

LEXICOGRAPHERS BEWARE – AN EXPLICIT DEFINITION WILL LIMIT CLAIM SCOPE

The Court of Appeals for the Federal Circuit ruled that a claim must be limited to an explicit definition in the specification. In *Sinorgchem Co. v. International Trade Commission*, 511 F.3d 1132 (Fed. Cir. 2007), an opinion authored by Judge Dyk, the Court vacated an ITC order finding that Sinorgchem's importation of a rubber anti-degradant literally infringed method claims of Flexsys America's patents in view of the patentee's definition that "clearly, deliberately, and precisely" defined a claim term. In so doing, the Court held that the patentee acted as his own lexicographer. A dissenting opinion by Judge Newman argued that the definition was only one of many examples limited to specific conditions that the majority erred by extending the limitation to all conditions.

Sinorgchem makes 6PPD in China for importation into the United States. 6PPD is made from an intermediate compound, 4-ADPA, which Sinorgchem also makes in China. Sinorgchem makes 4-ADPA intermediates in China in accordance with a method that reacts aniline with nitrobenzene in the presence of TMAH, which is a base. Aniline also serves as a solvent, and at least 10-15 percent water (protic material) is present throughout the reaction.

Flexsys America owned two patents (United States Patents Numbers 5,117,063 and 5,608,111) directed to methods of making two rubber anti-degradant compounds, 6PPD and 4-ADPA. The '111 patent issued from a continuation-in-part of the application from which the '063 patent issued, and contained additional Examples 13 –

21 but was otherwise substantially identical to the earlier application. Two claims from each of the patents were asserted.

A representative claim included 4 steps, including the following step:

reacting the aniline and nitrobenzene in a confined zone at a suitable temperature, and in the presence of a suitable base and controlled amount of protic material to produce one or more 4-ADPA intermediates.

There was no dispute that Sinorgchem used the other three steps of the claim. Thus, the focus was on the recited step, and whether Sinorgchem's method of producing 4-ADPA intermediates satisfied the limitations of this step.

The ITC's decision rested on construction of the term "controlled amount of protic material." The specification contained the following descriptions of the amount of protic material at column 5, lines 27-57:

Control of the amount of protic material present in the reaction is important. Generally, when the reaction is conducted in aniline, water present in the reaction in an amount greater than about 4% H₂O, (based on volume of the reaction mixture) inhibits the reaction of the aniline with the nitrobenzene to an extent where the reaction is no longer significant [sic]. Reducing the amount of water to below the 4% level causes the reaction to proceed in an acceptable manner. ... A "controlled amount" of protic material is an amount up to that which inhibits the reaction of aniline with nitrobenzene, e.g., up to about 4% H₂O based on the volume of the reaction mixture when aniline is utilized as the solvent. The upper limit for the amount of protic material present in the reaction varies with the solvent. For example, when DMSO is utilized as the solvent and TMAH is utilized as the base, the upper limit on the amount of protic material present in the reaction is about 8% H₂O based on the volume of the reaction mixture. When aniline is utilized as a solvent with the same base, the upper limit is 4% H₂O based on the volume of the reaction mixture. In addition, the amount of protic material tolerated will vary with the type of base, amount of base, and base cation, used in the various solvent systems.

Patentee Flexsys argued that the “controlled amount” was that amount of protic material between an upper limit of “that amount beyond which the reaction between nitrobenzene and aniline is inhibited” and a lower limit “below which the desired selectivity for 4-ADPA intermediates is not maintained.” *Id.* at 1134-35.

Sinorgchem argued that the “controlled amount” was “up to about 4% water in the reaction mixture when aniline is the solvent.” Sinorgchem did not infringe if this construction was adopted, and infringed if Flexsys’s construction was adopted. *Id.* at 1134.

The ALJ adopted Flexsys’s construction and found that Sinorgchem literally infringed. On appeal, the ITC rejected this construction, and found that the patentee had “acted as his own lexicographer and expressly defined the meaning of ‘controlled amount’ of protic material as ‘an amount up to that which inhibits the reaction of aniline with nitrobenzene.’” *Id.* at 1135. However, the ITC excluded that part of the description directed to ““up to about 4% H₂O based on the volume of the reaction mixture when aniline is utilized as the solvent.”” *Id.* The ITC found this excluded language to be inconsistent with the general definitional language and with Example 10, which yielded a calculated water concentration of 10% in a reaction of aniline, nitrobenzene, and TMAH. Rather, the ITC construed the upper limit of “controlled amount” as the concentration of protic material that “inhibits the reaction of aniline with nitrobenzene.”” *Id.* The ITC noted that Example 8, with DMSO as solvent, illustrated a significant drop in conversion

rate (63 percent to 12 percent) as the water concentration increased from 6 to 9.75%. Sinorgchem's process yields a conversion rate of about 85 percent. The ITC found infringement.

The Court of Appeals for the Federal Circuit reviewed this issue of claim construction *de novo*. The court noted that the specification is “the single best guide to the meaning of a disputed term.” *Id* at 1136, citing *Phillips v. AWH Corp.*, 415 F.3d 1303, 1306 (Fed. Cir. 2005) (en banc). Here, the patentees acted as their own lexicographers for the term ‘controlled amount,’ which does not have a standardized meaning in the art. Specifically, as cited above, the specification states the following:

A ‘controlled amount’ of protic material is an amount up to that which inhibits the reaction of aniline with nitrobenzene, e.g., up to about 4% H₂O based on the volume of the reaction mixture when aniline is utilized as the solvent.

Column 4, lines 48-52 of the '063 patent. Thus, the specification specifically defined this claim term “clearly, deliberately, and precisely.” *Id*. This express definition is “neither ambiguous nor incomplete ... and we need look no further for its meaning.” *Id*. at 1138. Thus, Sinorgchem does not literally infringe the claims in question.

The court also found it telling that only one other solvent (DMSO) had a specific limitation set forth in the specification. Thus, of the eight solvents mentioned in the specification, only DMSO and aniline had maximum concentrations described in the specification. The court therefore considered the language about variability to be directed to the other six solvents.

The court found it significant that Example 10 does not specifically disclose the amount of water used. Although this water can be determined by complex calculation, the calculation is difficult. Further, explicit water concentrations are given for other examples. Therefore, the court found, “the fact that the calculated amount of water in Example 10 exceeds 4% where aniline is used as the solvent is entitled to little weight, and cannot override the clear definitional language set forth in the specification.” *Id.* at 1139. A claim differentiation argument also was found not persuasive.

In view of these points, the Court of Appeals for the Federal Circuit held that the specific definition controlled the general definition, and that the “vague language cannot override the express definitional language.” *Id.* at 1138. Therefore, no literal infringement was found, as it was undisputed that Sinorgchem used more than 4% water. The ITC had not considered infringement under the doctrine of equivalents, however, so the case was remanded for this determination.

In dissent, Judge Newman emphasized the language relating to the variability of the water concentration as a function of the identities of the solvent, base, and base cation. The dissent also points out that the entire specification is to be used to construe the claims, and claims are not to be construed to exclude examples. The dissent further considered the examples, many of which illustrate significantly more than 4 percent water. The dissent also argues that the majority, seeing ‘no need to look further’ than this specific definition, ignored the testimony of expert witnesses and therefore failed to consider all the evidence.