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**Datasheet for the decision  
of 18 January 2024**

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**Language of the proceedings:** EN

**Title of invention:**  
IN-STORE TINTABLE NON-INFRARED-ABSORPTIVE PAINT AND STAIN  
SYSTEM

**Patent Proprietor:**  
SWIMC LLC

**Opponents:**  
Sun Chemical Colors & Effects GmbH  
Akzo Nobel Coatings International BV

**Relevant legal provisions:**  
EPC Art. 56  
RPBA 2020 Art. 11

**Keyword:**  
Inventive step



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Case Number: T 0674/21 - 3.3.02

**D E C I S I O N**  
**of Technical Board of Appeal 3.3.02**  
**of 18 January 2024**

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**Decision under appeal:** **Decision of the Opposition Division of the  
European Patent Office posted on 31 March 2021  
rejecting the opposition filed against European  
patent No. 2393884 pursuant to Article 101(2)  
EPC.**

**Composition of the Board:**

**Chairman**            M. O. Müller  
**Members:**            P. O'Sullivan  
                              B. Burm-Herregodts

## **Summary of Facts and Submissions**

- I. The appeal of opponent 2 (hereinafter appellant) lies from the decision of the opposition division to reject the oppositions against European patent 2 393 884.
- II. The following documents, cited during opposition proceedings, were referred to by the parties in appeal proceedings:
- D1: "Cool down your paints", - BASF brochure for Xfast<sup>®</sup> stir-in pigments for solar heat management, 2007;
  - D4: "Resene Cool Colours" brochure, downloaded from the Resene website on 21 October 2008;
  - D5: M. Ryan, "Introduction to IR-Reflective Pigments", www.pcimag.com, August 2005;
  - D10: Affidavit of Colin Gooch dated 21 December 2018;
  - D17: Lambourne and Strivens, Extracts from "Paint and Surface Coatings", published 1999, contents, pages 11 - 14 and 360-365 cited by the appellant with the notice of opposition; pages 359-365 cited by opponent 1 with the notice of opposition.
  - D18: Product description, "Novapint D", Pinova AG, 22 August 2008;
  - D24: WO 2008/151152 A1
  - D32: "When Black is White", www.pcimag.com, published December 2020
  - D33: Sherwin-Williams UK Coatings Ltd., Sayerlack Innovative Wood Solutions - "Wood color plus", November 2008

- III. According to the contested decision, the claims of the patent as granted involved an inventive step starting from document D24 as closest prior art.
- IV. With the statement of grounds of appeal, the appellant submitted *inter alia* that claim 1 of the main request (patent as granted) lacked inventive step over D17 as closest prior art.
- V. In a communication pursuant to Article 15(1) RPBA sent in preparation for oral proceedings, the board *inter alia* expressed the preliminary view that D17 represented a suitable starting point for the assessment of inventive step, and that the subject-matter of claim 1 of the main request lacked inventive step starting starting from this document.
- VI. Oral proceedings by videoconference took place as scheduled on 18 January 2024 in the presence of both parties.
- VII. Requests relevant to the present decision

The appellant requested that:

- the decision under appeal be set aside and that the patent be revoked in its entirety,
- none of the 55 auxiliary requests filed by the respondent be admitted into the proceedings, and
- if admitted, the auxiliary requests be examined by the board and not remitted to the opposition division.

The respondent requested that:

- the appeal be dismissed and the patent be maintained as granted,
- alternatively, the patent be maintained on the basis of the sets of claims of one of the auxiliary requests 1a, 1b, 1c, 2, 2a, 2b, 2c, 3, 3a, 3b, 3c, 4, 4a, 4b, 4c, 5, 5a, 5b, 5c, 6, 6a, 6b, 6c, 7, 7a, 7b, 7c, 8, 8a, 8b, 8c, 9, 9a, 9b, 9c, 10, 10a, 10b, 10c, 11, 11a, 11b, 11c, 12, 12a, 12b, 12c, 13, 13a, 13b, 13c, 14, 14a, 14b, or 14c submitted with the reply to the statement of grounds of appeal, and
- the case be remitted to the opposition division if the main request is found not to be allowable.

Opponent 1 did not file any submissions or requests in appeal proceedings.

VIII. For the text of claim 1 of the main request, as well as claim 1 of each of the auxiliary requests, reference is made to the reasons for the decision, below.

IX. For the relevant party submissions, reference is made to the reasons for the decision, below.

## Reasons for the Decision

Main Request (patent as granted) - Inventive step,  
Articles 100(a) and 56 EPC

1. The patent
  - 1.1 The patent is concerned with point-of-sale customised-colour architectural paint and stain tinting systems (patent, paragraph [0001]). Typically, manufacturers distribute a set of tintable base paints and several concentrated colorants, which are combined at point-of-sale outlets using colorant dispensing and shaker mixing equipment (paragraph [0002]). The black colourant in such custom colour systems typically contains a suspension of carbon black particles, which is highly infrared absorptive (paragraph [0003], final three lines).
  - 1.2 Buildings in sunny regions are normally painted in light colours to minimize solar gain. If tinted with dark colorants employed in conventional colour systems, the resulting paints would be undesirably infrared-absorptive. Some paint manufacturers have developed premixed infrared-reflective external paints having dark colours using relatively expensive infrared-reflective dark pigments (patent, paragraph [0004]).
  - 1.3 In this context, the patent sets out to provide both interior and non-infrared-absorptive exterior custom-tinted paints at point-of-sale outlets (i.e. stores selling paints), without requiring a dedicated dispensing system and colorant set for external paint tinting. This is achieved by providing a colorant array including (i) an infrared-absorptive black liquid colorant (e.g. containing a carbon black pigment

dispersion), (ii) a non-infrared-absorptive black liquid colorant (e.g. containing a perylene black or mixed metal oxide black pigment dispersion), and (iii) one or more additional liquid colorants made with non-infrared-absorptive pigments (paragraph [0005]).

2. Closest prior art

2.1 Independent claim 1 of the patent as granted reads as follows:

*"1. A point-of-sale custom color system for tinting base paints and stains, the system comprising:*

*a) at least one light-colored non-infrared-absorptive base paint or stain packaged in a point-of-sale container with a volume of about 0.2 to 20 L equipped with an openable and recloseable lid, cap or other closure for an opening through which colorant may be dispensed from an automated or manual colorant dispenser into the base paint or stain; and*

*b) an array of colorants including*

*(i) an infrared-absorptive black liquid colorant,*  
*(ii) a non-infrared-absorptive black liquid colorant, and*

*(iii) one or more additional liquid colorants made with non-infrared-absorptive pigments,*

*the colorants being packaged in containers with a volume of about 0.5 to about 5 L and from which colorant may be supplied to such a colorant dispenser and thence dispensed into the base paint or stain,*

*wherein the term "non-infrared-absorptive" when used with respect to a paint or stain means that the paint*

*or stain when cast as an at least 40 mm dry thickness coating film over the white part of a BYK-Gardner No. PA-2811 opacity drawdown chart will have a total solar reflectance (TSR) of at least 10 as measured using the procedure of ASTM E-971-88 (Reapproved 2003), and*

*wherein the term "non-infrared-absorptive" when used with respect to a colorant or pigment means that when sufficient such colorant or pigment is added to a clear base paint so as to provide an opaque film when cast as an at least 40 mm dry thickness coating film over the white and black parts of the above-mentioned BYK-Gardner opacity drawdown chart, the dry film will have a TSR of at least 10 as measured over the white part of the drawdown chart."*

2.2 The appellant submitted that D17 was a suitable closest prior art disclosure, and that starting from this document, the claimed subject-matter lacked inventive step.

2.3 D17 is a document comprising excerpts from a book entitled "Paint and surface coatings". Pages 11-14 of this document are excerpted from chapter 1 entitled "*Paint composition and applications - a general introduction*", and provide a general review of *inter alia* pigments (pages 11-14). Pages 359-364 are excerpts from a section entitled "*Colour delivery*", taken from chapter 9 entitled "*Coatings for buildings*". In this section, D17 acknowledges the existence in the art of paint which is tinted at or near the point of sale, so-called "in-store" tinting systems comprising a device for dispensing tinters ("colorants" according to claim 1) in quantized units to pre-filled paint bases, which are then mixed by shaking (D17, page 359, point 9.5.1). Such in-store tinting systems and the dispensing

machines employed are discussed in detail in section 9.5.3 (pages 360-365). A typical core of pigment tinters would include black, white, organic red, organic yellow, inorganic red, inorganic yellow, organic blue, along with a choice of further colours (page 364, lines 6-12).

#### 2.4 Suitability of D17 as closest prior art

2.4.1 According to the contested decision, the closest prior art was represented by D24. The opposition division dismissed D17 as closest prior art on the basis that although it related to in-store tinting systems, it was silent about the specific interior and exterior use to which the patent was directed (contested decision, page 16, lines 1-2). The respondent also shared this view.

2.4.2 The board disagrees. As stated by the appellant, the fact that D17 may not explicitly disclose or distinguish between tinting systems for interior or exterior use, nor mention the use of non-infrared-absorptive pigments in that context, does not disqualify it as a suitable closest prior art document. Rather, similarly to the presently claimed subject-matter, D17 discloses in-store paint tinting systems, comprising as set out above, a device for dispensing tinters in quantized units to pre-filled paint bases, which are then mixed by shaking. Furthermore, the possibility of interior and exterior application is implicit in the use of *decorative* paint tinting systems, mentioned in D17 (page 360, point 9.5.3, final paragraph). The relevant field of application in D17 is thus closely related to the claimed subject-matter, and there is no reason to dismiss it as a suitable starting point.

- 2.4.3 The respondent is correct to note that D17 is not limited to teachings concerning point-of-sale tinting systems, but rather references many aspects and fields of application relating to paint and surface coatings in general. The general nature and the totality of the disclosure of the book from which D17 originates however does not detract from the fact that in one aspect, it discloses in-store tinting systems as addressed above, nor does it diminish the significance of this specific disclosure, or its suitability as a starting point.
- 2.4.4 Similarly, the fact as argued by the respondent that section 9.5.2 and 9.5.3 of D17 disclose alternatives to in-store tinting systems and the possibility of different methods (e.g. non-machine alternatives) does not detract from the fact that D17 also discloses "in-store" tinting systems comprising a device for dispensing tinters in quantized units to pre-filled paint bases, which are then mixed by shaking, as addressed above.

Finally and for the sake of completeness, the board notes that whether or not D24 is a more suitable starting disclosure than D17 is not relevant in the present context. It only needs to be determined whether D17 represents a suitable starting point. Once this has been established, the claimed invention must also involve an inventive step over said starting point (Case Law of the Boards of Appeal, 10th Edition 2022, I.D.3.1; page 191, second full paragraph of the English Edition).

3. Distinguishing features

3.1 As set out above, D17 discloses "in-store" tinting systems comprising a device for dispensing tinters in quantized units to pre-filled paint bases, which are then mixed by shaking (D17, page 359, point 9.5.1). Such in-store tinting systems and the dispensing machines employed are discussed in detail in section 9.5.3 (pages 360-365). A typical core of pigment tinters would include black, white, organic red, organic yellow, inorganic red, inorganic yellow, organic blue, along with a choice of further colours (page 364, lines 6-12).

3.2 The respondent submitted at oral proceedings that the subject-matter of claim 1 was distinguished from the disclosure in D17 in that D17 failed to disclose a system comprising a light coloured non-infrared absorptive base paint (1) in combination with an array of colorants including

- (i) an infrared absorptive black liquid colorant,
- (ii) a non-infrared-absorptive black liquid colorant, and
- (iii) one or more additional liquid colorants made with non-infrared absorptive pigments

as required by claim 1.

In particular, D17 did not disclose the **combination** in a single array of colorants of both an infrared-absorptive black liquid colorant **and** a non-infrared-absorptive black liquid colorant.

3.3 The board notes that although D17 mentions black as one member of a typical core of pigment tinters as set out

above, the nature of this black tinter is not further specified in D17.

3.4 Furthermore, the respondent argued that D17 failed to disclose the following features of claim 1:

- packaging the base paint or stain in a point of sale-container with a volume of about 0.2 to 20 L equipped with an openable and reclosable lid, cap or closure for an opening through which colorant may be dispensed from an automated or manual colorant dispenser into the base paint or stain; and

- the colorants being packaged in containers with a volume of 0,5 to about 5 L and from which colorant may be dispensed into the base paint or stain.

The distinguishing features of claim 1 over D17 as set out by the respondent are accepted by the board.

4. Problem solved

4.1 During oral proceedings the respondent submitted that the technical effects of the distinguishing features were as follows:

- a single system was provided with a low number of base paints and colorants for both internal and external application, and
- a system was provided which was optimized for solar heat management and an increase in color match between interior and exterior paints.

4.2 As noted by the respondent, these effects are demonstrated by the examples of the patent. Specifically, in example 1 a carbon black colorant (an

infrared-absorptive black colorant) was added to the base paint prepared according to the preparatory example of paragraph [0056]. In example 2, a dark finish exterior paint was prepared by adding an aqueous colorant containing perylene black pigment (a non-infrared-absorptive black colorant) to the same base paint, resulting in a tinted paint having a total solar reflectance greater than 35 (paragraph [0058]).

- 4.3 In view of the above effects, the respondent formulated the objective technical problem underlying the subject-matter of claim 1 as

"the provision of interior and exterior paints and stains in a wide range of colors".

- 4.4 The board sees no reason not to accept the technical effects of the claimed subject-matter and the formulation of the objective technical problem starting from D17 as proposed by the respondent.

5. Obviousness

- 5.1.1 The appellant argued that the subject-matter of claim 1 lacked inventive step starting from D17 in combination with *inter alia* D5 or D32.

- 5.2 The board agrees.

As argued by the appellant and not disputed by the respondent, conventional infrared-absorptive black pigment colorants such as carbon black would have been known to the skilled person starting from the "in-store" tinting systems mentioned in D17. That such conventional black pigments caused undesired solar heat-up when exposed to solar irradiation was also

known to the skilled person, as recognised in the patent (paragraphs [0003] and [0004]) and evident from, for example, D5 (page 71, right hand column, second paragraph) and D32 (page 4, penultimate paragraph).

- 5.3 As argued by the appellant, *inter alia* D5 and D32 provide the means of overcoming this issue: namely replacing infrared-absorptive black pigments such as carbon black with non-infrared-absorptive black pigments disclosed in those documents.

In more detail:

- 5.3.1 D5 is an article entitled "Introduction to IR-reflective pigments". The article states that the primary purpose of IR-reflective coatings is to keep objects cooler than they would be by using standard pigments (page 70, left column, second paragraph). A line of IR-reflective pigments called Arctic<sup>®</sup> is described (page 70, right column, second paragraph). Individual Arctic pigments are listed in table 1 (page 71) and include two black pigments, "Black 10C909" and "Black 411" having a TSR of 24 and 30% respectively. A comparison of the TSR of these pigments and carbon black when mixed with TiO<sub>2</sub> is depicted in figure 2 (page 70), and shows the higher TSR value of the IR-reflective pigments at different L values.
- 5.3.2 D32 is an article entitled "When Black is White" and concerns a new generation of infrared reflective (i.e. non-infrared absorptive) pigments. D32 refers to *inter alia* carbon black, and the fact that it does not only absorb light in the visible spectrum, but also in the infrared region. In contrast, "IR reflective" (i.e. non-infrared-absorptive) pigments exhibit a more selective absorption band, absorbing less light near

the cut-off between visible and infrared wavelengths, depicted in figure 1 (D32, second page, first and second paragraphs). Since 51% of the total energy of the sun is in the infrared range, reflecting this energy can maintain a lower surface temperature (D32, second page, third and fourth paragraphs). D32 therefore recognises a pigment's capacity to reflect heat as an important property to be taken into account (paragraph bridging the third and fourth pages). D32 furthermore states that roof and exterior building coatings top the list of typical applications where heat reflectance is important (fourth page, first full paragraph). Black pigments having such infrared reflective properties are mentioned in D32 and include C.I. pigment black 30 (fourth page, fifth full paragraph) as well as the newly developed pigments such as *inter alia* "eclipse Black 10201" and "eclipse Black 10203" (sixth page, final paragraph).

- 5.3.3 The respondent did not dispute that the non-infrared-absorptive black pigments disclosed in D5 and D32 would have a TSR of at least 10 as required by claim 1, and indeed as noted by the appellant, this was demonstrated for example in figure 2 and table 1 of D5.
- 5.4 The skilled person starting from the disclosure in D17 and wishing to solve the above-mentioned problem, would have learned from D5 and D32 that for darker paints or stains, undesired heat-up by exposure to solar irradiation in exterior paint or stain applications could be avoided by using the non-infrared-absorptive black pigments known from D5 or D32. Hence, in order to provide the possibility of preparing both paints or stains for exterior or interior use, it would have been an obvious measure to include non-infrared-absorptive black pigments for exterior use, in addition to a

conventional infrared-absorptive black pigment for internal use, in the colorant array disclosed in D17.

- 5.5 As noted by the respondent however, D17 does not explicitly state that the array of colorants (D17: "tinters") used includes one or more additional liquid colorants made with non-infrared-absorptive pigments, as required by claim 1, array b), component (iii). The respondent however conceded that such non-infrared absorptive liquid colorants were known to the skilled person.
- 5.6 In the view of the board, having chosen to incorporate a non-infrared-absorptive black pigment taught in D5 or D32 into the colorant array of D17 as set out above, and wishing to prepare a dark paint or stain incorporating said non-infrared-absorptive black pigment for the purpose of avoiding undesired heat-up by solar radiation, the skilled person would logically only include further colorants made exclusively with non-infrared-absorptive pigments. The notion of including, after purposefully having chosen to include non-infrared-absorptive black, further colorants with infrared-absorptive pigments, would run contrary to the precise rationale for having chosen the non-infrared-absorptive black pigment in the first place, namely the avoidance of solar heating.
- 5.7 In a broader but related sense, the same reasoning applies to the specific choice of a base paint, and the extent and nature of the further colours included in the array. This is important in the present case because at various points during the oral proceedings, in relation to claim 1 of the main request, but in particular in relation to claim 1 of some of the auxiliary requests, the respondent argued that the

skilled person starting at D17, in addition to not choosing to include a non-infrared-absorptive black pigment, also would not have chosen specific colorant combinations, or specific types of base paint, in particular a non-infrared-absorptive base paint required by claim 1 ((b), item (i)).

5.8 In the view of the board however, starting from the array disclosed in D17, the skilled person, depending on the desired outcome, i.e. the colour and properties of the final paint desired, would freely select appropriate known paint components in terms of base paints, black colorants and further colorants with a view to achieving said outcome. Indeed, D17 points to a flexibility in tinting systems in terms of the number of base paints and colorants (D17, page 360, point 9.5.3) and thus discloses an inherent flexibility in the system depending on the desired outcome. As stated by the board at oral proceedings, the system of D17 is basically a mixing system: there is nothing preventing the skilled person from setting up this system with base paints and further colorants which reflect the desired properties of the paint or stain finally obtained. As stated by the appellant, if a specific pigment colorant is publically available, it will be considered by the skilled person for a point-of-sale system. Although specific combinations such as that claimed are not disclosed in D17, a pointer towards specific choices is not needed, because the skilled person will tailor the components to be mixed according to the desired result.

5.9 Specifically, if the desired result is an exterior paint with high solar reflectance, then the skilled person would, in a logical and almost trivial manner select a non-infrared-absorptive base paint, and non-

infrared-absorptive further colorants depending on the desired result. As argued by the appellant and not denied by the respondent at oral proceedings, paints and stains or colorants and pigments meeting the parametric definitions provided for "non-infrared-absorptive" in claim 1 were known to the skilled person. Indeed, as noted by the board during oral proceedings and not contested by the respondent, the patent concerns a system comprising an array, and does not disclose the discovery of novel base paints or colorants with pigments having non-infrared-absorptive properties.

- 5.10 Hence, contrary to the view of the respondent, the recognition that two black colorants as claimed can be combined with a base paint in the single claim array would have been obvious to the skilled person in view of D5 or D32.
- 5.11 The respondent also argued that there was no pointer in D17 nor in D5 or D32 to the further features of claim 1, namely:
- packaging the base paint or stain in a point of sale-container with a volume of about 0.2 to 20 L equipped with an openable and reclosable lid, cap or closure for an opening through which colorant may be dispensed from an automated or manual colorant dispenser into the base paint or stain; and
  - the colorants being packaged in containers with a volume of 0,5 to about 5 L and from which colorant may be dispensed into the base paint or stain.
- 5.12 However, as noted by the appellant, although the claimed volumes are not mentioned, D17 refers to the selection of a base paint container, which must be

opened, and after dispensing at the tinting station, resealed (D17, page 361, final paragraph), thereby implying the feature "equipped with an openable and reclosable lid, cap or closure for an opening " of claim 1. Furthermore, no specific technical effect was attributed by the respondent to the specific volumes claimed for the base paint and colorant containers. As noted by the appellant, the claimed volumes are conventional volumes which the skilled person in view of its common general knowledge would choose arbitrarily. Furthermore, there is no indication that the relative size of the base paint container and liquid colorant containers is anything other than conventional, in particular in view of the teaching in D17 that tinter (i.e. colorant) addition to the base container is usually limited to about 7% by volume (page 360, final paragraph). Such arbitrary choices however cannot contribute to inventive step.

5.13 The further arguments of the respondent failed to convince the board.

5.13.1 First, it was argued that the skilled person would not have consulted D5 and D32 on the basis that these documents did not represent evidence of the common general knowledge before the priority date of the patent.

As stated by the appellant however, D5 and D32 are not relied on as common general knowledge, but as documents which in combination with D17 would lead the skilled person to the claimed subject-matter. The skilled person is a paint formulator and would have been aware of developments in the field, including the development of new pigments with specific properties made public before the priority date of the patent. As stated by

the appellant, D32 also specifically refers to infrared-reflective (i.e. non-infrared-absorptive) pigments in the context of roof and exterior building coatings, which are said to top the list of typical applications where heat reflectance is important (D32, fourth page, first full paragraph). Hence, in the view of the board, there is no doubt that the skilled person would have been aware of D5 and D32.

- 5.13.2 Second, in an argument related to the first, the respondent also suggested that D17 and D32 taught away from using a non-infrared absorptive black colorant. Specifically, D17 taught that colorants must be chosen on the basis of *inter alia* economy and opacity (page 364, first full paragraph). D32 taught that carbon black remained the traditional pigment of choice, even though its use resulted in higher heat absorption, because it was relatively stable and inexpensive on a tint-strength-per unit cost, and non IRR (i.e. non-infrared-absorptive) black chemistry could not match the jetness of either carbon black or CuCr-type blacks (D32, fourth page, penultimate paragraph and fifth page, second paragraph).

The board does not consider the above information in D17 or D32 to teach away from using non-infrared absorptive black colorants. Rather, both documents indicate that there are other factors to be considered in the choice of whether to employ one pigment or the other, such as cost, opacity and tint strength. There is no apparent reason why the same considerations would not apply to the nature and presumably the cost of black pigments employed according to claim 1. Hence, these indications cannot be understood to teach away from the claimed subject-matter.

5.13.3 Third, in an argument related to the suitability of D17 as closest prior art, the respondent argued that D17 was a general disclosure and did not describe a specific system or a common standard. Rather, the appellant argued that D17 taught that development and exploitation of various tinting systems was different throughout the world, and that sales outlets were faced with a choice from competing options in relation to such tinting schemes. Therefore, D17 failed to set out any of the systems disclosed therein as the necessary starting point for further development, implying, in the board's understanding, that the skilled person would not have started from the array in D17 addressed above.

The board disagrees. Although D17 indeed discusses many different possibilities, this does not detract from the disclosure in D17 of a tinting array as addressed above. The fact that a document may comprise more than one potential starting point does not detract from the validity of one of those points as a suitable starting point. Furthermore, although it is true that D17 teaches various competing options, constraints and questions of compatibility, there is no evidence that the subject-matter of claim 1 offers a universal solution to these issues. Rather, the subject-matter of claim 1 represents one possible choice from within the general teaching of D17.

5.13.4 Fourth, and in the same context, while recalling the objective technical problem as formulated above, namely the provision of interior and exterior paints and stains in a wide range of colors, it was argued by the respondent that the system of claim 1 offered a wider range of colour choice ("colour space") than the limited systems disclosed in D17. In particular, D17

reported a tendency to pastel colours, and reported "large areas of colour space that are inaccessible" (page 363, final 2 lines).

While it is accepted as set out above that this problem, in terms of the provision of a wide range of colours, is solved by the claimed subject-matter, the board fails to see how the inclusion of a further black pigment, namely a non-infrared-absorptive black pigment in a colorant array leads to a **wider** choice of colour ranges in the claimed system. Even if it were accepted that D17 is biased towards lighter colours, this difference cannot render the presently claimed subjected matter inventive. It was not denied by the respondent that the skilled person was aware of the existence of liquid colorants of varying hues from light to dark; indeed, as set out above, the patent does not concern the discovery of new liquid colorant hues. Hence, in the known array of D17, the range of colorants selected by the skilled person will depend on the range of colour space which it is intended or desired to access. Hence, if D17 is focused on lighter colours, this is not due to any reported technical difficulties in employing darker coloured colorants, but rather could potentially be due to e.g. a consumer preference for lighter colours. In any case, no such technical difficulties were invoked by the respondent.

Furthermore, in arguing that D17 taught away from the claimed subject-matter, the respondent submitted that one reason why the skilled person would not use a second black colorant was that doing so would sacrifice colour space by reducing the number of colorants that could be included in a tint system (e.g. letter dated 18 December 2023, page 15, first paragraph). This argument however appears contradictory with the idea

that the claimed subject-matter would allow, compared to D17, a wider range of colour choice than the limited systems disclosed in D17. Hence, this argument does not convince the board.

- 5.13.5 Fifth, the respondent argued that D18 was evidence that different pigments were used in different areas of application, and that the skilled person would therefore not include two different black pigments intended for different purposes (i.e. interior and exterior) in the same array. Specifically, D18 taught four different applications for the various pigments disclosed, only one of which was suitable for interior use ("Application 4"; D18, first page, right column).

However, as stated by the appellant, "Applications" 1,2 and 3 state that the pigments in question "can be used in exterior systems" or "are suitable for ... exterior use", which does not exclude them from interior use. Indeed, it seems logical that pigments suitable for outdoor use will invariably be suitable for milder interior conditions. Hence, this argument is not convincing.

- 5.13.6 Sixth, in a further related argument, the appellant submitted that D17 was silent on using at least one light-coloured non-infrared-absorptive base paint or stain. In D17 it was stated that as much as three to five bases were used which were in effect a "TiO<sub>2</sub> PVC ladder" covering a range of from zero to an upper TiO<sub>2</sub> level typical of ready mixed white paint, said to enable the production of deep, medium and light tints. Furthermore, sometimes coloured bases were required to widen the availability of colour space (D17, page 364, final full paragraph). This implied that the base paint

in D17 was not necessarily a non-infrared-absorptive base paint as required by claim 1.

If in light of the information in D5 or D32 the skilled person were to seek to prepare a paint or stain with high solar reflectance, it would be a logical matter to choose a non-infrared-absorptive base paint with which to mix the desired colorants. Furthermore,  $\text{TiO}_2$ , used in the base paints of D17 (as well as in the base paint of the patent; paragraph [0056]), is known to have high solar reflectance, such that the base paints of D17 comprising it would be expected to be non-infrared-absorptive base paints as required by claim 1.

Furthermore, although D17 does mention coloured bases, it also teaches that there is a trend away from such bases (D17, page 364, final full paragraph), and hence teaches away from this option. Finally, even if it were accepted that as stated in D17, different bases are required for different purposes, the contrary has not been demonstrated for the claimed subject-matter. Indeed, there is no indication in the patent, nor was there any allegation from the respondent that the patent concerns a new type of universal all-purpose base paint.

5.13.7 Finally, the respondent submitted throughout the proceedings that the claimed solution to the objective technical problem of providing interior and exterior paints and stains in a wide range of colors allowed the minimisation of added inventory, dedicated dispensers and dedicated floor space. Effectively, providing a system for both exterior and interior paints and stains avoided the need for two separate systems, each dedicated to the preparation of either interior or exterior paints or stains.

In the view of the board, this effect cannot render the claimed subject-matter inventive. Specifically, since the skilled person would have been aware of non-infrared-absorptive black pigments from *inter alia* D5 or D32 as set out above, and their utility in exterior applications for the purpose of avoiding solar heat-up, it would have been obvious, starting at D17 and in the light of D5 or D32, to include both types of black pigment in a single array, with a view to allowing the preparation of both interior and exterior (non-infrared-absorptive) paints. Even assuming, as alleged but not demonstrated by the respondent, that separate and distinct systems dedicated to the preparation of paints for interior and exterior use existed in the prior art, the resultant minimisation of added inventory, dedicated dispensers and dedicated floor space would have been the entirely trivial consequence.

5.14 Consequently, the subject-matter of claim 1 lacks inventive step pursuant to Article 56 EPC.

5.15 The main request (patent as granted) is not allowable.

6. Remittal - Article 11 RPBA

6.1 The respondent requested that the case be remitted to the opposition division if the main request should be considered not allowable. The appellant requested that the case not be remitted.

6.2 According to Article 11 RPBA, the board shall not remit a case to the department whose decision was appealed for further prosecution, unless special reasons present themselves for doing so. As a rule, fundamental deficiencies which are apparent in the proceeding before that department constitute such special reasons.

- 6.3 As reasons justifying a remittal, the respondent argued that the auxiliary requests had not been dealt with in opposition proceedings. Hence, if not remitted, the respondent-proprietor would have had only one chance to defend said requests, whereas the post-grant option of national nullity proceedings remained for the appellant.
- 6.4 The board does not consider the reasons provided by the respondent to represent special reasons in the sense of Article 11 RPBA. No fundamental deficiencies in the proceeding before the opposition division were alleged by the respondent. Furthermore, as stated by the appellant, inventive step is the only outstanding issue, and had already been examined extensively by the board in relation to the main request. Hence, there is no impediment to the board examining the auxiliary requests, and also no further special reasons in the context of Article 11 RPBA on the basis of which a remittal to the opposition division could be justified.
- 6.5 Hence the board decided not to remit the case to the opposition division pursuant to Article 11 RPBA.

#### All auxiliary requests - admittance

7. As set out above in relation to the parties' requests, the appellant requested that all auxiliary requests submitted by the respondent with the reply to the statement of grounds of appeal not be admitted into appeal proceedings.
- 7.1 Since as set out below, the board found none of these requests to involve an inventive step pursuant to

Article 56 EPC, there was no need for the board to address their admittance into the proceedings.

Auxiliary request 1A - inventive step, Article 56 EPC

8. Claim 1 of auxiliary request 1A differs from claim 1 of the main request in that in component a), "... opening through which colorant *may be* dispensed" is amended to "... opening through which colorant *is* dispensed", and in component b) "...colorant *may be* supplied" is amended to "...colorant *is* supplied"

8.1 The respondent submitted that in comparison to the term "may be" in claim 1 of the main request which expressed suitability, now claim 1 was limited to "is".

8.2 Despite requesting further explanation from the respondent during oral proceedings, the board has difficulty understanding this limitation in practice. For example, in component a), whether a colorant "may be" or "is" dispensed through an opening as stated in the claim, both options require the presence of said opening. If on the other hand the amendment is intended to express a process feature as suggested by the appellant, i.e. that the act of dispensing colorant through the opening factually must take place, then the board notes that claim 1 is a product claim, which is not limited in scope by the introduction of such process features.

8.3 Notwithstanding the above, the respondent at oral proceedings and upon request from the board failed to explain how the amendments in claim 1 would establish inventive step compared to claim 1 of the main request. Since the board does not see how inventive step could be established by said amendments, it sees no reason to

deviate from its conclusion for claim 1 of the main request.

- 8.4 Consequently, claim 1 of auxiliary request 1A lacks inventive step pursuant to Article 56 EPC.

Auxiliary request 1B - inventive step, Article 56 EPC

9. Compared to claim 1 of the main request, claim 1 of auxiliary request 1B includes the following additional text in component b):

*"wherein the non-infrared-absorptive black colorant is dispensed into the base paint or stain when a black-pigmented exterior paint or stain is required, and the infrared-absorptive black colorant is dispensed into the base paint or stain when a black-pigmented interior paint or stain is required"*

- 9.1 The respondent argued that the amendment confirmed that paints or stains made with the system of claim 1 were not prepared by intermixing primary pigments.

- 9.2 The respondent failed to explain to the board how this amendment could establish inventive step compared to claim 1 of the main request. In any case, as noted by the appellant, the amendments concern process features which do not limit the scope of product claim 1. Notwithstanding this, the board notes that the conclusions reached above for claim 1 of the main request are already based on the assumption that the non-infrared-absorptive black colorant is to be employed when a black-pigmented exterior paint or stain is required, and the infrared-absorptive black colorant when a black-pigmented interior paint or stain is required.

9.3 Consequently, claim 1 of auxiliary request 1B lacks inventive step pursuant to Article 56 EPC.

Auxiliary request 1C - inventive step, Article 56 EPC

10. Compared to claim 1 of the main request, claim 1 of auxiliary request 1C includes the amendments to both claim 1 of auxiliary requests 1A and 1B.

10.1 The respondent submitted no further arguments according to which claim 1 of this request would involve an inventive step over and above the arguments submitted in relation to auxiliary requests 1A and 1B.

10.2 Hence, claim 1 of auxiliary request 1C lacks inventive step pursuant to Article 56 EPC for the same reasons as provided above for the respective claim 1 of auxiliary requests 1A and 1B.

Auxiliary requests 2, 2A, 2B, 2C, 3, 3A, 3B and 3C - inventive step, Article 56 EPC

11. The respective claim 1 of auxiliary requests 2, 2A, 2B, 2C, 3, 3A, 3B, and 3C is identical to claim 1 of the main request and auxiliary requests 1A, 1B and 1C, respectively, and hence lacks inventive step pursuant to Article 56 EPC for the same reasons as provided above.

Auxiliary requests 4, 4A, 4B and 4C - inventive step, Article 56 EPC

12. Compared to claim 1 of the main request, claim 1 of auxiliary request 4 includes the following additional text in component b):

*"wherein the pigments in the base paint or stain and one or more of the pigments in the array of colorants are non-infrared-absorptive,"*

- 12.1 The respondent stated in relation to the relevance of the added text to inventive step that there was no teaching in D5 and D32 that pigments should be combined in the manner specified.
- 12.2 As noted by the appellant however, the added text merely states what is already expressed in claim 1 of the main request, in different words. Specifically, in component a) of claim 1 of the main request, the base paint is already described as non-infrared-absorptive, which implies that it must comprise a non-infrared absorptive pigment. Furthermore, the array of component b) already includes in item (iii) one or more additional liquid colorants made with non-infrared-absorptive pigments.
- 12.3 Hence, the subject-matter of claim 1 of auxiliary request 4 lacks inventive step pursuant to Article 56 EPC for the same reasons as set out above for claim 1 of the main request.
- 12.4 The amendments to claim 1 of auxiliary requests 4A, 4B and 4C compared to claim 1 of auxiliary request 4 are same as those to claim 1 of auxiliary requests 1A, 1B and 1C respectively compared to claim 1 of the main request. Hence, in addition to the reasons provided above for claim 1 of auxiliary request 4, claim 1 of auxiliary requests 4A, 4B and 4C lack inventive step pursuant to Article 56 EPC for the reasons provided above for auxiliary requests 1A, 1B, and 1C, respectively.

Auxiliary requests 5, 5A, 5B and 5C - inventive step, Article 56 EPC

13. Compared to claim 1 of the main request, claim 1 of auxiliary request 5 includes the following additional text in component b):

*"wherein the pigments in the base paint or stain and **all pigments in the array of colorants but the infrared-absorptive black pigment** are non-infrared-absorptive,"* (bold text denoting text added compared to claim 1 of auxiliary request 4)

- 13.1 With this amendment, compared to claim 1 of auxiliary request 4, all base paints or stains and colours with the exception of the infrared absorptive black pigment are required to be non-infrared-absorptive.
- 13.2 The respondent argued that there was no teaching in the prior art documents D17, D5 or D32 that the array should not include any infrared-absorptive pigments.
- 13.3 The board disagrees. As set out above for claim 1 of the main request, it would have been a logical step for the skilled person, purposefully having selected a non-infrared absorptive black pigment, to also include only further components comprising non-infrared-absorptive pigments, since doing otherwise would defeat the purpose of and the rationale behind having chosen said black pigment in the first place. On the other hand, if the skilled person were not concerned with solar radiation, for example, if an interior paint or stain were to be desired, then the selection of non-infrared-absorptive pigments to the exclusion of infrared-absorptive pigments (with the potential exception of

infrared-absorptive black) can only be seen as an arbitrary choice, since the effect of avoiding solar radiation is no longer relevant in an interior context.

13.4 For these reasons, in addition to the reasons provided for claim 1 of the main request, above, claim 1 of auxiliary request 5 lacks inventive step pursuant to Article 56 EPC.

13.5 The amendments to claim 1 of auxiliary requests 5A, 5B and 5C compared to claim 1 of auxiliary request 5 are same as those to claim 1 of auxiliary requests 1A, 1B and 1C respectively compared to claim 1 of the main request. Hence, in addition to the reasons provided above for claim 1 of auxiliary request 5, claim 1 of auxiliary requests 5A, 5B and 5C lack inventive step pursuant to Article 56 EPC for the reasons provided above for auxiliary requests 1A, 1B, and 1C, respectively.

Auxiliary requests 6, 6A, 6B and 6C - inventive step, Article 56 EPC

14. Compared to claim 1 of the main request, claim 1 of auxiliary request 6 includes the following additional text in component b):

*"wherein the infrared-absorptive black liquid colorant is the only colorant in the array containing infrared-absorptive pigment"*

14.1 As stated by the board at oral proceedings and not contested by the respondent, this amendment is not different in meaning from the text added to claim 1 of auxiliary request 5, above.

14.2 Consequently, for the same reasons as set out above for claim 1 of auxiliary requests 5, 5A, 5B and 5C, claim 1 of auxiliary requests 6, 6A, 6B and 6C lacks inventive step pursuant to Article 56 EPC.

Auxiliary requests 7, 7A, 7B and 7C - inventive step, Article 56 EPC

15. Claim 1 of each of auxiliary requests 7, 7A, 7B and 7C is identical to claim 1 of auxiliary requests 6, 6A, 6B and 6C respectively, and consequently lacks inventive step pursuant to Article 56 EPC for the same reasons as provided above.

Auxiliary requests 8, 8A, 8B and 8C - inventive step, Article 56 EPC

16. Compared to claim 1 of the main request, claim 1 of auxiliary request 8 includes the following additional text in component b):

*"wherein the pigments in the base paint or stain and all pigments in the array of colorants but the infrared-absorptive black pigment are non-infrared-absorptive, and wherein the array of colorants includes at least colorants respectively containing non-infrared-absorptive black pigment, infrared-absorptive black pigment and at least further colorants containing non-infrared-absorptive white, yellow-hued, green-hued, blue-hued and red-hued pigments"* (bold text denoting text added compared to claim 1 of auxiliary request 5)

16.1 The respondent argued that the combination of features in claim 1, in particular the inclusion of the specific non-infrared -absorptive white-, yellow-, green-, blue- and red-hued pigments was not taught in D17 in

combination with D5 or D18. In particular, there was no teaching that this combination could be used in a single array with two different black colorants as specified in claim 1.

- 16.2 The board disagrees. As stated by the appellant, D17 (page 364, first full paragraph) mentions a "typical core" of tinters which would include *inter alia* white, organic red, organic yellow and organic blue, and also mentions additional tinters including *inter alia* green.
- 16.3 Moreover, as indicated repeatedly above, even if the precise pigment colours were not explicitly mentioned in D17, the patent does not concern new pigments: as stated above in relation to claim 1 of the main request, starting from the array disclosed in D17, the skilled person would freely select appropriate known paint components in terms of base paints, black colorants and further colorants depending on the desired outcome. This relates both to the specific colour choice as well as to the nature of the pigment in terms of its infrared- or non-infrared-absorptive properties. If a specific pigment colorant is publically available, it will be considered by the skilled person for a point-of-sale system. Hence, a pointer or a disclosure in D17 towards specific choices is not needed, because the skilled person would have tailored the components according to the desired result.
- 16.4 Hence the subject-matter of claim 1 of auxiliary request 8 lacks inventive step for these reasons, in combination with the reasons provided in relation to claim 1 of the main request.

16.5 The amendments to claim 1 of auxiliary requests 8A, 8B and 8C compared to claim 1 of auxiliary request 8 are same as those to claim 1 of auxiliary requests 1A, 1B and 1C respectively compared to claim 1 of the main request. Hence, in addition to the reasons provided above for claim 1 of auxiliary request 8, claim 1 of auxiliary requests 8A, 8B and 8C lack inventive step pursuant to Article 56 EPC for the reasons provided above for auxiliary requests 1A, 1B, and 1C, respectively.

Auxiliary requests 9, 9A, 9B and 9C - inventive step, Article 56 EPC

17. Claim 1 of each of auxiliary requests 9, 9A, 9B and 9C is identical to claim 1 of auxiliary requests 8, 8A, 8B and 8C respectively, and consequently lacks inventive step pursuant to Article 56 EPC for the same reasons as provided above.

Auxiliary requests 10, 10A, 10B and 10C - inventive step (Article 56 EPC)

18. Compared to claim 1 of the main request, claim 1 of auxiliary request 10 includes the following additional text in component b):

*"wherein the pigments in the base paint or stain and all pigments in the array of colorants but the infrared-absorptive black pigment are non-infrared-absorptive, and wherein the ~~array of colorant array~~ includes comprises ~~at least~~ colorants respectively containing non-infrared-absorptive black pigment, infrared-absorptive black pigment and at least **seven** further colorants respectively containing non-infrared-absorptive white, ~~yellow-hued, green-hued, blue-hued~~*

~~and red-hued~~ **green, blue, red, yellow**, yellow oxide and red oxide pigments." (strike though and bold text denoting deletion and addition compared to claim 1 of auxiliary request 9)

- 18.1 The respondent did not submit any reasons why the amendments to claim 1 of auxiliary request 10, compared to claim 1 of auxiliary request 9, which essentially concern minor amendments to the "further colorants", would establish inventive step. The board also does not see any reason why the same conclusion set out above for claim 1 of auxiliary request 9 would not apply equally.
- 18.2 Hence, the subject-matter of claim 1 of auxiliary request 10 lacks inventive step pursuant to Article 56 EPC.
- 18.3 The amendments to claim 1 of auxiliary requests 10A, 10B and 10C compared to claim 1 of auxiliary request 10 are same as those to claim 1 of auxiliary requests 1A, 1B and 1C respectively compared to claim 1 of the main request. Hence, in addition to the reasons provided above for claim 1 of auxiliary request 10, claim 1 of auxiliary requests 10A, 10B and 10C lack inventive step pursuant to Article 56 EPC for the reasons provided above for auxiliary requests 1A, 1B, and 1C, respectively.

Auxiliary requests 11, 11A, 11B and 11C - inventive step, Article 56 EPC

19. The respective claim 1 of auxiliary requests 11, 11A, 11B and 11C is identical to claim 1 of auxiliary requests 10, 10A, 10B and 10C, respectively.

Hence, the same conclusions apply, and the subject-matter of claim 1 of auxiliary requests 11, 11A, 11B and 11C lacks inventive step pursuant to Article 56 EPC for the same reasons as provided above.

Auxiliary requests 12, 12A, 12B and 12C - inventive step, Article 56 EPC

20. The respective claim 1 of auxiliary requests 12, 12A, 12B and 12C is identical to claim 1 of the main request and auxiliary requests 1A, 1B and 1C, respectively, and hence lacks inventive step pursuant to Article 56 EPC for the same reasons as provided above.

Auxiliary requests 13, 13A, 13B and 13C - inventive step, Article 56 EPC

21. The respective claim 1 of auxiliary requests 13, 13A, 13B and 13C is identical to claim 1 of auxiliary requests 8, 8A, 8B and 8C, respectively, and hence lacks inventive step pursuant to Article 56 EPC for the same reasons as provided above.

Auxiliary requests 14, 14A, 14B and 14C - inventive step, Article 56 EPC

22. The respective claim 1 of auxiliary requests 14, 14A, 14B and 14C is identical to claim 1 of auxiliary requests 10, 10A, 10B and 10C, respectively, and hence lacks inventive step pursuant to Article 56 EPC for the same reasons as provided above.

Conclusion

23. None of the respondent's claim requests are allowable pursuant to Article 56 EPC.

## 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:



M. Schalow

M. O. Müller

Decision electronically authenticated