

Claimed numerical ranges scrutinised by the English courts

English Court of Appeal rules in favour of ConvaTec in the latest chapter of the dispute over silverised wound dressings, holding that Smith & Nephew's process falls within the claimed numerical range, despite an attempted work around to avoid explicit numerical limits.

The breadth of terms in patent claims is often in dispute and this recent decision highlights how far the English courts are prepared to go when determining the scope of claimed numerical ranges. The decision is a reminder that care is needed when drafting and amending patent applications containing numerical ranges and when assessing freedom to operate based on such patents.

Background

ConvaTec owns EP (UK) patent 1,343,510 relating to methods of preparing silverised wound dressings. Claim 1 of the patent includes a step of soaking fibres in a binding agent solution to facilitate silverisation, specifying that the binding agent is present in a concentration "between 1% and 25% of the total volume of treatment". The scope of the lower end of the range was the focus of this dispute and the Court of Appeal had to decide whether Smith & Nephew's process, which uses 0.77% of binding agent, fell within the claimed range.

In its first instance decision (see our earlier [briefing note](#)), the High Court granted Smith & Nephew a declaration of non-infringement on the basis that the ends of the claimed

range would be read by the skilled person applying the "significant figures" approach, meaning that the range of between 1% and 25% should be construed to include values greater than or equal to 0.95% and less than 25.5%. On appeal, ConvaTec maintained its position from the first instance proceedings that the lower limit of 1% is expressed with an accuracy to the nearest whole number and so the skilled person would understand that the claimed range encompassed any number which, when rounded to the same degree of accuracy, would be equal to 1%. On this basis, ConvaTec argued that the range extended to include values equal to or above 0.5%, and that the 0.77% solution used by Smith & Nephew therefore fell within the scope of the claims.

Smith & Nephew's primary case was that 1% constitutes an exact value and means precisely what it says, namely that anything below exactly 1% was excluded from the scope of the claim. It also relied on a secondary argument reflecting the first-instance finding that the skilled person would round the end points of the ranges using the significant figures approach, meaning that values greater than or equal to 0.95% were included, but not values as low as 0.77%.

The Court of Appeal's decision

In construing the claims, the Court of Appeal emphasised that the correct approach for a numerical range is in principle the same as for any other claimed feature. The key question is always what the skilled person, applying his common general knowledge and reading the specification as a whole, would have understood the author to be using the claim language to mean. Certain points of particular relevance to numerical ranges were emphasised by the court, based on principles emerging from the relevant UK and EPO jurisprudence. Of note is the court's view that any rounding or approximation can only be applied to the numerical values in the claim and not to those in the prior art or the alleged infringement. Additionally, the court noted that, in light of the common general knowledge and the specification as a whole, it may be that the skilled person would understand that the patentee had chosen to express the numbers in the claim to a particular degree of precision and so intended the claim to include all values which fall within the claimed range when stated with the same degree of precision. However, whether

this was in fact the case would depend on all the relevant facts, including the degree of accuracy to which the numbers were expressed in the claim.

Accordingly, looking at the teaching in the specification as a whole, the court noted that the specification mentioned other ranges that were expressed to a higher degree of accuracy than the claimed range. This was taken to show that the patentee knew how to be more precise, but had chosen the less precise language of the claim, where the values were expressed merely to the nearest whole number. The court also pointed to an example in the specification which suggested that the binding agent concentration is not critical because it could be anywhere between 0.01% and 50%. On this basis, the court concluded that the skilled person would have understood that the patentee did not intend that the claimed end points be interpreted as exactly 1% and exactly 25%.

Examining the “significant figures” approach applied in the first instance decision, the court commented that it resulted in anomalies, such as asymmetrical error margins at each end of the range and different error margins for the same number depending on whether the number is at the bottom or the top end of the range. Central to the decision to reject the significant figures approach was the court’s finding that the purpose of the claimed numerical range was to convey to the reader of the patent the range of permissible binding agent concentrations and the degree of accuracy with which those concentrations need to be determined. On this basis, the significant figures approach was rejected because the anomalies identified led to “a result that bears no relationship to the distribution of random error in practice” and the skilled person would have no reason to suppose that this was what the patentee intended.

For these reasons, the Court of Appeal decided that the range of 1% to 25% should be construed using ConvaTec’s

whole numbers approach, meaning that the range extended to include values equal to or above 0.5% and that Smith & Nephew’s process using 0.77% therefore represented an infringement.

Comment

This decision raises interesting issues of construing numerical ranges, highlighting that the correct approach very much depends on the facts of each case. It remains to be seen whether the generous approach favoured in this case will be adopted in similar cases in the future. Nevertheless, patentees should carefully consider the accuracy with which claimed numerical ranges are expressed when drafting or amending patent applications and the impact of expressing numerical ranges elsewhere in the specification. Equally, those working close to a claimed numerical range and looking to develop work-arounds must take into account the potential for the English courts to apply a broad scope to numerical ranges, if the circumstances justify it.

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