IN THE HIGH COURT OF AUSTRALIA

. MINNESOTA. MINING . AND . MANUFACTURING . . . . .
COMPANY AND ANOTHER

-v-

. . BEIERSDORF . (AUSTRALIA) . PTY . . LTD . . . . . .

ORIGINAL

REASONS FOR JUDGMENT

Judgment delivered at .SYDNEY . . . . . .

on . . WEDNESDAY . 15 . MARCH . 1978 . . . . . .

MINNESOTA MINING AND MANUFACTURING COMPANY AND ANOTHER

v.

BEIERSDORF (AUSTRALIA) PTY LTD

JUDGMENT

MURPHY J.

MINNESOTA MINING AND MANUFACTURING COMPANY AND ANOTHER

v.

BEIERSDORF (AUSTRALIA) PTY LTD

The plaintiffs, Minnesota Mining & Manufacturing Co. and 3M Aus.Pty Ltd claim that the defendant, Beiersdorf (Australia) Pty Ltd has infringed claims 7, 8 and 9 of Letters Patent No. 260604. The patent has the title, "Breathable Adhesive Tapes" and the relevant claims are:

> "7. A breathable translucent pressure-sensitive adhesive tape adapted for use as surgical tape, and comprising a translucent non-woven inextensible porous backing form of interlaced staple textile fibers unified by a water-insoluble rubbery fiber-binding sizing agent, carrying an interlocking visibly continuous adhesive coating having a microporous structure adequate to permit perspiration transpiration when applied to the human skin and being of a nature that is relatively non irritating to the human skin as hereinbefore defined, said adhesive coating consisting of a water-insoluble hydrophobic viscoelastic pressure sensitive adhesive polymer.
>
> 8. An adhesive tape according to claim 7 wherein said elastic pressure sensitive acrylate polymer.
>
> 9. A breathable translucent pressure sensitive adhesion surgical tape consisting of a thin inextensible non woven translucent porous backing formed of a compacted tissue of interlaced staple textile fibers unified by a nontacky hydrophobic rubbery acrylate polymer sizing carrying a partially penetrating thin transparent hydrophobic pressure sensitive adhesive coating of a nature that is relatively non irritating to the human skin as hereinbefore defined, said adhesive coating consisting solely of an aggressively-tacky hydrophobic viscoelastic pressure sensitive acrylate polymer the adhesive coating being visibly continuous but having a microporous structure such as to permit perspiration transpiration when the tape is applied to the human skin; said adhesive tape having a thickness not exceeding 150 microns and being highly translucent such as to permit the reading therethrough of printed matter when the tape is adhered to a printed surface."

The claimed priority date of all three claims is 18 April 1960.

The defendant counter-claims invalidity of the patent claimed but does not wish to pursue this counter claim if the plaintiffs fail to establish infringement.

On the claim of infringement, the issues emerged as follows:-

> "The integers claimed in Claims 7, 8 and 9 of Patent No.260604 and in respect of which infringement is disputed by the defendant are:
>
> (1) Claim 7
>
> The defendant disputes the plaintiffs' claims that the defendant's tape "Leukopor" (as sold in 1971 and 1972 up to the date of the proceedings) had the following characteristics:
>
> (a) that the adhesive is interlocking in the relevant sense;
> (b) that the adhesive had "a microporous structure";
> (c) that the backing was inextensible.
>
> (2) Claim 8
>
> The defendant disputes the plaintiffs' claims that the defendant's tape "Leukopor" had the following characteristics:
>
> (a) that the adhesive was interlocking in the relevant sense;
> (b) that the adhesive had "a microporous structure";
> (c) that the backing was inextensible.
>
> (3) Claim 9
>
> The defendant disputes the plaintiffs' claims that the defendant's tape "Leukopor" had the following characteristics:
>
> (a) that Leukopor has a thickness not exceeding 150 microns;
> (b) that the backing was inextensible;
> (c) that the backing consisted solely of a hydrophobic polymer sizing;
> (d) that the adhesive used was partially penetrating;
> (e) that the adhesive used had a microporous structure."

Microporosity and inextensibility, two integers in respect of which infringement is disputed, are common to each of the claims 7, 8 and 9. To succeed, the plaintiffs must establish both that the adhesive of the defendant's tape had a microporous structure and that the backing was inextensible. If the plaintiffs succeed in establishing those matters, then in order to prove infringement of claims 7 and 8, they need also to establish that the adhesive is interlocking and, to prove infringement of claim 9, they must establish that the defendant's Leukopor tape has a thickness not exceeding 150 microns; that its backing consisted solely of a hydrophobic polymer sizing, and that the adhesive used was partially penetrating.

On each of these issues, expert evidence was called by both parties. A number of questions were referred to a court expert, Dr Leo Lynch, agreed upon by both parties and appointed under Order 38 of the High Court Rules which provides:

> "2. In a case which is to be tried or heard without a jury and which involves a question for an expert witness, the Court or a Justice may in its or his discretion at any time on the application of a party, appoint an independent expert to inquire into and report upon a question of fact or of opinion not involving questions of law or construction.
>
> 3. (1) The report, so far as it is not accepted by all parties, shall be treated as information furnished to the Court and shall be given such weight as the Court thinks fit.
>
> ...

> 4. (1) A party may, within fourteen days after receipt of a copy of the report or within such other time as the Court or Justice directs, apply for leave to cross-examine the Court expert on his report.
>
> ...
>
> 5. (1) The Court expert shall, if possible, be a person agreed between the parties, but, failing agreement, he shall be nominated by the Court or a Justice.
>
> (2) The question or the instruction submitted or given to the Court expert, failing agreement between the parties, shall be settled by the Court or Justice."

The parties originally agreed upon the questions submitted but then differed over one question. I settled the questions in accordance with what I understood was the original agreement. The questions concerned:

(a) thickness;

(b) extensibility;

(c) microporosity;

(d) interlocking and/or partial penetration;

(e) hydrophobicity.

Microporosity. The plaintiffs contend that the word "microporous" is used in its ordinary literal meaning, that is, "having within it (the adhesive structure) very fine pores". The Webster's Third New International Dictionary (unabridged) 1961 Edition defines "microporous" as "full of or characterised by very fine pores" and "micropore" as "very fine pore (as one not easily visible to

the naked eye)". The Oxford English Dictionary has no definition of "micropore" or "microporous" but defines "micro" as "prefixed to a sn. to indicate that the object denoted by it is of relatively small size or extent as ...micropore (hence-porous adj.)" and "pore" as "a minute opening, orifice, aperture, perforation or hole (usually, one imperceptible to the unaided eye) through which fluids (rarely solid bodies) pass or may pass". In the ordinary English meaning of these words, a "micropore" does not have to be invisible to the naked eye, although it may be, as in Webster's dictionary, "not easily visible" to the naked eye, or as in the Oxford English Dictionary "usually imperceptible to the unaided eye".

The defendant has not put in issue the integer of claims 7, 8 and 9 that the adhesive coating is "visibly continuous". The plaintiffs argue that this must mean that the defendant admits that the pores in the surface of the adhesive coating are not perceptible to the naked eye under normal viewing conditions, and that the specific requirement in the claims that the coating is "visibly continuous" means that use of the word "microporous" does not involve this requirement, that is,the word "microporous" of itself may include a surface in which the pores are visible.

The plaintiffs rely on the defendant's conduct in distributing brochures describing the adhesive tape it manufactures and sells as "Leukopor" as being "microporous", as an admission that Leukopor is microporous in the natural and ordinary meaning of the word. The brochure states:

> "New skin safe Leukopor. The microporous adhesive tape that allows natural healing. Because it's non-woven and seven times more porous than ordinary adhesive plasters, Leukopor allows healing air to reach the wound, thus hurrying up the healing process. Perspiration dries readily through Leukopor and skin won't whiten or pucker.
>
> The customary resin and rubber adhesive has been replaced on Leukopor by a new synthetic substance, a polyacrylate that is tolerated extremely well by the skin. Permeability of the non-woven fabric to air and moisture is preserved despite the fast holding adhesive. (Under the microscope the adhesive coating of LEUKOPOR is seen to be highly porous too.)"

The word "microporous" is of course a relative term. In the claims of the patent, the relativity of the term is limited by the requirement that the microporous structure of the adhesive coating be -

> "adequate to permit perspiration transpiration when applied to the human skin" (claim 7);

or:

> "such as to permit perspiration transpiration when the tape is applied to the human skin" (claim 9).

If reference is made to other parts of the complete specification, it is clear that the word "microporous" is not used in any other sense than the ordinary and literal sense, and limited, as stated above. Claim 1 of the patent (the first process claim, which is not relied upon in these proceedings) specifies that during the process:

> "the applied adhesive coating ... autogenously develops a microporous state adequate for breathability of the adhesive sheeting to permit effective transpiration of perspiration and access to the skin of air and light".

Similarly, in claim 2 of the patent, "microporous" is limited in substantially identical terms. No special definition of "microporous" is found in the body of the complete specification and the use of "microporous" is consistent with its dictionary meaning. No special scientific or technical meaning of "microporous" as it is used in the claims is indicated.

The word "microporous" is used in the claims of the patent in its ordinary sense as applying to an adhesive structure "having within it very fine pores not easily visible to the naked eye". The word is a relative term, and there is no limitation in the claims or otherwise in respect of pore numbers or pore size, but the context in which the word is used in the claims, however, clearly requires it to be read together with the words of claim 7, "adequate to permit perspiration transpiration when the tape is applied to human skin". There is no need to imply any requirement that the micropores should fall within a particular range of sizes as measured for instance by diameter, or that there should be a certain number of pores per unit area.

The plaintiffs have not alleged infringement of claim 11 which states:

> "The breathable translucent pressure sensitive adhesive tape according to claims 7 and 9 adapted for use as surgical tape substantially as herein described with particular reference to the accompanying example."

In relation to this claim, the body of the specification states:

> "The pores in the adhesive coating vary randomly in size and range in diameter from 1 to 100 microns, with occasional pores exceeding the latter figure. Pores under 20 microns in diameter provide about 50% of the total pore volume."

Claims such as 11 are construed narrowly in a patent using general language (see Radiation Ltd v. Galliers & Klaerr Pty Ltd (1938) 60 C.L.R. 36 per Chief Justice Latham at p.41; Raleigh Cycle Coy Ld v. H. Miller & Coy Ld (1948) 45 R.P.C. 141).

The restricted statement in claim 11 is not to be used to cut down the general expression, microporous, in claims 7, 8 and 9. Lord Loreburn stated in Ingersoll Sergeant Drill Co. v. Consolidated Pneumatic Tool Co. 25 R.P.C. 61 at p.83:

> "The idea of allowing a patentee to use perfectly general language in the claim and subsequently to restrict or expand or qualify what is therein expressed by borrowing this or that gloss from other parts of the specification is wholly inadmissible."

I see no reason why that approach to construction should not be applied in favour of the plaintiffs. The word, microporous, as used in claims 7, 8 and 9 is not limited by the range of pore measurements described in relation to claim 11.

The word "microporous" as it is used in the claims of the specification in suit does not require "explanation, as being terms of art or of scientific use" by explanatory evidence (see Simpson v. Holliday (1866) L.R.1 H.L. 315) and the defendant has not established that there is any special scientific or technical use of the term apart from the ordinary meaning (Uniflec Reagents Ltd v. Newstead Colliery Ltd (1943) 50 R.P.C. 165 at pp.190-1). The defendant could only justify departing from the ordinary and natural meaning of the word "microporous" if it could not be given a "positive meaning" in its ordinary and natural sense and as a result it was necessary to refer to the body of the specification, as a dictionary, to clarify the meaning of the word and sufficiently define it (Welch Perrin & Co. Pty Ltd v.

Worrell (1960-1) 106 C.L.R. 588 at p.616). Although it is a relative term, there is no ambiguity in its use, as the claims make clear that the microporosity must permit perspiration transpiration and access to the skin of light and air. In some cases, and this is one, it is necessary to use a relative term and its use occasions no real difficulty (see British Thomson-Houston Co. v. Corona Lamp Works Ltd 39 R.P.C. 49; Interlego A.G. v. Toltoys Pty Ltd (1972-73) 130 C.L.R. 461, Chief Justice Barwick and Mr Justice Mason at p.480).

Any questions raised by the relativity of the term "microporous" in the context of the claims of the patent raise merely questions of fact and degree "which not only do courts have to answer daily, but which ... those skilled in the art would have little difficulty in resolving"(Mr Justice Stephen, Monsanto Co. v. Commissioner of Patents (1974) 48 A.L.J.R. 59 at p.60).

The only evidence of a special meaning of microporous was given by Mr Simmens (an expert microscopist) for the plaintiffs, and Professor Ayscough for the defendant. Mr Simmens' evidence follows:

> "In your normal usage as distinct from your reading of this patent specification, what do you say is the meaning of micropores? - Containing pores that are so small that they would not be readily apparent. You would probably need some assistance to the unaided eye in order to disclose the porosity.
>
> That is your normal scientific usage quite apart from your being asked by the plaintiffs to give evidence in this case and having studied the specification? - That is my answer.
>
> From what order of microns, what lower order of microns, would that prescription you have given start? - The micropores, the finest pore could not go down to - it is very hard to say - to the limit of one's resolving capability with the instrument you are using.

I am talking about the evidence you gave to his Honour of the meaning that you normally use, namely pores that are so small they are not readily apparent to the unaided eye. What is the maximum range? - Do I understand I am being asked what is the upper limit in size?

Yes. - Well it is generally considered, and I take it to be so, that a good young unaided eye viewed at its best distance of about 10 inches can resolve in general something of the order of 100 micrometres and this is the sort of boundary that I tend to take as my transition from something requiring aid to something one can see without.

His Honour: So if it is not larger than 100 micrometres it is a micropore? - Not strictly according to my definition but the line is hazy, your Honour. In that region I place my boundary."

Professor Ayscough was asked to define microporous:

"What is the meaning? - The established definition of the word "microporous" by usage in the field of science and technology is a pore whose dimensions range from about .01 of a micrometre to 10 micrometres."

However, in cross-examination, Professor Ayscough said:

"My definition of "microporous" is less than 10 microns, and I do not doubt that any fellow who wanted to prove me wrong if I said that this was not microporous would dig up a couple of pores that were 10 microns or less and prove that I was wrong. But I really do not know, I do not think I have enough knowledge of the pore size distribution in Leukopor at the time of the alleged infringement to come to a conclusion as to whether in fact it held to my definition of microporous. If you consult, say, Websters Dictionary, well then maybe you are in a better position because they just simply refer to it as the pore that needs to be seen under the microscope, or some words to that effect. That is not very helpful, is it?"

Professor Ayscough relied primarily on a passage in the Encyclopaedia of Polymer Science and Technology and an article by Professor Gelman to which it referred, both of which he acknowledged

to have been published after the priority date, which did not attempt a definition of the word "microporous". When cross-examined, he conceded that this article "considered in isolation" does not define microporosity but "makes a contribution" to defining the relevance in the Encyclopaedia. He agreed that neither the article relating to membranes, upon which he relied in the Encyclopaedia nor any passage in Professor Gelman's article which he cited, set any upper limit on microporosity.

Professor Ayscough refused to agree that the least distance discernible to the unaided human eye was about 100 microns, because he was "not sufficiently expert to be able to cast an opinion on that".

The defendant did not cross-examine Mr Simmens upon his definition of "microporous" or request that any questions be submitted to Dr Lynch to establish any scientific or technical meaning for the word "microporous". It did not attribute any special scientific or technical meaning to the statement in the brochures that "Leukopor" was microporous.

My conclusion is that there is no special scientific or technical meaning for the word "microporous" relevant to its use in the claims and the specification of the patent.

The plaintiffs submitted that the evidence established that the Leukopor had an adhesive coating with a "microporous structure" within the ordinary and natural meaning of "microporous" within claims 7, 8 and 9 (and within any scientific or technical meaning of the word "microporous" which could, on the evidence, be accepted).

Evidence on the microporous state of the adhesive of "Leukopor" was given by Dr Ashby and Mr Simmens for the plaintiffs and by Professor Ayscough and Dr Mueller for the defendant. The defendant did not tender evidence on microporosity from its witness most qualified to give it (Dr Robinson, a microscopist).

Dr Ashby gave evidence that he investigated whether both the Leukopor backing and the Leukopor tape were porous, which he could demonstrate simply by putting a piece over the mouth and blowing or sucking through it and he stated that he could not detect the porosity by his naked eye but only under the microscope. He stated that the porosity of the adhesive of Leukopor was not visible to the naked eye if one looks at the tape "in a normal reading position with normal reflected light", and that under such conditions it looked "visibly continuous". He said he would still say the tape was "microporous", even if the average pore area of Leukopor were three times that of the average pore area of the plaintiffs' tape Micropore.

Mr Simmens' principal evidence was:

> "Eight [specimen] pieces of tape ... were .. examined in [a] scanning electron microscope ... The adhesive side was found in all instances to be a continuous film containing openings or pores; many of the pores contained direct holes and through these the underlying sloping face of the spcimen mount could be seen as a bright or light area. In these instances there was an unobstructed pore through the tape... Some of the pores in the adhesive that showed no direct passage through when the tape surface was normal to the electron beam could be tilted into a position where it was possible to see through the tape. The pore size in the adhesive ranged from 25 um, to 200 um, the majority being of the order of 100 um diameter. In general all these aperture sizes were appreciably larger than the visible aperture or apertures through the backing..."

Dr Lynch's report was as follows:

"Are the pores in the adhesive of the defendant's said tape so tiny that they are not visible to the human eye upon casual inspection of the tape? - In answering this question specify what meaning you give to the word 'casual'.

Holding a specimen of the tape so that a light source can be viewed through it, one sees a large number of apparent 'pinholes' in the tape. - If these are pores of the tape they are certainly visible to the human eye. It is possible however, that because the adhesive is translucent, the apparent 'pinholes' are effects produced by the texture of the backing. Staring in close focus at the adhesive surface using reflected light, I have a strong impression that there are pores or bubbles in the adhesive. If these entities are pores they are visible.

Are the pores in the adhesive so tiny that they are not visible to the human eye upon inspection of the tape? - My answer to this question is contained in [my previous answer]. Except that I wish to comment that the visibility of the pores is not so much dependent on their size as on the optical properties of their surroundings. The textured nature of the backing makes it difficult to discern any small holes and the translucent nature of the adhesive provides a poor contrast. It is much more difficult to see a hole of a given size in a sheet of glass than in for example, a sheet of metal, especially if the glass is coated with snow flakes.

Is the adhesive coating of a visibly continuous nature to the human eye? - Except for the impression of pores as described in [my first answer above] the adhesive coating is of a visibly continuous nature to the human eye.

On the assumption that "microporous" refers to an aggregation of pores having an average diameter of not more than about 100 micrometres, is the adhesive of the defendant's said tape microporous? - The average/mean "diameter" of the pores in the adhesive of the Leukopor tape as measured by the procedure described below is

57 ± 3 um at the 95% confidence limit
57 ± 4 um at the 99% confidence limit.

The detailed measurements are presented in the form of a histogram in Fig.3. This shows that the upper limit is around 130 um. These largest holes are amongst those measured with the greatest accuracy.

On the assumption that "microporous" refers to an aggregation of pores having a diameter of not more than about 20 micrometres, is the adhesive of the defendant's said tape microporous? - No.

On the assumption that "microporous" refers to an aggregation of pores having a mean diameter of not more than about 20 micrometres, is the adhesive of the defendant's tape microporous? - No.

On the assumption that "microporous" refers to an aggregation of pores having an average diameter of not more than about 60 micrometres, is the adhesive of the defendant's tape microporous? - This is borderline. The results yield a mean value of 57 um ± 3 um at the 95% Confidence Limit. Because (a) the method is to some extent arbitrary (as is the definition of 'diameter') and (b) repeat measurements by different operators could reveal significant operator (subjective) bias, a much wider range of values than these statistical limits is indicated - maybe 57 ± 10 um!

On the assumption that "microporous" refers to an aggregation of pores having a mean diameter of not more than about 60 micrometres, is the adhesive of the defendant's tape microporous? - This question is answered in [my previous reply].

On the assumption that "microporous" refers to an aggregation of pores having an average diameter of not more than about 90 micrometres, is the adhesive of the defendant's tape microporous? - Yes.

On the assumption that "microporous" refers to an aggregation of pores having a mean diameter of not more than about 90 micrometres, is the adhesive of the defendant's tape microporous? - Yes."

I am satisfied that the adhesive of the defendant's tape had a microporous structure. The plaintiffs succeed on this aspect.

Inextensibility. The question is what the term "inextensible" means when used in the patent specification and whether the backing used by the defendant in the manufacture of Leukopor tape falls within that meaning.

The dictionary definitions are:

The Shorter Oxford English Dictionary

"Inextensible" - not capable of extension; that cannot be stretched or drawn out in length.

"Extensible" - capable of being extended in any dimension of direction; capable of being protruded.

Websters Third New International Dictionary (1961 Edition)

"Inextensible" - not extensible; incapable of extension; that cannot be stretched or drawn out in length.

"Extensible" - 1. of a material object
(a) capable of being extended in any dimension or direction; capable of being protruded.

These definitions, although expressed in absolute terms, are not to be taken in an absolute sense. As the plaintiffs asserted and the defendant conceded, all substances may be stretched by the application of sufficient force, nothing is absolutely inextensible. The ordinary meaning of "inextensible" is "not capable of stretching appreciably". This meaning should be applied unless:

(1) A different meaning is required by the recognised phraseology of the time among those technically skilled in the art. This does not apply; or

(2) The patent discloses that a special meaning is attached to the word which controls the meaning of the word when used subsequently in the specification (see Minerals Separation v. Noranda (1952) 69 R.P.C. 81 at p.94).

The word "inextensible" is used throughout the body of the specification in the following contexts:

(a) "The present tape has a porous backing (preferably a unified inextensible non-woven fibrous fabric) carrying a continuous but microporous pressure sensitive adhesive coating"

(b) "The use of a non-woven inextensible resilient fibrous backing which does not appreciably stretch under normal hand pulling has the advantage that the tape will retain or hold the skin in its initial position and that strappings will not develop slackness; which is not true of conventional cloth-backed surgical tapes"

(c) "The present process can be used to provide microporous adhesive coatings on woven cloth backings (including the type commonly employed in surgical tapes). However, thin non-woven inextensible porous backings are required to achieve the unique surgical tape having the combination of desired features previously indicated"

(f) "The preferred backing is a non-woven compacted tissue formed of interlaced staple rayon (or equivalent) textile fibres ... which is unified by ... and bands them together at their crossing points; such as to result in a thin, pliable, inextensible, resilient, water resistant, translucent, porous, clothlike fabric that is strong and tough enough for surgical tape usage and yet is finger tearable so that the tape can be supplied from a roll without having to be cut"

(g) "'Inextensible' tapes of even great lengthwise tensile strength, especially suitable as high-strength strapping tapes, can be provided by incorporating ..."

(h) "Use can also be made of porous film backings, the tape preferably being fibre-reinforced to obtain adequate strength and inextensibility combined with thinness and pliancy"

(i) "This translucent unified non-woven fabric, although thinner and more pliant than the cloth backings of conventional surgical tapes, has adequate tensile strength, toughness, resiliency and inextensibility for surgical strapping tapes".

None of these uses raises any doubt that the word "inextensible" is used in its ordinary sense in claims 7, 8 and 9.

The only occasion where the words of the specification may give any criterion to permit any definition of the word "inextensible" by standards other than those normally understood is set out in extract (b) above. This extract, after describing the backing indicates that "it does not appreciably stretch under normal hand pulling".

Dr Ashby gave evidence on behalf of the plaintiffs in respect to this integer, stating that the only test which he carried out to determine that the backing was inextensible was by taking a piece of Leukopor tape in two hands and pulling it. He demonstrated this in court and said: "It was to my way of thinking inextensible".

Dr Mueller's evidence for the defendant was to the effect that Leukopor tape was extensible. After stating that he had studied the plaintiffs' tape and Freudenberg backing from the point of view of stretchability, his evidence was:

> "Is there a method of evaluating extensibility? - Yes, we have measured the elongation at break for both samples and formed a value of 5% elongation with Mircopore and 21 to 22% elongation for Leukopor.
>
> Does the extensibility of Leukopor backing and tape in your view have commercial advantages? - Yes, we have an advantage in the extensibility because we have the experience of our tapes, a tape with good extensibility is better on the skin; it is very good in a surgical tape to move with the skin. We have found it better to have it stretchable".

He then demonstrated the difference between Micropore tape manufactured by the plaintiffs and Leukopor: when hand pulling was applied to Micropore, there was no visible elongation. This is consistent with patent specification extract (b) above; that

is, it does not appreciably stretch under normal hand pulling .

When the same strength was applied to Leukopor, it was visibly elongated.

> "What did you do then" - I put a force on it (Micropore - Exhibit "W") and it has no visible elongation. When I put the same strength on the Leukopor (Exhibit "X") I can elongate it. It goes not really back to the old width but nearly and that is the great difference between the two tapes and with respect to the extensibility - I may show what I want to say on the surgical tape, its extensibility is better for the skin. When I put it on my hand and the skin is moving, it is better when the tape can make the same movements as the skin."

To the question, "Does the backing of the defendant's said tape not appreciably stretch under normal hand pulling so that the tape when applied to the skin will retain or hold the skin in its initial position when applied?", he answered:

> "By 'normal hand pulling' I understand the hand pulling normally used in the process of affixing the tape to the skin. I have applied some 1" and 2" strips of the tape to different parts of my own and other persons' skins. From this experience I conclude that after normal application there is little distortion to the skin due to recovery of the tape from any extension even when applied to the loose skin of the nape of a person's neck.
>
> I wish to note a) that the mechanical properties of skin vary greatly over the body areas and also with the age of the person ... and b) that the wider the tape the less it is likely to be stretched during application."

Two of the questions put to Dr Lynch related to accepted or acceptable scientific methods of testing the percentage elongation of backing of the general nature of that used in the tapes the subject of these proceedings. He described those tests and

carried out certain of them. His results showed that Leukopor backing had an "apparent elongation at break" of 23.8% or 24.4% depending on the testing method used. The test carried out on Leukopor tape showed an apparent elongation at break of 29%.

He was also asked:

> "Assuming that 'inextensible' as applied to a non-woven backing formed of interlaced staple textile fibres unified by a water-insoluble rubbery fibre binding sizing agent means that such a backing does not appear to the human eye to stretch to any measurable extent before breaking or tearing when a steady lengthwise force is imparted in opposite directions to the backing by slow hand pulling, is the defendant's said tape 'inextensible'?"

He answered "no" to this question, both in respect of Leukopor backing and Leukopor tape.

From Dr Mueller's evidence, it is clear that the plaintiffs' tape Micropore retains its shape to a much greater extent than the defendant's tape Leukopor before breaking and that Leukopor will be extended by a force which will not extend Micropore. Micropore elongates 5% before breaking whereas Leukopor elongated 21-22% before breaking. It is clear from this that application of a pulling load to Leukopor backing (or tape) will extend it a considerable proportion of its length before it will break whereas applying a pulling load to Micropore will only extend it a very small proportion of its length before it breaks.

The fact that Leukopor stretches more than Micropore is not decisive, but the extent to which Leukopor stretches before breaking shows that it is capable of stretching appreciably.

Counsel for both the plaintiffs and the defendant submitted that I was entitled to and should personally test the tape by hand pulling (see Interlego A.G. v. Toltoys Pty Ltd). I have done so. My experience was that the Leukopor (and hence its backing) stretched appreciably with normal hand pulling appropriate to the application of adhesive tape, and, in the ordinary sense of the word, it was not inextensible, but extensible.

I find that the backing of the tape was not inextensible and that the plaintiffs fail on this aspect. It follows that it is not necessary to state my conclusions on the other aspects of infringement. There has been no infringement. It is also not necessary to state my conclusion whether the patent was invalid. I refrain from stating my conclusions on these other issues because of the absence of any doubt on the issue of inextensibility.

The appointment of a court expert proved to be extremely rewarding. The fact that the parties agreed upon the appointment of Dr Lynch and almost entirely upon the questions on which he was to report, (and then did not seek to cross-examine him as they were entitled to), assisted greatly in the resolution of these technical questions.

The plaintiffs' claim fails. There will be judgment for the defendant. The action is dismissed.

This and the preceding 19 pages comprise my reasons for judgment in Minnesota Mining and Manufacturing Company and Another v. Beiersdorf (Australia) Pty Ltd.