

OPINION UNDER SECTION 74A

Patent	GB 2500162 B
Proprietor(s)	Newlife Paints Ltd
Exclusive Licensee	
Requester	Andrew Barnwell
Observer(s)	Newlife Paints Ltd
Date Opinion issued	23 September 2020

The request

1. The Comptroller has received a request from Andrew Barnwell (the requester) to issue a validity opinion in respect of patent GB 2500162 B (the patent) in the name of Newlife Paints Limited (the proprietor). The request questions the validity of the patent on the basis that certain of the claims are either not novel or lack an inventive step based on submitted prior art documents.
2. The patent is based on a PCT application published as WO 2012/095520 A2 having a filing date of 13 January 2012 and a claim to a priority date of 14 January 2011. The patent was granted on 8 April 2020 and is in force.
3. Observations were received from the proprietor.
4. Observations in reply were received from the requester.

Preliminary Matters

5. The prior art accompanying the request includes a document (D9) titled "Final Report: Sampling, Testing and Evaluation of Recyclable and Recycled Latex Paint" by Max T. Wills. This document formed part of third party observations (referred to as D4) received on 12 December 2019 during prosecution of the patent. The third party observations based on this document were clearly directed to the patentability of claim 1 only, and have apparently only been considered in this limited way. In view of the fact that this document has been considered previously in relation to claim 1, I will not consider it further in this regard. I will however consider D9 as it applies to other claims.

6. Processing of this opinion has been somewhat disrupted by the interrupted period announced by the Office due to Covid-19. As a consequence, the period for observations was very much extended, such that the proprietor filed further observations (15 July 2020) after the requester had filed their initial observations in reply (03 July 2020). The further observations were clearly in response to the requester's observations in reply. Rule 96(1) prescribes that observations may be filed "on any issue raised by the request". I do not consider that to be particularly limiting and all the arguments covered in the observations and the further observations are considered to relate to *issues raised by the request*. I will accordingly consider the further observations as part of my opinion.
7. Following the filing of these further observations, the requester filed further observations in reply. Observations in reply are required to be confined strictly to matter in reply. As this requirement is met for both sets of observations in reply I will consider both in reaching my opinion.

The patent

8. The patent relates to a method for recycling paint and essentially comprises testing and adjusting various physical parameters of a disposed-of paint, typically by adding standard paint constituents, so that unusable paint is restored to a usable state. It is perhaps best summarised by simply referring to claim 1 which reads as follows:
 1. *A method for manufacturing paint, comprising the steps of:*
 - (a) *providing a paint precursor, comprising degraded paint; and*
 - (b) *treating the paint precursor by:*
 - testing the pH of the paint precursor and, if necessary, adjusting the pH to lie within a predetermined range;*
 - testing the viscosity of the paint precursor and, if necessary, adjusting the viscosity to lie within a predetermined range of 2×10^3 centipoise or more, measured after the paint precursor is allowed to stand for 5 minutes; and*
 - testing one or more of the following properties of the paint precursor and, if necessary, adjusting the property or properties to lie within a predetermined range:*
 - (i) *specific gravity; and*
 - (ii) *solids content,*
9. The pH, viscosity and at least one of the specific gravity or solids content are tested and at least one of these parameters is adjusted. Whilst no specific values are provided for the pH, solids content or specific gravity, the viscosity is specified as being at least 2000 centipoise.

Claim construction

10. As a first step in determining the validity of the patent I must correctly construe the claims. This means interpreting them in the light of the description and drawings as instructed by Section 125(1). In doing so I must interpret the claims in context through the eyes of the person skilled in the art. Ultimately the question is what the person skilled in the art would have understood the patentee to be using the language of the claims to mean. This approach has been confirmed in the decisions of the High Court in *Mylan v Yeda*¹ and the Court of Appeal in *Actavis v ICOS*².
11. I consider the skilled person would be a manufacturer of recycled paints.
12. As well as independent claim 1 directed to a method, there are pseudo-independent claims. Claim 47 is directed to an apparatus for manufacturing paint according to claim 13, and claims 59 and 67 are product-by-process claims.
13. The requester has specifically sought an opinion on the validity of claims 1, 59 and 67. Although the request includes a statement that “It is also submitted that none of the dependent claims provide novelty and/or inventive step over the prior art cited herein”, no argument is provided. Without such argument, it is not possible for the proprietor to rebut the assertion in their observations. I will therefore limit the opinion to a consideration of claims 1, 59 and 67 only.
14. Claims 59 and 67 read as follows:
 59. *Paint made according to the method of any one of claims 43-46, comprising:*
 - (i) *one or more odour producing paint breakdown products, and*
 - (ii) *one or more odour-reducing agents.*
 67. *Paint made according to the method of any of claims 1 to 46.*
15. For completeness, claim 43 reads:
 43. *A method according to any preceding claim, further comprising the addition of an odour-reducing material.*
16. Claims 59 and 67 are product-by-process claims and as such they are construed as a claim to the product as such (in line with the decisions in *Kirin-Amgen*³ and *T150/82*⁴). Such claims are not rendered novel where they are only distinguished from the prior art by a new process of manufacture. The products themselves must be new and inventive.
17. The main contention in relation to the construction of claim 1 appears to lie in how the

¹ *Generics UK Ltd (t/a Mylan) v Yeda Research and Dev. Co. Ltd & Anor* [2017] EWHC 2629 (Pat)

² *Actavis Group & Ors v ICOS Corp & Eli Lilly & Co.* [2017] EWCA Civ 1671

³ *Kirin-Amgen Inc v Hoechst Marion Roussel Ltd* [2005] RPC 9

⁴ *T150/82 International Flavors and Fragrances Inc.* [1984] OJEP 309.

term “*degraded paint*” should be construed. The proprietor has pointed to the final paragraph of page 3 of the patent which states “*degraded paint is regarded as unusable in its supplied form*”. They go on to allege that this means the nature and extent of the degradation is such that degraded paint is unusable or unsuitable for use as a paint and this is to distinguish it from leftover paint which is still usable. The proprietor also points to the preceding paragraph of the description which outlines types of degradation in the following terms:

“the degraded paint is typically degraded water-based emulsion and is further typically characterised by one or more or in extreme cases all of the following degradations: the presence of large foreign objects ...; uneven texture, at least in part caused by the presence of pieces of hardened paint; paint that has split or separated into its component parts; the presence of paint breakdown products ...; a pH outside a predetermined range ...; a solids content outside a predetermined range ...; a viscosity outside a predetermined range ...; and a specific gravity outside a predetermined range ...”

18. The requester in their further observations in reply notes that this definition does not accord with paint that is wholly unusable. They suggest that paint with a large foreign object in may be otherwise perfectly usable and could have otherwise ideal characteristics. They also note that this definition of degraded paint includes separated paint and suggest that could include unopened paint which has been stored and simply needs to be stirred before use as is common for all paints. They also point out that to be degraded according to this definition only one of the characteristics needs to be outside of a predetermined range without particularising what those predetermined ranges are.
19. I agree with all the requester’s points on this issue. The skilled person would understand degraded paint to be as defined in the penultimate paragraph of page 3, and is to be construed broadly. Essentially degraded paint is paint that no longer conforms to its original specification or no longer meets certain agreed standards. It might be regarded as unusable in certain circumstances, for example where a particular quality standard of paint has been specified, but it might still function as a paint albeit of poorer quality.
20. Ultimately and in line with the definition on page 3, I consider that the skilled person would understand degraded in claim 1 to be a reference to the tests in claim 1. Any paint which falls outside one of the predetermined ranges such that it requires adjustment to bring it within the predetermined range would be regarded as degraded.
21. Also in relation to claim 1 the requester has suggested that the “*if necessary*” steps of the method may be deleted because they do not necessarily have to be carried out and a method devoid of these steps might nevertheless fall within the scope of the claim. However, I see no reason to consider them redundant in the way suggested. It is clear to the skilled person that these steps form a part of the method but also that they do not necessarily have to be carried out and may not need to be carried out in order for a method to fall within the scope of the claims.
22. The requester has in particular suggested that the phrase “*if necessary, adjusting the viscosity to lie within a predetermined range of 2×10^3 centipoise or more*”, can be ignored such that the paint viscosity is immaterial. Whilst a particularly literal

interpretation of this phrase might suggest that one could arbitrarily decide whether or not it was necessary to adjust the viscosity, the claim is clearly directed to ensuring the viscosity of the paint is tested and if found to be less than 2×10^3 (2000) cP it is adjusted to be above that figure.

23. There is one further issue in relation to the viscosity referred to in claim 1. Claim 1 requires the viscosity to be tested and adjusted so that it is a minimum of 2000 centipoise. The skilled person would be well aware that latex paints are typically non-Newtonian shear thinning fluids where the apparent viscosity decreases with increasing shear rate. This property of paint allows them to be spread easily by brush or roller (exhibiting low viscosity at high shear) without dripping and sagging once applied (high viscosity at low shear). Paints are also typically thixotropic which means that they take a certain amount of time to return to a more viscous equilibrium state following application of a shear e.g. brushing. This allows for good levelling (hiding of brush strokes) without subsequent sagging. The thixotropic nature of paint is recognised in the patent which sets out different viscosities depending on whether the paint has been left to settle for 5 minutes or an hour. In example 1 of the patent (page 25) it appears the viscosity increases from 6000 cP to 15000 cP simply by allowing the paint to settle for an hour, and this is due to thixotropy.
24. The description sets out the viscosity test performed (page 9, 2nd paragraph) and it comprises use of a Brookfield LV4 spindle rotating at 0.6 rpm to generate a shear rate of 0.125 per second. This is a low shear rate and would consequently generate a high viscosity. Most standard paint viscosities are quoted in Krebs units (KU) (or centipoise converted from Krebs units) derived from the test set out in ASTM D562⁵ which is based on an offset paddle rotating at 200 rpm (low-medium shear rate, approx. 100 s^{-1}). Owing to the typical shear thinning of paints, values of viscosity derived from D562 would generally be lower than those derived from the test set out in the description. The skilled person would of course understand the value specified in claim 1 is based on the test set out in the description.

Prior art

25. The main prior art that the requester wishes to rely on and which I am considering for this opinion comprises the following documents:
- D5 "The California Integrated Waste Management Board (CIWMB): C&D Recycling Program: Recycled Latex Paint"; October 2002.
 - D6 "Green Seal Standard for Recycled-Content Latex Paint"; 1 August 2006.
 - D7 "Department of Ecology State of Washington: Environmentally Preferable Purchasing Fact Sheet: Recycled Paint"; March 2008.
 - D8 US 4607592 (RICHTER); 26 August 1986.
 - D9 "Final Report: Sampling, Testing and Evaluation of Recyclable and Recycled Latex Paint"; California Integrated Waste Management Board

⁵ ASTM-D562: Standard Test Method for Consistency of Paints Measuring Krebs Unit (KU) Viscosity Using a Stormer-Type Viscometer.

(CIWMB) / Wills, T. M.; December 1995.

26. D5 to D7 are generally similar documents giving an overview of the recycling process for latex paints and some of the characteristics of such paints.
27. D8 is a published patent application directed specifically to recycling paint overspray created during paint spraying operations.
28. D9 is a detailed document analysing paints collected for recycling, techniques used in the recycling process and some specific examples of recycled paints obtained by blending recyclable paints with other ingredients. As it has already been considered in relation to claim 1 as part of third party observations, I am not considering it further in relation to claim 1.
29. The requester has also referred (D10) to a YouTube video – “CanadaPaintExport Recycled Paint” (<https://www.youtube.com/watch?v=w9U5dH4D7XA>; 8 December 2009) but has not provided any substantive argument in relation to it. The content of this video is similar to the content of D5 to D7 and provides an overview of how paints are recycled.
30. Four further patent applications are referred to in the request (D11-D14) which describe paints having particular viscosities:

D11	US 7153356 B1	(HARRIS ET AL);	26 December 2006.
D12	KR 20030094607 A	(LEE);	18 December 2003.
D13	EP 0889100 A1	(ROHM & HAAS);	7 January 1999.
D14	CN 101113302 A	(CHUNG HUNG);	30 January 2008.
31. Finally there is a reference (D15) to “The handbook of biocide and preservative use”; Rossmore, H.W.; 31 December 1994. This book is only of relevance to claim 59.

Claim 1 - Novelty

32. In making their argument regarding a lack of novelty of claim 1, the requester has relied on their construction of claim 1 which ignores the requirement that the viscosity of the paint should be at least 2000 cP. None of the documents D5 to D8 specify a figure for viscosity. Accordingly, none of them are considered to describe methods falling within the scope of claim 1.
33. Furthermore, having carefully considered D5 to D7 in light of the request and the proprietor’s observations, I consider that none of them describe testing the specific gravity or solids content of the paint, and claim 1 requires that at least one of these properties is tested.
34. In relation to D5 the requester argues (paragraph 5.1) that “D5 also discloses adjusting solids content and specific gravity (by virtue of filtering and mixing with standard paint)”. As pointed out by the proprietor, there is no step of testing the solids content prior to filtering and filtering is carried out regardless. This is in contrast to claim 1 which requires the solids content is tested and adjusted if necessary. The requester has responded by suggesting that there is no disclosure in the specification of how the solids content is to be tested and also that filtering is itself a test of solids

content, which only acts to adjust the solids content if necessary by filtering out unwanted solids.

35. Firstly, solids content is a well-known property of paint and, I consider that methods for testing the solids content of paint would be part of the skilled persons common general knowledge. Secondly, the solids content of paint is unrelated to the need to filter it. Filtering is required essentially to remove *lumps* and detritus, and whilst filtering degraded paint would typically reduce the solids content by removing such unwanted solid material, that is not its intended purpose. It may well be the case that a higher solids content is required and filtering would not achieve that objective. Filtering cannot therefore be considered by the skilled person to be a test of solids content which automatically adjusts the solids content to lie within a predetermined range. I also note that the patent refers to filtering as a further optional step carried out “before and/or after treating the paint”.
36. For the avoidance of doubt, I also consider that filtering cannot be regarded as a test or adjustment of specific gravity. The effect of filtering on specific gravity cannot be determined as it is dependant on the density of any filtered components. Tests for specific gravity would be within the skilled person’s common general knowledge.
37. D6 also refers to filtering and the requester has similarly argued that this constitutes a step of testing and adjusting the solids content. As above, I do not agree that it constitutes such a step.
38. Both D6 and D7 further refer to testing the fineness of grind. At least in relation to D7 the requester has argued that testing fineness of grind constitutes a step of testing the solids content. Fineness of grind is a measure of the coarseness of particles disposed in a paint. It is unrelated to the solids content. Testing the fineness of grind gives no information about the solids content and cannot be considered a test of solids content.
39. D5, D6 and D7 all therefore fail to disclose a step of testing at least one of the solids content or specific gravity as required by claim 1 such that claim 1 is not anticipated by any of these documents.
40. D8 describes a process for recovering paint overspray that occurs during spray painting. In operation the walls and floor of a spray painting booth are flooded with a film of water. Any overspray is entrained in the water film which is collected and then filtered to separate the water from the oversprayed paint material. This reclaimed paint material is fed into an automatically controlled preparation unit where its physical and chemical characteristics are continuously checked. The characteristics of the reclaimed paint are compared with those of the fresh paint and quality of the reclaimed paint is adjusted accordingly, e.g. by diluting or concentrating. In particular, this document discloses measuring the specific gravity (measuring unit 52), viscosity (54) and pH (55) of the reclaimed raw paint.
41. The proprietor has argued that the reclaimed overspray does not comprise degraded paint as required by claim 1, in particular due to the short time between being sprayed as fresh paint and reclaimed as overspray. I do not agree with this line of argument. D8 clearly contemplates the reclaimed paint will be degraded in some way compared to fresh paint and provision is made for testing and adjusting the reclaimed paint. In view of the broad interpretation I have given to the term degraded in claim 1 I consider

that the reclaimed paint of D8 is a paint precursor comprising degraded paint as required by claim 1.

42. However, in order to fall within the scope of claim 1, the viscosity must be at least 2000 centipoise, measured according to the test set out in the description. There is no value for the viscosity of the paint disclosed in D8 and D8 does not therefore anticipate claim 1 of the patent.
43. Although D10 has not been argued by the requester I shall consider it briefly. The one part of the video of particular relevance appears to be at 1'44 where it specifies that the recycled paint is tested for viscosity, sag, spatter, flow, VOCs and heavy metal content. The video also shows a paint being tested for opacity. In common with D5 to D7, no particular value of viscosity is given nor is there any indication of a test for solids content or specific gravity.
44. None of D5 to D8 and D10 disclose a viscosity of 2000 cP or more. D5 to D7 and D10 also do not disclose testing of specific gravity or solids content. Claim 1 is not therefore anticipated by any of these documents.

Claim 1- Inventive step

45. The main features of claim 1 missing from the cited prior art are firstly the step of testing at least one of the specific gravity or solids content of the paint precursor, and secondly adjusting the viscosity to be at least 2000 cP.
46. In relation to the first of these, the requester has not put forward any substantive argument regarding the obviousness of this step, instead seeking to rely on their argument that it is disclosed in the prior art. In the absence of any further evidence, it does not strike me as being an obvious step. In the context of recycled paints of unknown ingredients, it seems to me that characteristics such as viscosity, opacity and sag resistance would be more important than a particular value of solids content or specific gravity. These properties are also able to be measured quickly and easily.
47. On this basis I do not consider it obvious to measure either solids content or specific gravity for any of the methods of D5 to D7 or D10, and claim 1 does not therefore lack an inventive step based on these documents.
48. In relation to viscosity, the requester has provided a number of documents (D11 to D14) which disclose paints having a viscosity greater than 2000 cP. However, these documents are all patent applications which relate to specific products. For example, D11 relates specifically to a children's washable paint, D12 to a metallic paint, D13 to a road traffic marking and D14 to an asphalt paint. I do not consider that they are representative of the skilled person's common general knowledge. I do not therefore take these documents into account in assessing the inventiveness of claim 1.
49. Having already considered that D5 to D7 do not support a lack of inventive step argument in relation to claim 1, I will consider primarily viscosity in relation to D8. D8 relates specifically to a spray paint. Paints for spraying are typically formulated to have a lower viscosity than brush applied paints. The requester notes in the request that *"Paint to be applied as a spray has a significantly lower viscosity than those applied by*

a brush". Traditionally, viscosity of spray paint has been determined by measuring the time it takes for the paint to empty out of a standardised *viscosity cup* (e.g. BS, DIN, Ford or Zahn) having a specific size orifice in its base. These cups typically measure viscosities up to about 1000 cP but only at the particular shear rate relevant to the cup and fluid being measured. I have no information to relate viscosity measured using cups to viscosity measured using the method set out in the description. I also have no other information detailing whether the 2000 cP viscosity according to the test in the description is typical for spray paints. In the absence of such evidence I cannot determine if it would be obvious to implement the method of D8 using a minimum viscosity of 2000 cP. I do not therefore consider that claim 1 lacks an inventive step based on D8.

50. I do not consider it obvious to include a step of testing either the solids content or the specific gravity in the methods of D5 to D7 and D10. Accordingly claim 1 is inventive in relation to these documents.
51. I do not have sufficient evidence to decide if it is obvious to specify a minimum viscosity of 2000 cP in the method of D8. The lack of inventive step argument in relation to claim 1 based on this document fails accordingly.

Claim 67

52. In relation to claim 67, the requester has argued:

Claim 67 is a product-by-process claim for a paint made according to the method of claim 1. Thus the paint is produced by simply testing the properties of a degraded paint. Degraded paint of course is already known and the testing of degraded paint cannot result in any new features. The method requires that only one of the pH, specific gravity, solids content and viscosity of the paint precursor is adjusted to lie within an unspecified range (the other adjustments are optional). This adjustment is in an unspecified amount and thus it is not possible to tell if the paint has been treated to adjust its properties or already had those properties.

Not only is it impossible to distinguish new paint from degraded paint that has been adjusted to have the same properties as the new paint, it is also not possible to distinguish degraded paint already having certain properties from degraded paint that has been adjusted to have the same properties. For example, there would be no way of distinguishing a degraded paint already having a suitable pH from a degraded paint having had its pH tested and adjusted.

53. It is the second of these paragraphs which is most pertinent. In view of the way product-by-process claims are construed, for a paint to fall within the scope of claim 67 it is only necessary that it has the physical parameters defined in claim 1. There is no requirement that it actually be tested or have anything added to it. On the face of it there is no way of telling whether any particular paint has been deliberately modified to achieve particular physical parameters, or whether those are the paint's original properties or whether the paint has degraded to that state. For the purpose of claim 67 it is immaterial the route taken to arrive at the product.

54. The proprietor has countered the requester's arguments by suggesting that it was incumbent on the requester to manufacture a paint according to the method of claim 1 and then compare the composition of that paint with the composition of known prior art paints. Only if these compositions are identical can claim 67 be anticipated. However, given that the only parameter specified in claim 1 is the viscosity and based on the fact that product-by-process claims are only allowable if the product itself is novel and inventive, I do not consider on the face of it that should be necessary. As long as a viscosity of 2000 cP was known for paints at the priority date, I do not think it is necessary for the requester to identify a particular paint.
55. The proprietor has further argued that because the starting point is a degraded paint, the product produced by the method will contain breakdown products unique to degraded paints and not present in new virgin paint. I am prepared to accept this argument only to the limited extent that newly manufactured virgin paint would be distinguishable from paint produced by the method of claim 1, on the basis of the lack of paint breakdown products. However, as soon as a paint has been opened these breakdown products will start to accumulate and it will then not be possible to determine whether the paint has been manufactured according to the method of claim 1 or not.
56. All that needs to be determined is whether *on the balance of probabilities* a paint having a viscosity greater than 2000 cP, and which is not a virgin paint, existed at the priority date, or whether it was obvious to alter the viscosity of an existing non-virgin paint so that it met the required viscosity.
57. The requester has argued that the prior art referred to in D5 to D8 discloses paints having the necessary characteristics to fall within the scope of claim 67. However, as previously discussed, none of these documents disclose a particular value for viscosity and the paints of these document cannot on the face of it anticipate claim 67.
58. In relation to inventive step, the requester has only argued that claim 67 lacks an inventive step on account of claim 1 lacking an inventive step. However, as I consider that claim 1 does not lack an inventive step I cannot follow this line of argument.
59. D9 does disclose values for viscosity of recycled paints. Table 30 indicates a paint comprising 15% recycled paint which has a viscosity of 96 Krebs Units (KU) (ASTM D562), which appears to be the highest viscosity identified for a specific paint comprising recycled ingredients. 96 KU is equivalent to about 1450 cP at the particular shear rate involved in the method of the ASTM D-562 test. For illustration the highest value of viscosity measured in D9 for a virgin paint is 102 KU (1750 cP).
60. These viscosities are measured at a higher shear rate than that required by the patent. Assuming the paint exhibits typical shear thinning behaviour, then at the lower shear rate viscosity test described in the patent, higher values of viscosities would be expected. Unfortunately, I have not been provided with any evidence to establish how the D562 viscosity relates to the lower shear rate viscosity so I cannot decide if the viscosity would be over 2000 cP or not. Similarly, I have no evidence to determine whether or not it would be obvious to formulate the paint of D9 such that it would have a viscosity of greater than 2000 cP.
61. Such lack of evidence also applies to D5 to D8 and D10. I simply cannot determine

that the paint formulated would have a viscosity greater than 2000 cP or that it would be obvious to do so.

62. None of D5 to D10 are considered to demonstrate that claim 67 lacks novelty or that it lacks inventive step based on the argument and other evidence provided.

Claim 59

63. Claim 59 is also a product-by-process claim and is similar in scope to claims 67 except that it additionally requires the presence of odour producing paint breakdown products and odour reducing agents. As I consider claim 67 to be novel and inventive based on the argument and evidence provided, claim 59 is also novel and inventive.

Opinion

64. Based on the argument and evidence provided it is my opinion that claims 1, 59 and 67 of GB 2500162 are novel and inventive. The patent is therefore valid.
65. In particular, claim 1 is novel and inventive in relation to D5-D8 and D10 in light of the accompanying argument. Claim 67 is novel and inventive based on D5 to D10 and the limited argument and evidence provided. Claim 59 is novel and inventive given it is of narrower scope than claim 67.

Matthew Jefferson
Examiner

NOTE

This opinion is not based on the outcome of fully litigated proceedings. Rather, it is based on whatever material the persons requesting the opinion and filing observations have chosen to put before the Office.