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Paper 29
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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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DAICEL CORPORATION,
Petitioner,

v.

CELANESE INTERNATIONAL CORPORATION,
Patent Owner.

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Case IPR2015-00170
Patent 8,076,507 B2

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Before LINDA M. GAUDETTE, CHRISTOPHER L. CRUMBLEY, and JON B. TORNQUIST, *Administrative Patent Judges.*

GAUDETTE, *Administrative Patent Judge*.

DECISION
Denying Patent Owner's Request for Rehearing
*37 C.F.R. § 42.71*

## I. BACKGROUND

On June 26, 2015, we entered a Decision (Paper 16, "Reh'g Dec.") granting-in-part Daicel Corporation's ("Petitioner") Request for Rehearing (Paper 15) and instituting *inter partes* review of claims 1–4, 6–11, and 13 of U.S. Patent No. 8,076,507 B2 (Ex. 1002, "the '507 patent"). In Petitioner's Request for Rehearing, Petitioner persuaded us that, in our initial decision denying institution of *inter partes* review (Paper 14, "Init. Dec."), we overlooked testimony in the declaration of its expert, Mr. Cooper (Ex. 1003, "Cooper Declaration"). *See* Reh'g Dec. 9. Upon reconsideration of the Petition (Paper 6, Amended Petition for *Inter Partes* Review ("Pet.")) in light of Petitioner's Request for Rehearing, we determined the information presented in the Petition was sufficient to support a reasonable likelihood that Petitioner would prevail on the merits in showing claims 1–4, 6–11, and 13 would have been unpatentable over U.S. Patent No. 6,339,171 B1 (Ex. 1011, "Singh"), U.S. Patent No. 5,625,095 (Ex. 1010, "the '095 patent"), and Acetic Acid Synthesis From Methanol, 20 J. JAPAN PETROLEUM INSTITUTE 379–462 (1977) (English Translation) (Ex. 1013, "Akinori"). *See* Reh'g Dec. 8–10. Accordingly, we instituted an *inter partes* review based on this ground of unpatentability. *Id.* at 10. We were not persuaded, however, that we abused our discretion in declining to institute an *inter partes* review of claims 1–4, 6, 7, 10, 11, and 13, based on anticipation by the '095 patent, and of claims 1–4, 7–11, and 13, based on obviousness over Singh, alone. *See* Reh'g Dec. 3–8.

On July 10, 2015, Celanese International Corporation ("Patent Owner") filed a Request for Rehearing (Paper 18, "PO Req. Reh'g") of our Rehearing Decision instituting *inter partes* review of claims 1–4, 6–11, and

13 of the ’507 patent. For the reasons that follow, Patent Owner’s Request for Rehearing is denied.

## II. ANALYSIS

When considering a request for rehearing of a decision on a petition, the Board reviews the decision for an abuse of discretion. 37 C.F.R. § 42.71(c). An abuse of discretion may arise if a decision is based on an erroneous interpretation of law, if a factual finding is not supported by substantial evidence, or if an unreasonable judgment is made in weighing relevant factors. *Star Fruits S.N.C. v. U.S.*, 393 F.3d 1277, 1281 (Fed. Cir. 2005); *Arnold P’ship v. Dudas*, 362 F.3d 1338, 1340 (Fed. Cir. 2004); *In re Gartside*, 203 F.3d 1305, 1315–16 (Fed. Cir. 2000). The party requesting rehearing has the burden of showing that the decision should be modified, and “[t]he request must specifically identify all matters the party believes the Board misapprehended or overlooked.” 37 C.F.R. § 42.71(d).

Patent Owner contends we erred in: (1) relying on Mr. Cooper’s arguments and alleged calculations regarding DME concentration, because they were improperly incorporated by reference into the Petition; (2) according weight to Mr. Cooper’s Testimony that DME is inherently present in an overhead distillation stream of the ’095 patent process; and (3) determining Petitioner had established a reasonable likelihood that it would prevail in showing unpatentability of claims 11 and 13. *See* PO Req. Reh’g 3–4, 12.

We address each of the issues raised by Patent Owner in detail below.

*A. Was the Board's decision to institute based on consideration of arguments and evidence that were improperly incorporated by reference into the Petition?*

Patent Owner argues the Petition is completely silent concerning the arguments and evidence on which we based our decision to institute trial, i.e., Mr. Cooper's arguments and calculations regarding DME concentration present in the '095 patent process, and Exhibits 1029 and 1030, cited in support thereof. PO Req. Reh'g 4. Patent Owner contends "Petitioner's claim that DME is present in the reactor [of the '095 patent process] is stated in a single sentence on page 26 of the Petition." *Id.* at 3. Patent Owner further asserts that Exhibits 1029 and 1030, cited by Mr. Cooper in support of his calculations, are not discussed in the Petition or included in the Petition's list of exhibits. *Id.* at 4. Patent Owner, noting that our rules prohibit incorporating arguments by reference from one document into another, thus, contends our decision to institute trial was based on consideration of arguments and evidence that were improperly incorporated by reference into the Petition. *Id.* at 3 (citing 37 C.F.R. § 42.6(a)(3)).

We have fully considered Patent Owner's argument, but are not persuaded that our decision to institute trial was based on arguments and/or evidence that were not properly presented in the Petition.

We do not agree with Patent Owner that Petitioner's arguments in support of the presence of DME are limited to the following sentence: "It is well known that such a mixture will produce at least some amount of DME through equilibrium processes," PO Req. Reh'g 2 (quoting Pet. 26). This sentence appears in Petitioner's discussion of the challenge based on anticipation by the '095 patent. *See generally* Pet. 21–35. We did not

institute trial on this challenge; rather, we instituted trial on Petitioner's challenge based on unpatentability over the '095 patent, Singh, and Akinori. The Petitioner includes the following discussion in connection with this challenge.

The Petition states that the '507 patent, the '095 patent, Singh, and Akinori are all directed to methods for producing acetic acid via the Monsanto process. Pet. 4, 50. The Petition cites pages 7–8 of Akinori in support of a statement that "DME is inherently produced in the Monsanto process" (Pet. 25) and, therefore, is necessarily produced in the '095 patent process (*id.* at 52). The Petition states, more specifically, that Akinori shows DME is produced in various equilibrium side reactions that occur in the reactor in a Monsanto process. *Id.* at 51–52 (citing "Ex. 1003, ¶¶ 95–96, *citing* Ex. 1013, p. 8"). The Petition further provides an explicit reason why DME also necessarily would be present in the distillation overheads in the '095 patent: "Due to the very low boiling point of DME (-23.7ºC) it is extremely volatile at the temperatures of the reactor and will readily distill from the reaction mixture upon formation, thereby introducing DME to the system for subsequent distillations and presence in the overheads. (Ex. 1003, ¶ 98, 99, *citing* Ex. 1017)." Pet 26; *see also id.* at 27 (citing Ex. 1003 ¶¶ 97–103).

Our rules require that the Petition include a full statement of the reasons for the relief requested, including a detailed explanation of the significance of the evidence. 37 C.F.R. § 42.22(a)(2). The full statement in the Petition must identify the supporting evidence relied upon to support the challenge and the relevance of the evidence to the challenge raised, including identifying specific portions of the evidence that support the

challenge. *Id.* at § 42.104.

Patent Owner has not explained why the above statements from the Petition, that include specific citations to the Cooper Declaration and Akinori as supporting evidence, are insufficient to satisfy these rules. With regard to Exhibits 1029 and 1030, Patent Owner has not identified language in the rules or case law to support its contention that the Petition must cite and/or explain the relevance of evidence relied upon in an expert declaration. *See* 37 C.F.R. § 42.65(a) ("Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight."). In sum, Patent Owner has not persuaded us that our decision to institute trial was based on consideration of arguments and evidence that were improperly incorporated by reference into the Petition.

*B. Did the Board err in according weight to Mr. Cooper's testimony that DME is inherently present in an overhead distillation stream of the '095 patent process?*

Patent Owner contends "the Board erred in its consideration of Mr. Cooper's testimony and calculations, which were not based on substantial evidence, but were instead based on numerous unsupported assumptions and irrelevant evidence." PO Req. Reh'g 4. Patent Owner discusses Mr. Cooper's calculations and opinions, as well as the evidence relied on by Mr. Cooper in support thereof, and explains why it believes Mr. Cooper failed to demonstrate that DME is necessarily present in an overhead distillation stream of '095 patent process. *See id.* at 4–12.

As acknowledged by Patent Owner, *id.* at 5, a request for rehearing "must specifically identify all matters the party believes the Board misapprehended or overlooked, and the place where each matter was

previously addressed in a motion, an opposition, or a reply," 37 C.F.R. § 42.71(d). Patent Owner contends its arguments "respond to contentions presented *exclusively* in the Cooper Declaration and not in the Petition, and presented for the first time in the Rehearing Decision," such that it "has not yet had a reasonable opportunity to respond to them." Req. Reh'g 5. We disagree that Patent Owner did not have an opportunity in its Preliminary Response to address any alleged deficiencies in Mr. Cooper's calculations. As noted in Section II.A., above, the Petition provides a sufficiently detailed discussion of why DME necessarily would be present in the reactor and distillation overheads in the '095 patent process, and identifies paragraphs 95–99 of the Cooper Declaration in support thereof. Thus, the arguments presented in Section IV of Patent Owner's Request for Rehearing fail to comply with 37 C.F.R. § 42.71(d), and we need not address them for this reason.

Nonetheless, Patent Owner's arguments regarding the alleged deficiencies in Mr. Cooper's testimony are not persuasive at this stage of the proceeding, because they are based primarily on attorney argument. In other words, because Patent Owner has not given us a reason to doubt the veracity of Mr. Cooper's testimony, at this stage of the proceeding, it is premature for us to conclude that his opinion is entitled to little or no weight. During trial, Patent Owner will have an opportunity to further address Mr. Cooper's testimony, and present new testimony evidence to support its assertions as to the sufficiency of Mr. Cooper's testimony.

In sum, Patent Owner has not persuaded us that we erred in according weight to Mr. Cooper's Testimony that DME is inherently present in an overhead distillation stream of the '095 patent process.

*C. Did the Board err in determining Petitioner established a reasonable likelihood that it would prevail in showing the unpatentability of claims 11 and 13 over Singh, the '095 patent, and Akinori?*

Patent Owner requests that we reconsider our decision to institute trial as to claims 11 and 13 (PO Req. Reh'g 12), which depend directly from independent claim 1 (Ex. 1002, 12:44, 49). In its Preliminary Response (Paper 12, "Prelim. Resp."), Patent Owner explained why the features recited in claims 11 and 13 did not inherently result in the '095 patent process, and were not taught or suggested by Singh. *See* Prelim. Resp. 37–38, 47–48. Patent Owner also argued the limitations of claims 11 and 13 were not disclosed or suggested by the combination of the '095 patent, Singh, and Akinori. *See id.* at 56–60. We did not address these arguments in our initial decision, because we determined: "Petitioner's evidence [was] insufficient to support its contention that [the '095 patent] process inevitably results in a second overhead stream comprising DME, as recited in independent claim 1," Init. Dec. 18; "Petitioner [had] not provided adequate argument or evidence to support its contention that the amount of water present in Singh's process . . . would provide a sufficient amount of water to produce 'a second overhead stream comprising . . . dimethyl ether' as recited in claim 1," *id.* at 23; and "Petitioner [had] not explained how Akinori cures the above-noted deficiencies in its challenges as to independent claim 1 based on Singh and the '095 Patent, individually," *id.* at 24. In our decision on Petitioner's Request for Rehearing, however, we agreed with Petitioner that we had overlooked evidence relied on by Petitioner in support of its patentability challenge based on the '095 patent, Singh, and Akinori, and determined that, "for purposes of our decision on whether to institute trial on

this challenge, Mr. Cooper's testimony provide[d] persuasive support for Petitioner's contention that DME is inherently present in an overhead distillation stream of the '095 patent process." Reh'g Dec. 9. We did not discuss claims 11 and 13, but stated that, "the Petition identifie[d] sufficiently how Singh discloses features in the dependent claims that are not explicitly described in the '095 patent." *Id.*

In light of Patent Owner's Request for Rehearing, we have reconsidered the arguments made in the Preliminary Response with respect to claims 11 and 13. We are not convinced, however, of error in our determination that Petitioner provided sufficient explanation and evidence to support a reasonable likelihood that it would prevail on the merits in showing claims 11 and 13 would have been unpatentable over the combination of the '095 patent, Singh and Akinori.

Claim 1 recites "distilling at least a portion of the first overhead to produce a second overhead stream comprising . . . dimethyl ether." Ex. 1002, 12:12–14. "Claims 11 and 13 . . . add: (i) that the distillation step (a) further comprises the step of forming dimethyl ether during the distillation (Claim 11), and (ii) that the second overhead comprises an amount of dimethyl ether *in excess* of any dimethyl ether present in the first overhead (Claim 13)." Prelim. Resp. 47–48. In its Preliminary Response, Patent Owner explained that these limitations capture "the unexpected discovery that the addition of a sufficient amount of water under specific conditions could form DME and that this DME improved the separability of acetaldehyde from methyl iodide in the subsequent extraction step." *Id.* at 47. Patent Owner argued these limitations were not taught or suggested by Singh, because Singh, at most, suggests the use of small amounts of water as

a solvent, and actually discourages the use of water altogether. *Id.* at 48. Patent Owner argued Petitioner had not shown these limitations were taught by the '095 patent, because Petitioner had not identified support for its assertion that the addition of water to the distillation column in the '095 patent was the equivalent of increasing DME. *Id.* at 37–38. With respect to claim 13, Patent Owner also argued "the mere increase in DME *concentration* that is alleged in the Miura Declaration falls short of teaching an increase in absolute quantity of DME in the second overhead stream relative to the first overhead stream." *Id.* at 38.

In support of its challenge as to claims 11 and 13, Petitioner cited column 7, lines 25–27 of the '095 patent, which read: "When distillation for separation is carried out in one distillation column, water may be charged into the distillation column." Pet. 59–60. Petitioner also cited column 5, lines 1–5 of Singh, which describe adding water to the distillation column. *Id.* at 58–59. Petitioner cited paragraphs 71 and 78–80 of Mr. Cooper's declaration (*id.* at 34, 41), wherein Mr. Cooper testified that adding water to the distillation columns in the '095 patent and Singh processes would generate DME (Ex. 1003 ¶¶ 71, 80). Further, as discussed in Section II.A., above, Petitioner explained why one of ordinary skill in the art would have understood from Akinori that DME would be produced in the distillation column and present in the overheads in the '095 patent and Singh processes, and identified testimony in the Cooper Declaration in support thereof. *See e.g.* Pet. 27 (citing Ex. 1003 ¶¶ 97–103); Ex. 1003 ¶101 (concluding, after discussing Akinori's disclosure of the equilibrium side reactions in a Monsanto process, that "[t]he expected result is that DME forms where water and methyl iodide are present under distillative conditions, and that

the amount of DME can be increased by feeding water to the distillation column"). As is apparent from the citations in the paragraph above, Petitioner has identified evidentiary support for its contentions that DME would be formed during the distillation steps in Singh and the '095 patent processes, and that the second overhead would comprise an amount of DME in excess of any DME present in the first overhead, as recited in claims 11 and 13. Patent Owner's unsupported attorney argument fails to convince us that Mr. Cooper's testimony is unreasonable, or unsupported by the evidence he relies upon.[1] Therefore, we are not persuaded that we erred in determining Petitioner's arguments and evidence are persuasive, at this stage of the proceeding, to establish a reasonable likelihood that Petitioner would prevail in showing the unpatentability of claims 11 and 13 over Singh, the '095 Patent, and Akinori.

[1] In its Rehearing Request, Patent Owner does not argue that we erred in failing to explicitly construe claim 13. *See* PO Req. Reh'g 12. In its Preliminary Response, however, Patent Owner disagreed with Petitioner's construction of claim 13 and argued that "[u]nder the correct claim construction, [Petitioner] . . . failed to demonstrate a reasonable likelihood of prevailing in showing inherent anticipation of Claim 13 by the '095 patent." Prelim. Resp. 38. In our decision on Patent Owner's Rehearing Request in related IPR2015-00171, we concluded that the interpretation of challenged claim 43 advanced by Petitioner was consistent with the broadest reasonable interpretation. The limitations of claim 13 are similar to those of claim 43. Therefore, we likewise determine Petitioner's proposed interpretation of claim 13 represents the broadest reasonable interpretation (for purposes of our decision to institute trial). *See* Pet. 21 ("'[A]n amount of dimethyl ether in excess of any dimethyl ether present in the mixture' is construed to be a comparison of the wt% of DME in the mixture to the wt% of DME in the overhead composition.").

## III. CONCLUSION

Patent Owner has not convinced us that we abused our discretion in our decision to institute an *inter partes* review of claims 1–4, 6–11, and 13 based on obviousness over Singh, the '095 patent, and Akinori.

## IV. ORDER

Patent Owner's request for rehearing is *denied*.

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