

The opinion in support of the decision being entered
is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Ex parte ORTMUND LANG, BERND RUMPF,
MATTHIAS FRAUENKRON, DIRK FUNHOFF,
THOMAS MANDERBACH, and BERND STEIN

Appeal 2007-1629
Application 10/138,337
Technology Center 1600

Decided: August 24, 2007

Before ERIC GRIMES, NANCY J. LINCK, and RICHARD M.
LEBOVITZ, *Administrative Patent Judges*.

LEBOVITZ, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 1-13 and 17-19. We have jurisdiction under 35 U.S.C. § 6(b). We reverse.

STATEMENT OF CASE

The claims are directed to processes for the purification of triethylenediamine (TEDA). Claims 1-13 and 17-19, which are all the pending claims, are on appeal (Br. 2). The sole rejection on review in this

appeal is of claims 1-13 and 17-19 under 35 U.S.C. § 112, second paragraph (Br. 3). The Examiner contends claims 1 and 10 contain terms which render the scope of the claims indefinite. Claims 1 and 10 read as follows:

1. A process for the purification of triethylenediamine (TEDA) in which TEDA is vaporized and the gaseous TEDA is passed into a liquid solvent and is subsequently crystallized from this, wherein the mother liquor obtained after the TEDA has been crystallized is extracted with an extractant which is immiscible or only slightly miscible with the solvent of the mother liquor and in which TEDA is readily soluble, and the TEDA-depleted mother liquor obtained after extraction is returned to the process and reused as organic solvent into which gaseous TEDA is passed, and/or the TEDA-enriched extractant which has been used for the extraction is returned to the process, and reused for extraction.

10. The process as claimed in claim 1, wherein the solvent used in the crystallization step is selected from the group consisting of cyclic and acyclic hydrocarbons, chlorinated aliphatic hydrocarbons, aromatic hydrocarbons, alcohols, ketones, aliphatic carboxylic acids, aliphatic nitriles and esters.

DISCUSSION

A specification must conclude with claims “particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.” 35 U.S.C. § 112, second paragraph (2000). 35 U.S.C. § 112, second paragraph, “is essentially a requirement for precision and definiteness of claim language.” *PPG Industries, Inc. v. Guardian Industries Corp.*, 75 F.3d 1558, 1562, 37 USPQ2d 1618, 1621 (Fed. Cir. 1996) (quoting *In re Borkowski*, 422 F.2d 904, 909, 164 USPQ 642, 646 (CCPA 1970)). The language of the claims must make it clear what subject matter they encompass. The “purpose is to provide those who would

endeavor, in future enterprise, to approach the area circumscribed by the claims of a patent, with the adequate notice demanded by due process of law, so that they may more readily and accurately determine the boundaries of protection involved and evaluate the possibility of infringement and dominance.” *In re Hammack*, 427 F.2d 1378, 1382, 166 USPQ 204, 208 (CCPA 1970).

Claim 1 is directed to a process for purifying TEDA involving steps in which TEDA is vaporized, passed into a liquid solvent, crystallized from the solvent, and extracted. The claim further recites that “the TEDA-depleted mother liquor obtained after extraction is returned to the process and reused as organic solvent into which gaseous TEDA is passed.” It also states that, in addition or in the alternative, “the TEDA-enriched extractant which has been used for the extraction is returned to the process, and reused for extraction.”

The Examiner contends that the phrase “returned to the process” is indefinite. The Examiner argues: “In one case, a liquor is being returned [to the process], in the other case, an extractant is being returned. *A thing cannot be returned to a process.* It can be returned to a location such as a vessel or it can be returned to a filtrate. It can be returned to original feedstock, etc. but not to a process itself” (Answer 3).

In our opinion, the phrase “returned to the process” in each instance does not make the scope of the claim unclear. In the first instance, the phrase “returned to the process” is qualified by stating that the TEDA-depleted mother liquor is “reused as organic solvent,” making it clear that the liquor is to be used in the same process recited in the preceding steps of the claim, i.e., in which the TEDA is vaporized, passed into a liquid solvent,

crystallized from the solvent, and extracted. Similarly, it is clear that “returned to the process” in the second occurrence means – as expressly stated – that the extractant is “reused for extraction” in the claimed process. By stating that the solvent or extractant is “returned to the process,” it is quite clear that they are cycled (Spec. 3: 1-8) back into the TEDA purification process which is recited in claim 1. Thus, we conclude that claim 1 conforms to the statutory requirements of §112, second paragraph.

For claim 10, the Examiner contends:

It is not clear what Appellants actually mean by the term ‘cyclic . . . hydrocarbons’ in claim 10, *because their remarks have rendered this term indefinite*. In its plain meaning this would be perfectly clear, as it would cover any group which is both a hydrocarbon and is cyclic. However, earlier remarks (paper of 11/20/2003) stated, “One of ordinary skill in the art would not refer [to aromatic cyclic hydrocarbons] benzene, toluene, xylem [sic, xylene], naphthalene etc., as a cyclic hydrocarbon.” This is an utterly baffling assertion, made without any substantiation whatsoever. These four are unquestionably cyclic and these are unquestionably hydrocarbons, so of course one of ordinary skill in the art would refer to them as cyclic hydrocarbons. It is therefore clear that Appellants intend some specialized (more narrow) meaning of ‘cyclic . . . hydrocarbons’ which is markedly different from its literal meaning, in order to exclude those four.

(Answer 4-5 (emphasis added).)

We disagree with the Examiner that Appellants’ remarks have the effect of rendering the claim term “cyclic . . . hydrocarbons” indefinite under § 112, second paragraph. During prosecution, claims are given their broadest reasonable interpretation as they would be understood by persons of ordinary skill in the art in the light of the Specification. *See, e.g., In re Morris*, 127 F.3d 1048, 1054, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997); *In re*

Crish, 393 F.3d 1253, 1256, 73 USPQ2d 1364, 1367 (Fed. Cir. 2004). The Examiner correctly finds (Answer 5) that cyclic hydrocarbons would be understood by persons of ordinary skill in the art to include both aromatic and non-aromatic hydrocarbon rings. This definition is also consistent with the Specification (Spec. 3: 20-30; Answer 5). Thus, the broadest reasonable meaning of the phrase “cyclic . . . hydrocarbons” is that it includes aromatic hydrocarbons. We adopt this meaning here.

When a patent applicant asserts a definition of a claim term during patent prosecution that is contrary to its broadest reasonable meaning as would be understood by a person of skill in the art in the context of the patent application, it is our opinion that the Office may chose to reject the applicant’s definition in favor of its own. In reaching a final determination of a claim term’s broadest reasonable meaning, the Office may consider several possible definitions before settling on the one that is most reasonable in the context of the claimed invention. That other definitions were contemplated and ultimately rejected does not inject ambiguity into the claim, even when the rejected definition is Appellants’ own. But, it should be made perfectly clear on the record – once the Office has chosen the broadest reasonable definition to rely on in examining the claims – that all other definitions have been disavowed, including definitions espoused by the applicant. By making the record clear, the claim interpretation reasonably relied upon during patent prosecution is unambiguous and there is no chance that definitions proffered by an applicant, but rejected by the Office, will lead the public astray about the proper scope of the claim.

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Here, to the extent that the Appellants have argued that the “cyclic . . . hydrocarbons” has other meanings (see Br. 7), we reject these meanings and interpret the phrase to mean aromatic and non-aromatic cyclic hydrocarbons.

For the reasons discussed above, we conclude that the Examiner erred in rejecting Claims 1-13 and 17-19 as indefinite under 35 U.S.C. § 112, second paragraph. The rejection is

REVERSED.

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