

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* GENERAL ELECTRIC COMPANY

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Appeal 2008-0094  
Reexamination Control 90/007,205<sup>1</sup>  
Patent 5,055,523  
Technology Center 3900

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Decided: February 20, 2008

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Before TEDDY S. GRON, ADRIENE LEPIANE HANLON, and  
CAROL A. SPIEGEL, *Administrative Patent Judges*.

GRON, *Administrative Patent Judge*.

DECISION ON APPEAL

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<sup>1</sup> Reexamination Control 90/007,205, filed September 16, 2004, for reexamination of U.S Patent 5,055,523, which issued October 8, 1991, from Application 07/493,973, filed March 15, 1990, in which the Applicants thereof claimed benefit under 35 U.S.C. § 119 of the December 25, 1989, filing date of Japan 1-332953, the March 31, 1989, filing date of Japan 1-82520, the March 31, 1989, filing date of Japan 1-82519, the March 31, 1989, filing date of Japan 1-82518, and the March 20, 1989, filing date of Japan 1-66287.

### Introduction

This is an appeal under 35 U.S.C. § 134 from an examiner's final rejections of all pending claims, Claims 19-24, of Reexamination Control 90/007,205, filed September 16, 2004, under: (1) 35 U.S.C. § 102(b) over Japanese Examined Patent Application Publication Sho. No. 54-30009, dated September 27, 1979 (hereafter Japan Sho)<sup>2</sup>; and (2) 35 U.S.C. § 103(a) in view of Japan Sho, as evidenced by Brack et al. (hereafter Brack), U.S. Patent 6,500,914 B1, which issued December 31, 2002, from Application 09/682,724, filed October 10, 2001; Sakashita et al. (hereafter Sakashita), U.S. Patent 5,151,491, which issued September 29, 1992, from Application 07/410,464, filed September 21, 1989; and Polycarbonates, Vol. 27, pp. 519-522 (1978).

Appellant has argued the patentability of no claim other than independent Claim 19 and dependent Claim 20 separately. Accordingly, Claims 21-24 stand or fall with Claim 19 or 20 upon which they alternatively depend. 37 C.F.R. § 41.37(c)(1)(v). Claim 19 is directed, in pertinent part, to a composition comprising: (1) an aromatic polycarbonate resin prepared by a transesterification reaction, having a ratio of non-phenolic end groups to phenolic end groups "between about 10:1 and about 7:3"; and (2) an "aromatic vinyl-diene-vinyl cyanide copolymer" (App. Br., Claims Appendix (App'x)). Claim 20 further limits the ratio of non-phenolic end groups to phenolic end groups in the aromatic polycarbonate

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<sup>2</sup> All citations of, and references to, Japan Sho No. 54-30009 hereinafter are citations of, and references to, the English Translation thereof identified in the Examiner's Answer (Ans.), page (p.) 6.

resin component of the composition of Claim 19 to “between about 10:1 and about 5:1” (App. Br., App’x).

For the reasons stated hereinafter, all the appealed final rejections are REVERSED.

### Discussion

To interpret the full scope and content of the compositions Appellant claims, we look first to the claim language itself. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-13 (Fed. Cir. 2005)(*en banc*). In this case, the full scope and content of the subject matter Appellant claims are sufficiently clear from the claim language itself to allow persons having ordinary skill in the art to compare the prior art compositions to the claimed compositions and resolve all the issues raised by this appeal.

“[T]he Examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a prima facie case of unpatentability.” *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). “If examination at the initial stage does not produce a prima facie case of unpatentability, then without more the applicant is entitled to grant of the patent.” *Id.* at 1445.

Two preliminary questions have our immediate attention. First, is Brack prior art? Second, has the Examiner relied upon the teachings of Brack and/or Sakashita to show what Japan Sho’s aromatic polycarbonate component prepared by a transesterification reaction would have meant to a person having ordinary skill in the art, or has the Examiner relied upon Japan Sho, Brack and/or Sakashita for combined prior art teachings which

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would have led persons having ordinary skill in the art to the compositions Appellant claims?

First, we conclude that Brack is not prior art. Brack was first filed in this country on October 10, 2001. Appellant's U.S. Patent 5,055,523, issued October 8, 1991.

The PTO has the initial burden to establish a prima facie case of obviousness under 35 U.S.C. § 103. *In re Fine*, 837 F.2d 1071, 1074 (Fed. Cir. 1988); *In re Piasecki*, 745 F.2d 1468, 1471-72 (Fed. Cir. 1984). The PTO can satisfy this burden by showing some objective teaching in the art or prior knowledge in the art which would have led one of ordinary skill in the art to the subject matter claimed. *In re Fine*, 837 F.2d at 1075. However, the PTO ever must be cautious not “[t]o imbue one of ordinary skill in the art with knowledge of the invention in suit . . . when no prior art reference or references of record convey or suggest that knowledge.” *In re Fine*, 837 F.2d at 1075 (emphasis added), quoting from *W.L. Gore & Assoc. v. Garlock, Inc.*, 721 F.2d 1540, 1553 (Fed. Cir. 1983).

Perhaps the Examiner in this case saw fit to exercise an abundance of caution and therefore relied upon Brack and Sakashita to explain, but not expand, what the Japan Sho disclosure would have meant to a person having ordinary skill in the art at the time Appellant's patent application was first filed. *See In re Baxter Travenol Labs.*, 952 F.2d 388, 390 (Fed. Cir. 1991) (“extrinsic evidence may be considered when it is used to explain, but not expand, the meaning of a reference”). We shall review the Examiner's case for unpatentability of Appellant's claimed compositions comprising an aromatic polycarbonate resin and an aromatic vinyl-diene-vinyl cyanide

copolymer under 35 U.S.C. § 102 or 103 based on the prior art compositions comprising of an aromatic polycarbonate resin and an aromatic vinyl-diene-vinyl cyanide copolymer which are described in Japan Sho. The Examiner argues that the aromatic polycarbonate component of Japan Sho's compositions inherently comprises "an aromatic polycarbonate resin prepared by a transesterification reaction having a ratio of non-phenolic end groups . . . to phenolic end groups . . . between about 10:1 and about 7:3" (App. Br., App'x), as evidenced by Brack, Sakashita, and the 1979 Polycarbonate Article (Ans., p. 9).

The Examiner finds, and Appellant does not deny the Examiner's finding, that Japan Sho describes a composition comprising an aromatic polycarbonate resin prepared by a transesterification reaction and a second resin being an aromatic vinyl-diene-vinyl cyanide copolymer (Ans., p. 7). The Examiner and Appellant appear to agree that Japan Sho does not explicitly describe the aromatic polycarbonate component as "having a ratio of non-phenolic end groups . . . to phenolic end groups . . . between about 10:1 and about 7:3" (App. Br., App'x, Claim 19) or having a ratio of non-phenolic end groups to phenolic end groups "between about 10:1 and 5:1" (App. Br., App'x, Claim 20) (App. Br., p. 8; Ans., pp. 8-9).

However, the Examiner cites Brack, Sakashita, and the Polycarbonate article as evidence that the aromatic polycarbonate resin component Japan Sho describes for use in its compositions inherently has a ratio of non-phenolic end groups to phenolic end groups between about 10:1 and about 7:3 (App. Br., App'x, Claim 19) and a ratio of non-phenolic end groups to phenolic end groups between about 10:1 and 5:1 (App. Br., App'x, Claim

20) (Ans., p. 8). Appellant argues that, even if Brack, Sakashita, and the Polycarbonate article show that an aromatic polycarbonate resin of a composition Japan Sho describes might have a ratio of non-phenolic end groups to phenolic end groups within the ranges recited in claims 19 and 20, the extrinsic evidence does not show that any aromatic polycarbonate of a composition Japan Sho describes necessarily has a ratio of non-phenolic end groups to phenolic end groups within the ranges recited in claims 19 and 20 (App. Br., pp. 8-9). According to Appellant, the extrinsic evidence must show that an aromatic polycarbonate of a composition Japan Sho describes necessarily has a ratio of non-phenolic end groups to phenolic end groups between about 10:1 and about 7:3 (App. Br., App'x, Claim 19) or necessarily has a ratio of non-phenolic end groups to phenolic end groups between about 10:1 and 5:1 (App. Br., App'x, Claim 20) in order to establish that Japan Sho describes every element of Appellant's claimed composition (App. Br., pp. 12-13). In our view Appellant's position best represents the law.

Anticipation can be found when a claim limitation is inherent or otherwise implicit in a single prior art disclosure. *Standard Havens Products, Inc. v. Gencor Industries, Inc.*, 953 F.2d 1360, 1369 (Fed. Cir. 1991). However, a prima facie case of inherency is established when the extrinsic evidence shows that (1) the prior art necessarily describes the subject matter claimed, or (2) reasonably would have suggested to a person having ordinary skill in the art that the prior art (here Japan Sho) necessarily describes the subject matter claimed. Anticipation cannot be based on

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possibilities or probabilities. *See Continental Can Co. USA, Inc. v. Monsanto Co.*, 948 F.2d 1264, 1269 (Fed. Cir. 1991):

To serve as an anticipation when the reference is silent about the asserted inherent characteristic, such gap in the reference may be filled with recourse to extrinsic evidence. Such evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. *In re Oelrich*, 666 F.2d 578, 581 . . . (CCPA 1981)(quoting *Hansgirk v. Kemmer*, 102 F.2d 212, 214 . . . (CCPA 1939)) provides:

Inherency, however may not be established by probabilities or possibilities. The mere fact that a certain thing *may* result from a given set of circumstances is not sufficient. . . . If, however, the disclosure is sufficient to show that the natural result flowing from the operation as taught would result in the performance of the questioned function, it seems to be well settled that the disclosure should be regarded as sufficient.

*See Akamai Technologies, Inc. v. Cable & Wireless Internet Services, Inc.*, 344 F.3d 1186, 1192 (Fed. Cir. 2003)(“A claim limitation is inherent in the prior art if it is necessarily present in the prior art, not merely probably or possibly present.”); and *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999) (“Inherent anticipation requires that the missing descriptive material is ‘necessarily present,’ not merely probably or possibly present, in the prior art.”). Appellant invited the Examiner also to see *In re Rijckaert*, 9 F.3d 1531, 1534 (Fed. Cir. 1993), and *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Int. 1990), in accord.

We agree with the Examiner’s view that a prima facie case of anticipation under 35 U.S.C. § 102 and/or obviousness under 35 U.S.C.

§ 103 may be supported by evidence which reasonably shows that the characteristics missing from a prior art disclosure necessarily flow from the teaching of the prior art. *Ex parte Levy*, 17 USPQ2d at 1464. We also agree with the Examiner that evidence of inherency which reasonably supports a prima facie case of anticipation under 35 U.S.C. § 102 and/or obviousness under 35 U.S.C. § 103 is sufficient to require the patent applicant to provide rebuttal evidence. *In re Best*, 562 F.2d 1252, 1255 (CCPA 1977). However, the evidence in support of inherency in this case must establish or reasonably suggest that the missing descriptive ratio of non-phenolic end groups to phenolic end groups in the aromatic polycarbonate component of a composition described by Japan Sho is necessarily between about 10:1 and about 7:3, as required by Claim 19, or necessarily between about 10:1 to 5:1, as required by Claim 20, not merely that the ratio of non-phenolic end groups to phenolic end groups in the aromatic polycarbonate component of the compositions Japan Sho describes is probably or possibly the same. This the Examiner has not done.

#### Factual findings

It is not disputed that Japan Sho describes compositions comprising an aromatic polycarbonate resin prepared by a transesterification reaction and an aromatic vinyl-diene-vinyl cyanide copolymer.

Japan Sho describes compositions comprising a 4,4'- dihydroxy diphenylalkane polycarbonate resin component prepared by a transesterification reaction (Japan Sho, pp. 2, 7, 9, and 13).

It is not disputed that the Polycarbonate Article teaches that polycarbonate resins produced by a transesterification reaction generally have a number of OH end groups.

It is not disputed that Brack teaches (Brack, col. 1, ll. 10-15):

Polycarbonates prepared by the reaction of a dihydric phenol (such as bisphenol A, "BPA") and diaryl carbonate (such as diphenyl carbonate, "DPC") in a melt transesterification process generally contain significant levels of uncapped chains (7-50%) as compared to interfacially prepared polycarbonates.

It is not disputed that Appellant's Claim 19 is directed to a composition comprising an aromatic polycarbonate resin having from about 9 to about 30% phenolic end groups and about 91 to about 70% non-phenolic end groups (Ans., pp. 7-8, bridging para.).

It is not disputed that Appellant's Claim 20 is directed to a composition comprising an aromatic polycarbonate resin having from about 9 to about 17% phenolic end groups and about 91 to about 83% non-phenolic end groups (Ans., p. 10).

It is not disputed that Sakashita teaches (Sakashita, col. 11, ll. 27-32):

A polycarbonate according to the invention is characterized in that from 10 to 30% of its terminal groups are hydroxy groups.

Further a polycarbonate according to the invention is characterized in that not more than 30%, preferably from 5 to 25%, more preferably from 10 to 20%, of its terminal groups are hydroxy groups . . . .

It is not disputed that Brack and Sakashita provide original and comparative examples of aromatic polycarbonates prepared by a

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transesterification reaction which have percentages of phenolic end groups both within and outside the range of about 9 and about 30%, as specified in Appellant's Claim 19, and within and outside the range of about 9 to 17%, as specified in Appellant's Claim 20. See Brack's Table 2 (Endcapper EC/Free-OH mole-ratio) and Sakashita's Tables 1-3 (Content of hydroxy terminal groups (%)).

#### Patentability

Having considered the cases the Examiner presents for unpatentability of the subject matter Appellant claims under 35 U.S.C. § 102 over the compositions described in Japan Sho and under 35 U.S.C. § 103 in view of the compositions described in Japan Sho, as evidenced by extrinsic evidence which purports to establish that the compositions described by Japan Sho have certain undisclosed inherent characteristics, we find that the extrinsic evidence the Examiner asks us to consider does not show that any aromatic polycarbonate component of the compositions which Japan Sho describes as having been prepared by a transesterification reaction necessarily has between about 9 to about 30% terminal hydroxyl groups, as required by Appellant's Claim 19, or between about 9 to 17% terminal hydroxyl groups, as required by Appellant's Claim 20. Accordingly, the case the Examiner makes for unpatentability of the subject matter Appellant claims is based on no more than a possibility or probability that Japan Sho describes every element of the claimed compositions. Since the final rejections are based on evidence showing no more than a possibility or probability that Japan Sho describes every element of the claimed compositions rather than evidence

showing that Japan Sho necessarily describes every element of the claimed compositions, the Examiner's rejections must be reversed.

The Examiner would have us understand that Japan Sho describes aromatic polycarbonates having any and all ratios of non-phenol end groups to phenol end groups which might result from conventional preparation by a transesterification reaction. However, the extrinsic evidence does not establish that all aromatic polycarbonates prepared by a transesterification reaction necessarily have a ratio of non-phenol end groups to phenol end groups between about 10:1 to about 7:3. Moreover, we find no evidence that any one of the aromatic polycarbonates prepared by a transesterification reaction that Japan Sho describes for use in the compositions it discloses necessarily has a ratio of non-phenol end groups to phenol end groups between about 10:1 to about 7:3.

Finally, the case for patentability before us is based exclusively on the Examiner's finding that an aromatic polycarbonate component of the compositions described by Japan Sho inherently has a ratio of non-phenol end groups to phenol end groups between about 10:1 to about 7:3. On review, we conclude that the Examiner's findings with regard to inherent characteristics of the aromatic polycarbonate resins of the compositions described in Japan Sho are not supported by the extrinsic evidence of record.

#### Conclusion

Having considered all the evidence and arguments for and against the patentability of Claims 19-24 of Reexamination Control 90/007,205, filed September 16, 2004, under: (1) 35 U.S.C. § 102(b) over Japanese Examined Patent Application Publication Sho. No. 54-30009, dated September 27,

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1979; and (2) 35 U.S.C. § 103(a) in view of Japan Sho, as evidenced by Brack et al., U.S. Patent 6,500,914 B1, which issued December 31, 2002, from Application 09/682,724, filed October 10, 2001; Sakashita et al., U.S. Patent 5,151,491, which issued September 29, 1992, from Application 07/410,464, filed September 21, 1989; and Polycarbonates, Vol. 27, pp. 519-522 (1978), we reverse the Examiner's final rejections.

ORDER

Accordingly, it is

ORDERED that the Examiner's final rejection of Claims 19-24 of Reexamination Control 90/007,205, filed September 16, 2004, under 35 U.S.C. § 102(b) over Japanese Examined Patent Application Publication Sho. No. 54-30009 is REVERSED;

FURTHER ORDERED that the Examiner's final rejection of Claims 19-24 of Reexamination Control 90/007,205, filed September 16, 2004, under 35 U.S.C. § 103(a) in view of Japanese Examined Patent Application Publication Sho. No. 54-30009, as evidenced by Brack et al., U.S. Patent 6,500,914 B1; Sakashita et al., U.S. Patent 5,151,491; and Polycarbonates is REVERSED; and

FURTHER ORDERED that the application is remanded to the examiner for action consistent with the views expressed herein.

REVERSED

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