UK Intellectual Property Office □□□□

For Creativity and Innovation

BL O/039/08

13 February 2008

PATENTS ACT 1977

BETWEEN

GAT Microencapsulation Gmbh Claimant

and

Syngenta Ltd Defendant

PROCEEDINGS

Application under section 72 for revocation of Patent No EP 0824313

HEARING OFFICER Peter Back

DECISION

Background

1 An application for revocation of EP(UK) patent number EP 0824313 ("the patent") in the name of Syngenta Ltd ("Syngenta") was made by GAT Microencapsulation Gmbh ("GAT"), then GAT Formulation Gmbh, on 7 August 2006.

2 The patent was filed as a PCT application on 18 April 1996, claiming a priority date of 27 April 1995, and was granted by the European Patent Office on 9 August 2000. The claims relate to microcapsules containing insecticide and a UV protectant. GAT alleges that the claims are excluded from patentability as lacking an inventive step and that the specification as a whole is insufficient.

3 GAT's case alleging lack of inventive step is based separately on two documents, US 4056610 ("Barber") and WO 83/03521 ("Fekete") and on common general knowledge.

4 Syngenta has not attempted to defend the patent as granted. Instead, it has proposed amendments to the claims and sought to defend the patent as amended from the allegations of lack of inventive step and insufficiency. GAT has objected to the attempt to amend, and also maintains that the amendments

do not overcome its objections in any event.

5 The early stages of this case did not proceed entirely smoothly; in particular, the Patent Office (as it then was) issued a preliminary opinion to Syngenta on 13 October 2006 that its counter-statement appeared to be inadequate. Following on from this, GAT sought striking out of the defence and summary revocation of the patent. These issues were considered in a preliminary decision given orally on 31 January 2007 where GAT's request for striking out was refused but Syngenta was required to submit an amended counter-statement.

6 This having been done, the case came before me for a substantive decision at a hearing on 5 and 6 July 2007.

7 Ms Kathryn Pickard, instructed by Jenson & Son, appeared for GAT, and Mr Richard Meade, instructed by Bristows, appeared for Syngenta.

The Issues

8 As noted above, GAT considered that Syngenta's application to amend should be refused. A consequence of this would be that Syngenta had no defence, as it did not seek to defend the patent as granted. I made no decision on the allowability of the amendment at the hearing, but the rest of the hearing proceeded on the basis of the patent as it was sought to be amended.

Assessment of the Witnesses

9 Before I go into the details of the law and its application in this case, I think it would be appropriate for me to make some comment on my impression of the witnesses.

10 GAT called a single witness, Dr Casana-Giner. They also put in evidence from Mr Moore, one of their attorneys. His evidence went to the contents of the prosecution file of a US family member of the patent and was not contested by Syngenta, with the result that he was not cross-examined. Syngenta called two witnesses: Dr Symes and Mr Waterman.

11 Dr Casana-Giner is a senior scientific manager at GAT. Originally a researcher, he now spends, by his estimate, about 95% of his time on patent and intellectual property issues. He was put forward as an expert witness. However, he admitted in cross-examination that he was the driving force behind GAT's bringing of the case and the principle player in putting together their arguments. He also unfortunately did not appear to have received any instruction as to the duties of an expert witness. This, combined with some language difficulties, meant that his evidence was far from satisfactory. He frequently attempted to second guess where Mr Meade's questions were going and gave opinions on the inventiveness of the patent rather than answering the specific questions asked.

12 Dr Casana-Giner explicitly accepted his lack of objectivity in cross-examination in passages which perhaps give some flavour of his approach to testimony:

(day 1, page 45, lines 12ff)

Mr Meade: My request to you is do you see yourself in this hearing as being here to put forward GAT's position?

Dr Casana-Giner: OK, there are two things. Of course it is evident that I am here because I am representing GAT. If not, I would not be allowed to be here. On the other hand, there is also a personal motivation for me to be so involved in this, from making laboratory trials to writing some arguments, because I can understand patents that are patenting all things and all things and all things again and again. And this is a personal issue. For me, for my work, I feel that this patent is ridiculous and personally I am involved, because I am personally involved in my work. So there is also a personal will to revoke this patent. Because I see, for me, it was so absurd from the beginning that inside [sic] my directors to go against the patent. It is very strange that a small company goes against a giant like Syngenta but I said "It is so clear that it is so obvious, why should we not go against it?".

(day 1, page 46 line 20ff)

Mr Meade: Doctor, have you been informed or instructed by your UK representatives as to the duties of an expert witness in UK litigation?

Dr Casana-Giner: Sorry, can you? I do not understand. I did this because Mr Moore said to me, "It will be necessary that you sign this witness statement."

Q: That is not what I am asking you. Let me take it in slightly smaller steps, then, doctor.

A: Maybe I can shorten. Are you going to say that my opinion can be biased towards GAT?

Q: I am not going to respond to questions you ask me, doctor. I am going to ask you some questions.

A: I am sorry. I just meant to shorten all this procedure, because obviously I will be biased on the side of ---

Q: I beg your pardon? Obviously you will be biased you say?

A: I am part of this case. I mean, as Dr Symes is part of Syngenta.

13 Dr Casana-Giner clearly holds a deep and honest belief that the patent is invalid. Unfortunately, I formed the impression that the strength of that belief tended to colour his evidence such that where it conflicts with other evidence, I am unable to give it great weight.

14 Dr Symes was put forward by Syngenta as their expert witness. He has never worked for either company involved in these proceedings, but has had a long career, from which he is now retired, working in the chemical industry. I found him a most impressive witness, giving clear expert evidence in which I could have confidence, not being afraid to say things which could at first sight be unhelpful to Syngenta.

15 Mr Waterman is a patent attorney working for Syngenta and involved in the conduct of this case. He gave evidence relating to the prosecution of a US equivalent of the patent, which is relevant to the question of sufficiency. He answered questions in a clear and straightforward manner, and I have no hesitation in accepting his evidence. However, his evidence added little to what is apparent from the US prosecution file.

The law

16 The Comptroller's powers to revoke a patent on the application of another person are set out in section 72(1) of the Patents Act 1977 ("the Act"). With respect to the validity of the claims, the relevant parts read as follows:

> *72.-(1) Subject to the following provisions of this Act, the court or the comptroller may by order revoke a patent for an invention on the application of any person (including the proprietor of the patent) on (but only on) any of the following grounds, that is to say –*
> *(a) the invention is not a patentable invention;*
> *(b) ...*
> *(c) the specification of the patent does not disclose the invention clearly enough and completely enough for it to be performed by a person skilled in the art;*
> *(d) …*

17 Further to section 72(a) above, I must also look to section 1(1) which defines the requirements for a patentable invention, namely that:

> *1.-(1) A patent may be granted only for an invention in respect of which the following conditions are satisfied, that is to say –*
> *(a) the invention is new;*
> *(b) it involves an inventive step;*
> *(c) …*

18 Also relevant are sections 2 and 3:

> *2.-(1) An invention shall be taken to be new if it does not form part of the state of the art.*
> *(2) The state of the art in the case of an invention shall be taken to comprise all matter (whether a product, a process, information about either, or anything else) which has at any time before the priority date of that invention been made available to the public (whether in the United Kingdom or elsewhere) by written or oral description, by use or in any other way.*
> *…*
> *3. An invention shall be taken to involve an inventive step if it is not obvious to a person skilled in the art, having regard to any matter which forms part of the state of the art by virtue only of section 2(2) above…*

The invention

19 As mentioned above, the invention relates to microcapsules containing insecticide and a UV protectant. The patent covers Syngenta's commercial product Karate Zeon (RTM) which is an insecticide designed to be sprayed onto crops such as cotton and rice.

20 The insecticide itself is a chemical compound called a pyrethroid. This is contained in extremely small capsules (1-200 microns), called microcapsules. Microencapsulation is a well-known technique in the field, dating back decades.

21 One of the problems for insecticides sprayed on crops is that the insecticides tend to degrade quickly in sunlight, particularly ultraviolet light. The patent attempts to overcome this problem by mixing in solutions of titanium dioxide or zinc oxide in with the insecticide inside the microcapsules. These oxides act as UV protectants and hence increase the lifespan of the insecticide.

The Patent

22 The patent has two independent claims: claim 1 to a microcapsule according to the invention, and claim 12 to a process for preparing such microcapsules. The hearing focused primarily on claim 1 (as proposed to be amended); no arguments were put forward for independent validity of claim 12 should that claim fall.

23 Claim 1 in the granted patent reads as follows:

> *A microcapsule containing an organic liquid comprising an ultraviolet sensitive, biologically active material, and in* [sic] *effective amount of a particulate ultraviolet light protectant selected from titanium dioxide, zinc oxide, and mixtures thereof suspended and thoroughly dispersed in the liquid.*

24 The proposed amended claim 1 (with underlining to show the difference) is:

> *A microcapsule containing an organic liquid comprising an ultraviolet sensitive, biologically active material <u>which is a pyrethroid and which is disolved in the liquid or is the liquid</u>, and <u>an</u> effective amount of a particulate ultraviolet light protectant selected from titanium dioxide, zinc oxide, and mixtures thereof suspended and thoroughly dispersed in the liquid.*

25 Hence the proposed amendment limits the invention to pyrethroids as the active ingredient (as claimed in original claim 8) and this being dissolved in the liquid or being the liquid (as claimed in original claim 3).

26 Some dependent claims are deleted (3 and 8 have been incorporated; claim 2 was an alternative to claim 3 and hence now omitted) which results in renumbering of the remaining claims. A similar amendment to that made to claim 1 is proposed for claim 12 (claim 9 after amendment).

Allowability of amendment

27 Syngenta's application to amend is made persuant to section 75(1) of the Act:

> *in any proceedings before the court or the comptroller in which the validity of a patent may be put in issue the court, or as the case may be, the comptroller may, subject to section 76 below, allow the proprietor of the patent to amend the specification of the patent in such manner, and subject to such terms as to advertising the proposed amendment and as to costs, expenses or otherwise, as the court or comptroller thinks fit.*

28 I adopt the summary of caselaw helpfully provided by Ms Pickard in her skeleton. The general principles applicable were set out in *Vector Corporation v Glatt Air Techniques Ltd* [2007] RPC 12; [2006] EWHC 1638(Ch). The starting point remains the judgment of Aldous J in *Smith Kline & French Lab. Ltd. V Evans Medical Ltd* [1989] FSR 561 at p569:

> *First, the onus is to establish that amendment should be allowed is on the patentee and full disclosure must be made of all relevant matters. If there is a failure to disclose all the relevant matters, amendment will be refused.*
>
> *Secondly, amendment will be allowed provided the amendments are permitted under the Act and no circumstances arise which would lead the court to refuse the amendment.*

Thirdly, it is in the public interest that amendment is sought promptly. Thus, in cases where a patentee delays for an unreasonable period before seeking amendment, it will not be allowed unless the patentee shows reasonable grounds for his delay. Such includes cases where a patentee believed that amendment was not necessary and had reasonable grounds for that belief.

Fourthly, a patentee who seeks to obtain an unfair advantage from a patent, which he knows or should have known should be amended, will not be allowed to amend. Such a case is where a patentee threatens an infringer with his unamended patent after he knows or should have known of the need to amend.

Fifthly, the court is concerned with the conduct of the patentee and not with the merit of the invention.

29 I should note that some play was made by GAT over whether these were "deletion" or "rewriting" amendments, greater care being required when allowing the latter (*Vector Corporation* paragraph 67). GAT characterised the amendments as being "rewriting" amendments, which is strictly correct as both original claims 3 and 8 depended directly on claim 1 and thus there is no claim in the original patent precisely corresponding to the amended claim 1. However, as Syngenta argued, the re-writing aspect seems minimal given that all the restricting features were claimed originally. I therefore do not think that the bar needs to be set exceptionally high.

30 GAT put forward two arguments why the comptroller should refuse to exercise his discretion to allow amendment:

(a) An alleged failure by Syngenta to disclose all relevant issues, in particular relating to an equivalent US application (Aldous J's first point above).

(b) Excessive delay on Syngenta's part in making the application to amend (Aldous J's third point above).

31 Syngenta asserted, and GAT did not contradict, that there has been no attempt to assert the patent against anyone at any time, so Aldous J's fourth point is not relevant here. By Aldous J's second point, I should allow amendment unless circumstances arise which mean I should refuse it.

Failure to give full disclosure

32 In *Oxford Gene Technology v Affymetrix* [2001] RPC 9, the Court of Appeal clarified that the duty of disclosure did not require the patentee to trawl through all of its documents to see whether they might be relevant to the exercise of discretion, however:

The obligation of good faith requires the patentee to put forward correct reasons for the amendment. If there be facts relevant to the exercise of the discretion for those reasons then those facts need to be put before the court.

33 In the prosecution of the US application 08/430030 (which is the priority document of the patent), Syngenta was required to restrict to either product or process claims; it chose the process claims and spun off a divisional application, US 09/122218 for the product claims. However, the claims as filed on this divisional did not correspond exactly to the original product claims of the parent.

Claim 1 was additionally limited by a requirement that the microcapsule contain "a dispersant which serves to disperse the ultraviolet light protectant in the organic liquid, and to keep it in said liquid, but which does not allow it to be extracted into water". Claim 1 of the parent (with the corresponding process claim) is not so limited, and nor are the claims of the patent in suit, either before or after the proposed amendments.

34 Mr Waterman gave evidence on this point, and was cross-examined at the hearing. There was some discussion as to the clarity of his evidence which revolved around whether the claims had been "amended" (technically they were not except in a minor unrelated way as the main change was made on filing the divisional) but the key point of his evidence was that he did not know why the change had been made.

35 GAT suggested that Syngenta's failure to explain this difference is suspicious, and that in the absence of any justification from Syngenta it was quite simply impossible to tell if this had some bearing on the proposed amendment. For this reason, it argued, Syngenta had failed in its duty of full disclosure and so amendment should be refused.

36 This argument seems to me to be unsustainable. There is no relationship between the amendments proposed in the present case and the change to the claims made here. There may be many (or no) reasons why a particular change is made to a claim in a particular jurisdiction and the mere fact that one change is made in the US does not in itself give rise to a suspicion that it has some relevance to a completely different amendment made in the UK.

37 I should mention that Mr Meade objected to GAT taking this point at all. He considered that it had not been clearly pleaded and he had had no idea that this objection was going to be made until he received GAT's skeleton argument, only days before the hearing. Had he had longer, he said, it might have been possible for Syngenta to find out the reasons for the claim change, but in the circumstances it was not. Ms Pickard refered to a reference to the US divisional in GAT's Amended Statement of Grounds (para 7) to argue that the point had been pleaded.

38 I must say I have considerable sympathy with Mr Meade's point. At the hearing, I allowed Mr Waterman to be cross-examined on this issue, but indicated that if he were to answer (as he did) "I do not know" to the question of why the amendment was made, I would take that as an answer, for what it was worth. As I find the objection to be unfounded in any event, I do not need to decide whether GAT should be prevented from arguing it.

Misconduct - Delay in seeking amendment

39 Mr Waterman gave evidence on this point and the timeframe in which the various events occurred leading up to the application to amend was ultimately not in dispute between the parties. It ran as follows:

15 September 2006: Meeting with legal advisors

26 September 2006: Counter-statement served.

13 October 2006: Patent Office informs Syngenta that counter-statement is inadequate and, unless Syngenta agreed, a case management conference would be arranged.

30 October 2006: Decision taken by Syngenta to seek amendment of the patent.

6 December 2006: GAT indicated that it wished to apply for part of Counter-Statement to be struck out and for patent to be revoked summarily.

31 January 2007: Preliminary hearing to deal with GAT's revocation application and to consider adequacy of Counter-Statement.

14 February 2007: Amended Counter-Statement together with application to amend served.

40 From Mr Waterman's evidence it is apparent that the amendment was decided on as a result of the discussions with legal advisors on the 15 September. Syngenta maintains the amendments were simply to narrow the issues as they are sufficient to protect the commercial product; GAT regards it as an admission that the patent as granted is invalid. However, the crucial point is that it took 6 weeks for Syngenta to internally decide on a course of action. GAT points to this and the subsequent four months between Syngenta deciding to amend and the actual application.

41 Ms Pickard referred to comments of Pumfrey J (as he then was) in *Instance v CCL Label Inc* [2002] FSR 27 as indicating two months should be sufficient to make an application to amend after the need to do so was appreciated.

42 Mr Meade referred to the comments of Lewison J in *Vector v Glatt* (paragraphs 80-81) on Pumfrey's comments:

> What is an acceptable period of delay is plainly a question of fact; and will depend on all the circumstances. In Smith Kline itself, a delay of eight years was held to be too long, even though no prejudice to the opponent or the public had been established. Mr Davis came close to submitting that a period of two months from the date on which the patentee became aware of the need to amend was, in general, a sufficient time within which to formulate an amendment. He based this primarily on the observations of Pumfrey J in Instance v CCL Label Inc [2002] FSR 27. In that case the judge said at para 33:
>
> > "No coherent reason was advanced in the evidence or elsewhere for the delay in stating these proceedings to amend, or for the generous period of time which was taken up in formulating the amendment. My view is that after counsel's advice was received a period of two months would have been more than adequate to formulate an amendment. This application could have been made in October 1999, not in December 2000."
>
> Counsel's advice in that case was that the patent had been anticipated; and the patentee's patent agent took the view that the case for anticipation was a strong one. Moreover, during the period that elapsed between counsel's advice and the application to amend, the unamended patent had been deployed against competitors. That, therefore, was a case in which detriment was established. I cannot regard Pumfrey J as having laid down a general rule, or anything close to one.

43 GAT points as particularly damning Mr Waterman's evidence (para 17) “Syngenta decided that the most sensible approach would be to defer Syngenta's application to amend the patent until Syngenta knew whether GAT's revocation action had succeeded or alternatively that it was decided that the counter-statement needed to be amended.” GAT reads this as saying that if GAT's revocation action had been unsuccessful, Syngenta would not have pursued its amendment at all. But in cross-examination Mr Waterman made it clear that the point was that GAT was trying for summary revocation. If GAT succeeded on that, there would be no patent to amend.

44 It seems to me that with the benefit of hindsight, a better approach would have been for Syngenta to apply for amendment as soon as the decision to do so had been made. However, I can also see that at just that point they were faced with a more pressing concern in that their counter-statement had been considered insufficient. Their focus would have been further sharpened by GAT's threat of summary revocation. Furthermore, on Mr Waterman’s unshaken evidence, this was not a situation such as that contemplated by Pumfrey J where a strong anticipation had been identified, nor was the patent deployed against competitors.

45 In the circumstances, I do not consider that the six weeks taken to make a decision as no whether to amend, or the four months before the application was actually made, either singly or together, constitute a level of delay which would justify refusing leave to amend.

46 I therefore allow the application to amend. I would note here that the bringing into effect of EPC2000 has changed Section 75 of the Patents Act by adding a new clause which says, in essence, "in exercising discretion, due care will be given to the practice of the EPO". This effectively removes the comptroller's discretion to refuse to allow amendments on the grounds of bad faith. Thus, since GAT's attack on the allowability of the amendments was essentially one of bad faith, it could be argued that since the law has changed I should ask the parties for submissions on this point. However, since I have considered GAT's arguments on this point and rejected them I do not see what purpose would be served by asking for further submissions other than to put the parties to additional expense. Accordingly I turn now to consideration of the validity objections. All the points were argued as regarding the patent as amended and future references to the patent will be to the amended patent.

Sufficiency

47 GAT's primary argument on sufficiency is based on so-called “Biogen insufficiency”: that the specification does not disclose the patent clearly and completely enough for it to be performed by a person skilled in the art across the entire width of the claim. In the words of Lord Hoffman in *Biogen v Medeva* [1997] RPC 1 (p48):

> “...the specification must enable the invention to be performed to the full extent of the monopoly claimed. If the invention discloses a principle capable of general application, the claims may be in correspondingly general terms. The patentee need not show that he has proved its application in every individual case. On the other hand, if the claims include a number of discrete methods or products, the patentee must enable the invention to be performed in respect of each

of them."

48 In the present case, GAT argues that the invention only works if a dispersant is used to disperse the UV protectant inside the microcapsules. The main claims, in contrast, only require the UV protectant to be thoroughly dispersed, and are silent as to how this is achieved.

49 GAT's argument that a dispersant is necessary is based on one of the comparative examples in the patent itself, paras 41-48. In the "Glass Slide Evaluation", a number of samples of microcapsules containing the biologically active substance lambda-cyhalothrin were prepared, spread on a glass slide and exposed to a xenon light (simulating sunlight) for up to three days. On each day the percentage of lambda-cyhalothrin remaining was measured. The samples tested were:

> (1a) Microcapsule containing waxoline black as the UV protectant and Hypermer dispersants;
>
> (1b) Microcapsule containing Titanium dioxide and Hypermer dispersants;
>
> (1c) Microcapsule containing Titanium dioxide without a dispersant;
>
> (1d) Microcapsule containing no Titanium dioxide where Titanium dioxide was present in the aqueous phase;
>
> (1e) Microcapsule with no UV protectant and no UV protectant present in the aqueous phase either.

50 The best result, in terms of remaining lambda-cyhalothrin (and thus level of UV protection) was provided by 1b, this being the only one where any lambda-cyhalothrin remained after 3 days.

51 1b is clearly within the scope of the invention as claimed. 1e (and 1a and 1d) is clearly outside it. The key dispute between the parties boiled down to whether 1c fell within the scope or not, i.e. whether or not in that sample the titanium dioxide was thoroughly dispersed.

52 GAT's argument was that 1c fell within the scope. Therefore, there are embodiments within the scope of the claim which did not work, and so there is Biogen-insufficiency. However, on cross-examination, Dr Casana Giner's evidence on this point was far from unequivocal. This was one point where his evidence suffered from attempting to anticipate why questions were being asked rather than answering questions directly, but he generally appeared to be saying that a skilled person could read it either way. In the end, he conceded (day 1 page 142 line 24) that 1c was not within the scope.

53 Syngenta's argument, by contrast, that 1c is simply a comparative example outside the scope of the patent. The patent is silent on whether or not 1c is thoroughly dispersed and Syngenta argued that the natural reading was that it is not. Dr Symes in cross-examination accepted that 1c could be read either way. He also accepted that the patent only gives dispersants as a means of ensuring thorough dispersion. He did, however, put forward other means of ensuring

dispersal from his own knowledge, such as a bead mill.

54 It seems to me that the most natural way to read this example is Syngenta's. It seems perverse to attempt to read in a requirement for thorough dispersion in 1c when the patent is not concerned with comparing “titanium dioxide with dispersant” with “titanium dioxide dispersed by other means”. The patent is concerned with “titanium dioxide thoroughly dispersed” as compared to “titanium dioxide not thoroughly dispersed”, as is apparent from the claims. Only a dispersant is actually used, but that is simply because it is a good standard technique to thoroughly disperse something. There is no suggestion that it is a special property of the dispersant – it is the dispersing which is key. Any other thorough dispersing technique will work just as well.

55 I therefore reject this attack on the patent's validity.

56 At the hearing, GAT attempted to run a second sufficiency attack based on a US patent, US 6133197 (Scher). This contained various comparative tests of microcapsules with a variety of UV protectants, including some which appeared to fall within the scope of the present patent, in various circumstances. Dr Symes was cross-examined on these and conceded that in one example, microcapsules according to the present invention were less effective that microcapsules without any UV protectant at all. However, he cautioned that it was not clear how relevant UV light was in that example.(day 2 pages 211-212). Ms Pickard used this to argue that this example showed that the patented invention did not, in fact, work, and that the patent was thus insufficient.

57 Mr Meade objected strongly to this point being taken, as he considered it not to have been pleaded and so he had not been able to prepare a defence against it. In my view, he is correct, but in any case the point is hopeless. Pulling particular examples that show that in some cases the patented invention may not be suitable (which may be, as Dr Symes pointed out, because other factors than UV light are more significant in those examples) is a long way from showing that the invention does not work. I hold that this attack fails.

Inventive step

58 The inventive step objection is that the patent is obvious either as a combination of common general knowledge, or in the light of US 4056610 (“Barber”) or WO 83/03521 (“Fekete”). Both documents are agreed to form part of the state of the art.

59 The parties agree that the relevant law in this area is the approach set out in *Windsurfing International Inc. v Tabur Marine (Great Britain) Ltd* [1985] RPC 59 as recast by Jacob LJ in *Pozzoli SPA v BDMO SA* [2007] EWCA Civ588:

> 1 (a) Identify the notional “person skilled in the art”
>
> (b) Identify the relevant common general knowledge of that person.
>
> 2 Identify the inventive concept of the claim in question or if that cannot readily be done, construe it;

3 Identify what, if any, differences exist between the matter cited as forming part of the "state of the art" and the inventive concept of the claim or the claim as construed;

4 Viewed without any knowledge of the alleged invention as claimed, do those differences constitute steps which would have been obvious to the person skilled in the art or do they require any degree of invention?

60 The parties are agreed that the person skilled in the art is a formulation chemist with experience in microencapsulation techniques. There is some mention in Dr Symes' evidence that the skilled person may need to be a team including someone with knowledge of pesticides in addition, but nothing appears to turn on this.

The Common General Knowledge ("CGK")

61 The parties agreed that the following were CGK at the priority date of the invention:

1 Microencapsulation and its advantages (including reduced toxicity and control of the release rate of the ingredient).

2 Various microencapsulation techniques

3 That pyrethroids, including lambda-cyhalothrin, were photo-unstable

4 That metal oxides, including titanium dioxide, were UV protectants.

62 Various other alleged pieces of common general knowledge we contested. For the purposes of my decision, the only one I will comment on is the mechanism by which titanium dioxide acts as a UV protectant.

63 GAT initially argued, with support from Dr Casana-Giner's evidence that it was common general knowledge that titanium dioxide was both a UV absorbent and UV reflectant. However, the evidence from Dr Symes was that at the priority date, it was mistakenly believed that titanium dioxide acted primarily as a UV reflectant. On cross-examination, Dr Casana-Giner appeared to accept this (day 1 page 59 line 4ff):

Mr Meade: So it is your evidence that the perception of the ordinary skilled person at the date of the patent assumed that titanium dioxide was a reflector?

Dr Casana-Giner: Yes.

64 I therefore hold that at the priority date of the invention, it was commonly believed that titanium dioxide was a UV reflector, rather than a UV absorbent.

The inventive concept

65 GAT put forward, and Syngenta does not appear to dispute, that the inventive concept is the use of titanium dioxide and/or zinc oxide as a UV protectant in microcapsules containing pyrethroid.

Combination of common general knowledge

66 It was common general knowledge that it was beneficial to microencapsulate insecticides and microencapsulation techniques were well known. Further, it was common general knowledge that pyrethroids were UV sensitive and that titanium dioxide and/or zinc oxide were UV protectants. This is common ground as noted above.

67 GAT argued that claim 1 is therefore obvious as it is simply the combination of pyrethroid, a UV-sensitive insecticide, with titanium dioxide and/or zinc oxide, known UV protectants, within a microcapsule. It is argued that this is something that, at the very least, the skilled person would have thought obvious to try.

68 Ms Pickard directed me to Diplock LJ's words, speaking about an expert witness' failure to pursue a research path which would have led to the invention then in suit, in *Johns-Manville Corporation's Patent* [1967] RPC 479 at p495:

> His failure to persevere with his experiments, when he found that the skin of asbestos cement upon the felt filter was too thick, would be cogent evidence for the appellants if the invention claimed in their specification included an adjustment to the speed of the filter belt. But there is not a word about this in their specification. If, appreciating the necessity for such an adjustment involved any inventive step, the specification could be attacked under the alternative ground set out in section 14(1)(g), namely that it "does not sufficiently and fairly describe the invention or the method by which it is to be performed." But it is (and so far as the appellants are concerned, it has to be) common ground that, once the idea of adding polycrylamides to the asbestos cement slurry has been tried out, and the thicker skin of asbestos resulting from the improved filtration observed, the necessary adjustment to the speed of the filter belt to obviate any deleterious effect upon the quality of the final product would be obvious, notwithstanding that the respondents' own research manager did not find it so.

69 Ms Pickard drew from this the principle that when one has a desired goal, one may have some inventiveness in achieving that goal, but you have to set that out in the patent. If there is something "clever" there, you have to teach what the clever steps are. She further argued that Dr Symes' evidence showed there was nothing overly difficult in assembling the necessary steps to microencapsulate the metal oxide with the insecticide, given the common general knowledge.

70 At the hearing, Mr Meade drew my attention to the words of Jacob LJ in *Saint-Gobain PAM SA v Fusion Provida Limited, Electrosteel Casings Limited* [2005] EWCA Civ 177, paragraph 35:

> None of this to my mind remotely makes the idea of using Zn/Al alloy for pipes *obvious* – as something which is simply self-evident to the unimaginative man skilled in the art. Mere possible inclusion of something within a research programme on the basis you will find out more and something might turn up is not enough. If it were otherwise there would be few inventions that were patentable. The only research which would be worthwhile (because of patent protection) would be into areas totally devoid of prospect. The "obvious to try" test really only works where it is more-or-less self-evident that what is being tested ought to work.

71 Syngenta argued that there was no such expectation of success in the present case. Furthermore, Syngenta argued, "obvious to try" only arises where the skilled person has something in mind, and the only question is whether or not he or she would consider it worthwhile.

72 I think this must be right. Once one has the patent, it may be possible to say that all the individual elements are obvious. But that does not mean that one would think of that particular combination.

73 GAT's argument fails to really engage with this – it assumes one has a desired goal. There is clearly a desired goal of protecting the insecticide. But then the "clever bit" in reaching this is having the idea of putting the metal oxide in with the insecticide and thoroughly dispersing it. That idea is not in the common general knowledge. So whether or not the method of doing it is obvious (which I do not decide at this point) once one has had the idea of doing so makes no difference

74 The attack of obviousness based on common general knowledge fails.

75 GAT also put forward an argument that the patent does not teach any synergistic effect because the combination in claim 1 has no beneficial effect. This argument was premised on the grounds that example 1c in the "glass slide test", referred to under sufficiency above, was within the scope of claim 1 (and hence, as 1c has no beneficial effect, nor did the invention). As I have held above that not to be so, this argument cannot succeed.

Barber

76 Barber discloses an invention aiming at the same problem as the patented invention – it provides a microencapsulated pyrethroid insecticide protected by a UV protectant. In Barber, protectants are present in both the shell wall of the microcapsules (the "shell stabiliser") and mixed in with the insecticide inside the shell (the "fill stabiliser"). (The description indicates that the protectant inside the microcapsules is optional, although it is required by the claims).

77 Barber lists several options for the protectant in the shell wall at column 5 lines 30-36. Included in this list are solutions of titanium dioxide. It also lists several options for the protectant inside the shell at column 7 lines 40-55. This list does not include titanium dioxide.

78 The difference between Barber and the patent is thus the use of titanium dioxide as the UV protectant inside the microcapsules.

79 Both Dr Casana-Giner and Dr Symes agreed that there are difficulties in using titanium dioxide in the shell (for example, Day 2 p218 lines 14-16):

> "Dr Symes: I know no way of [getting the titanium dioxide into the shell wall]
>
> Q: Barber does not teach you how you can do that?
>
> A: No."

80 GAT go on from this to argue that a skilled person, having failed to get titanium dioxide into the shell wall, would naturally try instead to use it inside the capsules in place of one of the recommended UV protectants. They would be motivated to do so because titanium dioxide meets (GAT argued) the general characteristics outlined in Barber paragraph 7 lines 32-41:

"Suitable fill stabilisers absorb ultraviolet radiation in the range of about 270-350 nanometers and convert it to a harmless form. They have a high absorption coefficient in the near ultraviolet portion of the spectrum (e.g. a log molar extinction coefficient of from about 2 to 5) but only minimal absorption in the visible portion of the spectrum. Preferably they do not exhibit any substantial chemical reaction with the isocyanate groups and primary amine groups of the shell forming compounds during the microencapsulation process."

81 Syngenta argued that ultimately, whatever the merits of titanium dioxide that might otherwise be apparent, and whether or not titanium dioxide could be said to fulfil the requirements for the fill stabiliser, the skilled person reading Barber would choose one of the explicitly listed options or a similar chemical, rather that venturing in a different direction by trying titanium dioxide.

82 I find Syngenta's argument convincing. Barber has placed a clear signpost to the skilled person pointing in the opposite direction. Having contemplated use of titanium dioxide in the shell, Barber then omits it from the later list of appropriate choices for inside the capsule (a list which otherwise bears much in common with the first list). Therefore the skilled person is given a clear implicit instruction not to use titanium dioxide inside the capsules. It would take a flash of inventiveness to disregard this instruction and think of using waste titanium dioxide (from failed attempts to insert it in the shell) inside the microcapsules. Therefore claim 1 of the patent is not obvious in light of Barber.

83 I also note my finding above that eventually both experts acknowledged that at the priority date it was not common general knowledge that titanium dioxide works by absorption in the ultraviolet spectrum. This too would seem to point away from the skilled person considering Barber thinking that titanium dioxide would be a good candidate for the fill stabiliser, as UV absorption is clearly listed as one of the desired properties.

84 Further, Dr Symes gave evidence that there is a "downside" to using titanium dioxide – a general corrosive effect it has in the presence of UV light. Thus, the titanium dioxide did not convert UV light to a "harmless form" as Barber requires of the fill stabiliser. His evidence in this respect came from another field – architectural paints – but his reasoning was that this property would be known to people dealing with titanium dioxide, if not people working with pesticides. Dr Casana-Giner disagreed that this property would have been known to the skilled person at the priority date. In the end, given my view above, I do not need to decide between the conflicting expert views on this. It certainly cannot detract from Syngenta's main argument.

<u>Fekete</u>

85 Fekete is concerned with a different application than that dealt with by the patent. It describes microcapsules containing insecticide (methopren) intended to be ingested by cattle to inhibit the propagation of flies in cattle excrement. It uses activated charcoal as a UV protectant inside the capsules.

86 The material differences from the patented product are thus:

(a) The use of methopren instead of a pyrethroid

(b) the use of activated charcoal instead of titanium dioxide and/or zinc oxide

(c) the application to cattle feed rather than an insecticide spray.

87 GAT's argument was that each of these changes were obvious to make. A skilled person looking for a way to protect their pyrethroid insecticide would read Fekete and take from it that they could use a UV protectant inside the microcapsules. Titanium dioxide or zinc oxide would be obvious choices given their relative cheapness.

88 Dr Casana-Giner maintained in his evidence that each of the necessary substitutions to arrive at the patented invention would have been obvious. He refers for instance in his witness statements to the differences between methopren and pyrethroids not being significant insofar as they affect how they are used here, to the metal oxides being solids like activated charcoal is, and to the need for the protectant to be dispersed being obvious to provide sufficient protection. He puts it all together in paragraph 20 of his second witness statement as follows:

> A successful inventiveness destroying approach using WO 83/03521 is: I could start with US 4056610 as closest art and common knowledge (TiO2 and ZnO are UV-blockers), then knowing how to disperse the pyrethroids with the ICI catalog, we will arrive to microencapsulated pyrethroids. US 4056610 teaches that it is an option to microencapsulate pyrethroids and TiO2 to obtain the technical effect of UV protection. For a further restriction to be the same process, we just take US 4285720 and proceed with the same polyurea process.

89 On cross-examination, he appeared to back away from this to an extent, but maintained that there were many obvious routes to get to the invention:

> Mr Meade: So am I right in understanding that paragraph 20 is the explanation for how you see the inventiveness-destroying approach of Fekete that you wish to put before this hearing?
>
> Dr Casana-Giner: No. This was written at night, very fast and this was one of the many possible attacks to inventiveness based on Fekete.
>
> Q: Well, doctor, that puts me –
>
> A: I can accept that you cannot accept any other argument. It is too late maybe.
>
> Q: This was the argument you wanted to put forward –
>
> A: Yes, the first that came to mind, but I am sure that there are more.

90 Dr Symes in his expert statement indicated a number of difficulties that would need to be overcome if substituting titanium dioxide for activated charcoal. In particular, he referred to the different particle sizes involved and the hydrophilic (which he refined to polar on cross-examination) nature of titanium dioxide as opposed to activated charcoal's hydrophobic nature, which would make it harder to produce a stable suspension with titanium dioxide. However, in cross-examination, he appeared to accept that these were challenges which the skilled person could overcome.

91 Syngenta's argument was essentially that once one starts with knowledge of the

patent, it is easy enough to say that the necessary substitutions can be made. But that does not mean that the skilled person would actually think to make those substitutions, absent the patent.

92 I agree. Dr Casana-Giner's evidence appears to be riddled with hindsight. Plainly to him, the invention appears obvious. But that is not the question – the question is, would the skilled person at the priority date have found it obvious. Dr Casana-Giner has not put himself in the necessary mindset. He sees each of the individual changes to be made to be reasonably straightforward but does not really address the question of whether the skilled person would think to make them. His assertion of being "sure" that there are many possible attacks to inventiveness is unconvincing.

93 Mr Meade also criticised Dr Casana-Giner's evidence (particularly the passage from the witness statement quoted above) as displaying an excess of "mosaicing" – linking together unrelated documents to reconstruct the invention. I think that the issue was that Dr Casana-Giner was attempting to use various documents to illustrate common general knowledge, but unfortunately he was frequently unclear and equivocal when asked exactly what documents he considered to be common general knowledge. Consequently, I found his evidence in this area of little assistance overall.

94 There is nothing in the prior art to suggest using titanium dioxide or zinc oxide inside microcapsules as a UV protectant. Fekete could be said, to put it at its highest, to teach a general idea of "UV protectants can be placed inside microcapsules for insecticides". But it is clear from Dr Symes' evidence that to take this idea and apply it to using titanium dioxide to protect pyrethroids requires a whole new formulation. It appears, with work, this can be done (after all, Syngenta succeeded). But there is nothing to suggest that the skilled person would be motivated to start down this road, or that they would have any clear expectation of success in so doing. Titanium dioxide may be relatively cheap, but that in itself does not seem sufficient motivation to make it "obvious to try" given the likely hurdles to success, bearing in mind Jacob LJ's words in *Saint-Gobain*. I therefore find that claim 1 of the patent is inventive over Fekete.

Other claims

95 Having found claim 1 non-obvious, the claims dependent on it must likewise be non-obvious. Claim 9 claims a method of producing the microcapsule of claim 1 and therefore it and all dependent claims are non-obvious.

Conclusion

96 I find the application to amend is allowable. I find that the attacks based on insufficiency and lack of inventive step fail and that the patent as amended is valid.

Costs

97 I indicated at the hearing I would take submissions as to costs, bearing in mind the preliminary decision already issued in this case. I allow the parties 28 days to

make these.

Appeal

98 Under the Practice Direction to Part 52 of the Civil Procedure Rules, any appeal must be lodged within 28 days.

Peter Back

Divisional Director acting for the Comptroller