last paragraph: film forming material optionally having a reactive functional group). In that respect, it is further indicated on page 28, lines 2-3, that the surface active agent can be amphiphilic. Since that feature is not reflected in claim 1, it raises further concerns whether or

not a further selection within the ambit of the application as filed is required in order to arrive at the subject-matter now being claimed. Under these circumstances it is questionable whether the specific combination of technical features according to claim 1 is directly and unambiguously disclosed in the application as filed (Art. 123(2) EPC).

5.3 Considering their late filing and the fact that they are not clearly allowable, auxiliary requests 3 and 4 are not admitted to the proceedings.

Auxiliary requests 5 and 6

6. Auxiliary requests 5 and 6 contain identical claims 1 which correspond to granted claim 1 amended by replacing features b) and c) by the new feature "b) a dispersion of colloidal particles in a polysiloxane surface active agent containing reactive functional groups."

6.1 For the same reasons as indicated above in respect of auxiliary requests 3 and 4 (section 5.1), there is no reason justifying the filing of auxiliary requests 5 and 6 at such a late stage of the proceedings.

In addition, the first time during the whole of the proceedings that a coating prepared using a specific predispersion appears in the claims is with claim 1 of auxiliary request 2 filed with letter of 20 June 2012 (i.e. after the statement of grounds of appeal was filed). Therefore, the same considerations apply as for auxiliary requests 3 and 4 (section 5.1 above).

6.2 Auxiliary requests 5 and 6 further raise *prima facie* concerns, e.g. in relation to:

(a) Art. 123(2) EPC: even if the argument of the appellant according to which new feature b) was based on page 26, first paragraph of the application as filed, was to be followed, it appears questionable whether the specific combination of features defining the subject-matter now being claimed, at this degree of generality, would be directly and unambiguously derivable from the application as filed, in particular from the combination of said passage on page 46 and that at the bottom of page 47. In that respect, the first paragraph on page 26 in particular is explicitly not limited to the use of polysiloxanes containing reactive functional groups;

(b) Art. 84 EPC: feature b) of claim 1 was not present in the granted claims so that it would have to be assessed whether it fulfils the requirements of Art. 84 EPC. Said feature b) requires that the curable coating composition comprises simultaneously a film forming material and a dispersion of colloidal particles "in a polysiloxane". However, it does not appear possible to identify in the curable composition comprising all its components whether or not the colloidal particles are present as a dispersion *in the polysiloxane*. The argument of the appellant that feature b) was directed to the starting material is not reflected in the wording of the claim.

6.3 Under these circumstances auxiliary requests 5 and 6 are both late filed and not clearly allowable and, consequently, not admitted to the proceedings.

Auxiliary requests 7 and 8

7. Auxiliary requests 7 and 8 contain identical claims 1, which correspond to claim 1 of auxiliary request 5 further amended by limiting the nature of the particles in feature b).

7.1 Each of auxiliary requests 7 and 8 presents the same deficiencies as auxiliary requests 5 and 6 in respect of their late filing and the fact that they are not clearly allowable in respect of Art. 123(2) EPC and Art. 84 EPC.

7.2 Therefore, auxiliary requests 7 and 8 are not admitted to the proceedings.

8. Since the main request of the appellant (patent proprietor) is not allowable and none of auxiliary requests 1 to 8 is admissible, the appeal has to be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

E. Goergmaier B. ter Laan

Decision electronically authenticated