In the Matter of

CERTAIN MULTICELLULAR PLASTIC FILM

Investigation No. 337-TA-54

USITC PUBLICATION 987

JUNE 1979

United States International Trade Commission / Washington, D.C. 20436

UNITED STATES INTERNATIONAL TRADE COMMISSION

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Washington, D.C.

In the Matter of CERTAIN MULTICELLULAR PLASTIC FILM	Investigation No. 337-TA-54

COMMISSION DETERMINATION, ORDER, AND OPINION

The United States International Trade Commission conducted an investigation under the authority of section 337 of the Tariff Act of 1930 (19 U.S.C. 1337) and 19 U.S.C. 1337a ("section 337") of alleged unfair methods of competition and unfair acts in the unauthorized importation into the United States of certain multicellular plastic film by reason of the alleged coverage of such film during manufacture in a foreign country by claims 1 and 2 of U.S. Letters Patent 3,416,984, or in such film's subsequent sale by the owner, importer, consignee, or agent of either, the effect or tendency of which is to destroy or substantially injure an industry, efficiently and economically operated, in the United States. On June 12, 1979, the Commission determined that there is a violation of section 337 and ordered that multicellular plastic film manufactured abroad in accordance with the process disclosed by claims 1 and 2 of U. S. Letters Patent 3,416,984 be excluded from entry into the United States for the remaining term of that patent (until December 17, 1985) unless the importation is licensed by the patent owner.

The purpose of this Commission Determination, Order, and Opinion is to provide for the final disposition of the Commission's investigation of certain multicellular plastic film. The Commission's determination and order follow immediately and are followed by the Commission opinion in support thereof.

Determination

Having reviewed the record compiled in this investigation, including (1) the submissions filed by the parties, (2) the transcript of the evidentiary hearing and the exhibits which were accepted into evidence in the course of that hearing, (3) the recommended determination of the administrative law judge, and (4) the public hearing before the Commission on May 17, 1979, the Commission, on June 12, 1979, determined--

1. That with respect to all respondents in investigation No. 337-TA-54 except Tong Seae Industrial Co., Ltd., there is a violation of section 337 of the Tariff Act of 1930, as amended, in the importation into and sale in the United States of certain multicellular plastic film by the owner, importer, consignee, or agent of either, the tendency of which is to substantially injure an industry, efficiently and economically operated, in the United States; with respect to Tong Seae Industrial Co., Ltd., there is no violation of section 337 of the Tariff Act of 1930, as amended;

2. That the appropriate remedy for such violation is to direct that multicellular plastic film manufactured abroad in accordance with the process disclosed by claims 1 and 2 of the U.S. Letters Patent 3,416,984 be excluded

from entry into the United States for the remaining term of said patent, except under license of the patent owner;

3. That after considering the effect of such exclusion upon the public health and welfare, competitive conditions in the U.S. economy, the production of like or directly competitive articles in the United States, and U.S. consumers, such film should be excluded from entry; and

4. That the bond provided for in subsection (g)(3) of section 337 of the Tariff Act of 1930 be in the amount of 3.5 cents per square foot of multicellular plastic film.

Order

Accordingly, it is hereby ordered that--

1. Multicellular plastic film manufactured abroad in accordance with the process disclosed by claims 1 and 2 of U.S. Letters Patent 3,416,984 is excluded from entry into the United States for the remaining term of said patent except (1) as provided in paragraph 2 of this order, infra, or (2) as such importation is licensed by the owner of U.S. Letters Patent 3,416,984;

2. That the multicellular plastic film ordered to be excluded from entry is entitled to entry into the United States under bond in the amount of 3.5 cents per square foot from the day after the day this order is received by the President pursuant to section 337(g) of the Tariff Act of 1930, as amended, until such time as the President notifies the Commission that he approves this action or disapproves this action, but, in any event, not later than sixty (60) days after such day of receipt;

3. That persons desiring to import multicellular plastic film into the United States may petition the Commission to institute such further proceedings as may be appropriate in order to determine whether the multicellular plastic film sought to be imported should be allowed entry into the United States;

4. That this order be published in the Federal Register and served upon each party of record in this investigation and upon the U.S. Department of Health, Education, and Welfare, the U.S. Department of Justice, the Federal Trade Commission, and the Secretary of the Treasury; and

5. That the Commission may amend this order at any time.

By order of the Commission.

Kenneth R. Mason
Secretary

Issued: June 29, 1979

COMMISSION OPINION

Procedural History

The present investigation was instituted by the United States International Trade Commission on June 26, 1978, on the basis of a complaint filed pursuant to section 337 of the Tariff Act of 1930, as amended, by Sealed Air Corporation of Fair Lawn, New Jersey. Notice of the Commission's investigation was published in the Federal Register of June 29, 1978 (43 F.R. 28258). The complaint alleged that unfair methods of competition and unfair acts existed in the importation into the United States, or in the subsequent sale, of multicellular plastic film swimming pool covers, by reason of the alleged coverage of the multicellular film by method claims 1 and 2 of U.S. Letters Patent 3,416,984 allegedly practiced in a foreign country, unfair low pricing of swimming pool covers manufactured from the imported multicellular plastic film, and unfair competition by use of advertising. The effect or tendency of such importation was alleged to be to destroy or substantially injure an industry, efficiently and economically operated, in the United States.

The scope of the Commission's investigation was defined by the following language contained in its notice of investigation:

> . . . pursuant to subsection (b) of section 337 of the Tariff Act of 1930, as amended (19 U.S.C. 1337), an investigation (is) instituted to determine, under subsection (c) whether, on the basis of the allegations set forth in the complaint and the evidence adduced, there is a violation or reason to believe that there is a violation of subsection (a) of this section in the unauthorized importation of certain multicellular plastic film into the United States, or in its subsequent sale, either in roll or in swimming pool cover form, by reason of the alleged coverage of imported multicellular plastic film during manufacturing in a foreign country by claims 1 and 2 of U.S. Letters Patent 3,416,984, the effect or

tendency of which is to destroy or substantially injure an industry, efficiently and economically operated, in the United States. The alleged unfair low pricing of swimming pool covers manufactured from the imported multicellular plastic film, and the alleged unfair methods of competition by use of advertising have not been included in the scope of the investigation because of failure to conform these allegations in the complaint to the requirements of Commission rules (19 CFR 210.20).

Named as respondents in the notice of investigation were two domestic importers and three foreign manufacturers and/or exporters:

Domestic importers

Peter Darlington
d/b/a Solar Pool Covers
180 E. South Spruce Street
South San Francisco, California 94080

Polybubble, Inc.
1181 Chess Drive, #D
Foster City, California 94404

Foreign manufacturers/exporters

Conform Plastics Ltd.
113 Mays Road
Auckland, New Zealand

Tong Seae Industrial Co., Ltd.
No. 73, 6 fl.
Chang-An East Road
Section 1
Taipei, Taiwan

Unipak (H.K.) Ltd.
1/F. 59-61 Wong Chuk Hang Road
Aberdeen, Hong Kong

Upon institution this matter was referred to Administrative Law Judge Janet D. Saxon (the ALJ) who held an evidentiary hearing at which all interested parties were afforded an opportunity to be heard. Complainant Sealed Air Corporation, respondents Polybubble, Inc., and Tong Seae Industrial

Co., Ltd., were represented by counsel at the hearing before the ALJ. The Commission investigative attorney also participated in the hearing. Respondent Peter Darlington participated in discovery but was not represented at the hearing. Respondent Conform Plastics Ltd. filed a response to the complaint and notice of investigation, thereby appearing generally, but did not comply with discovery orders and was not represented at the hearing. By order dated October 31, 1978, the ALJ imposed the following sanctions on Conform pursuant to section 210.36 of the Commission's Rules of Practice and Procedure (19 C.F.R. 210.36):

> 1. An inference was drawn that the testimony, documents, or other evidence sought from Conform by complainant would have been adverse to Conform;
>
> 2. Conform was prohibited from introducing evidence under its control in support of its position in the investigation; and
>
> 3. Conform was estopped from objecting to the introduction and use of secondary evidence to show what the withheld testimony, documents, or other evidence would have shown.

Respondent Unipak (H.K.) Ltd. failed to file a response to the complaint and the notice of investigation, and such failure was deemed by the ALJ to constitute a waiver of Unipak's right to appear and contest the allegations of the complaint and the notice of investigation. By order of December 7, 1978, the ALJ found Unipak to be in default, and ruled that "without further notice to Unipak, the facts may be found to be as alleged in the complaint and notice of investigation."

On March 23, 1979, the ALJ issued a recommendation that the Commission determine that there is no violation of section 337 in the importation into and sale in the United States of certain multicellular plastic film because

the methods used to manufacture such film abroad would not, if practiced in the United States, infringe any valid U.S. letters patent. More particularly, the ALJ recommended that claims 1 and 2 of U.S. Letters Patent 3,416,984 (hereinafter "the '984 patent") be held invalid for purposes of section 337 for the reason that those claims were described in a printed publication more than 1 year prior to the date on which the patent application that ultimately matured into the '984 patent was filed. Assuming claims 1 and 2 of the '984 patent to be valid, the ALJ also recommended that the Commission make the following determinations:

1. The processes used by Conform and Unipak to manufacture multicellular plastic film abroad would, if practiced in the United States, infringe claims 1 and 2 of the '984 patent;

2. The process used by Tong Seae to manufacture multicellular plastic film abroad would not, if practiced in the United States, infringe claims 1 and 2 of the '984 patent; and

3. The unauthorized sale in the United States by Polybubble and Peter Darlington of multicellular plastic film manufactured abroad by Conform and Unipak has the tendency to injure substantially an industry, efficiently and economically operated, in the United States.

Exceptions to the ALJ's findings of fact and conclusions of law were filed by complainant and by the Commission investigative attorney.

On May 17, 1979, the Commission held a hearing at which all active parties to the investigation made oral arguments concerning the ALJ's recommended determination and gave oral presentations on the relief, bonding, and public-interest aspects of the case. All active parties also filed prehearing briefs concerning the ALJ's recommended determination and written submissions concerning relief, bonding, and the public interest.

The Issue of Violation 1/

Under section 337, the Commission must determine whether there is a violation of that statute and, if there is, what statutory remedy, if any, is appropriate. Having considered the ALJ's recommended determination and the record compiled in this proceeding, we have determined that there is a violation of section 337 in the importation into and sale in the United States of certain multicellular plastic film, the tendency of which is to injure substantially an industry, efficiently and economically operated, in the United States. Specifically we find that (1) claims 1 and 2 of the '984 patent have not been shown to be invalid, 2/ (2) the processes used by respondents Conform and Unipak to manufacture multicellular plastic film abroad would, if practiced in the United States, infringe claims 1 and 2 of the '984 patent, (3) the process used by respondent Tong Seae to manufacture multicellular plastic film abroad would not, if practiced in the United States, infringe claims 1 and 2 of the '984 patent, and (4) the unauthorized importation into and subsequent sale in the United States by respondents Polybubble and Peter Darlington of multicellular plastic film manufactured abroad by Conform and Unipak has the tendency to injure substantially an efficiently and economically operated domestic industry. We hereby adopt the findings of fact and conclusions of law of the ALJ insofar as they are supportive of and not inconsistent with the views that follow.

1/ The following abbreviations are used in this opinion:
CL -- ALJ's conclusion of law;
FF -- ALJ's finding of fact;
HTr. -- transcript of evidentiary hearing before ALJ;
RD -- recommended determination.

2/ We therefore differ with the ALJ on the question of the validity of claims 1 and 2 of the '984 patent.

1. The patented invention

Complainant's '984 patent was issued on December 17, 1968, upon a continuation of an application originally filed November 19, 1963. Claims 1 and 2 of the '984 patent relate to an improved process for manufacturing multicellular plastic film. Multicellular plastic film consists of two sheets of thermoplastic material sealed together in such a way that numerous air-tight cells are formed. 1/ The cushioning and insulating properties of these cells make such film useful as packaging material and in the manufacture of covers for swimming pools, respectively.

The process disclosed by the '984 patent utilizes two sheets of thermoplastic material. One sheet (called the embossed film) is heated and fed onto an embossing cylinder to form numerous discrete embossments. The embossments are formed by drawing the heat-softened plastic of the embossed film into cavities on the embossing cylinder by means of a vacuum. A second heated sheet of thermoplastic material (usually called the laminating film) is then applied to the embossed film while it is on the embossing cylinder so as to heat-seal the embossments and form air-tight cells. The point at which the embossed film first contacts the laminating film is called the "kiss point."

The essence of the invention disclosed in claims 1 and 2 of the '984 patent is found in the relative temperatures of the embossed film and the laminating film at the kiss point. Previously, it had been thought by those skilled in the art that the mating surfaces of both films had to be at or

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1/ The thermoplastic material most commonly used in the manufacture of multicellular plastic film is polyethylene.

above the fusion temperature 1/ at the kiss point in order for effective sealing of the embossments to occur. The problem with that method of making multicellular plastic film is that when the embossed film is heated to its fusion temperature, it weakens and softens to such an extent that the application of a vacuum to form embossments often ruptures the individual cells, and a defective product results.

The solution to the cell rupture problem disclosed by the '984 patent is to raise the temperature of at least one surface of the laminating film (which is not subjected to the mechanical stress of embossment) to above the fusion temperature, and to lower the temperature of the embossed film to below the fusion temperature. Now when the two films are brought together at the kiss point, the relatively hot laminating film will transfer heat to the salient portions of the cooler embossed film so that the temperatures of the mating surfaces of both films equalize at or above the fusion temperature and result in an effective heat seal.

2. Claims 1 and 2 of the '984 patent have not been proven invalid

Patents are presumed valid, and the burden of establishing invalidity rests upon those asserting it. 35 U.S.C. 282. Based on the conclusion that the process of claims 1 and 2 of the '984 patent was "inherently" disclosed by British Patent No. 908,579 (hereinafter "the Bingham patent"), the ALJ found

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1/ The fusion temperature is that temperature at which the mating surfaces of the two films melt together so that there is no longer a distinguishable interface between them. HTr. 410.

claims 1 and 2 invalid as anticipated pursuant to 35 U.S.C. 102. 1/ We disagree. In our view, respondents have failed to sustain their burden of proving claims 1 and 2 of the '984 patent invalid.

Claim 1 of the Bingham patent calls for heating two "webs" of thermoplastic material to the "softening temperature", vacuum-embossing one web, then "applying one face of the second web under pressure, while in its heat-softened condition, against the other face of the said first web . . . so that the two heated webs are squeezed together against the embossing drum . . . ." 2/ Claim 1 of the Bingham patent does not indicate that the temperature of one side of the first (embossed) film should be lowered after embossment, as required by claim 1 of the '984 patent. 3/ Nor does it suggest providing extra heat in the second (laminating) film so that at the kiss point heat will be transferred from the relatively hot laminating film to the relatively cool embossed film, as is also required by claim 1 of the '984 patent.

It is clear, therefore, that complainant's patented process is not expressly disclosed in the Bingham patent. However, as noted, the ALJ found the '984 process to be inherently disclosed by Bingham. The case law clearly

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1/ 35 U.S.C. 102 provides in pertinent part that "a person shall be entitled to a patent unless . . . (b) the invention was patented or described in a printed publication in this or a foreign country . . . more than one year prior to the date of application for patent in the United States . . . ." The Bingham patent (a patent and a "printed publication") issued on October 17, 1962, more than 1 year prior to the filing date (Nov. 19, 1963) of the application that ultimately matured into the '984 patent.

2/ Claim 1 of the Bingham patent is reproduced in app. A to this opinion.

3/ Claims 1 and 2 of complainant's '984 patent are reproduced in app. B to this opinion.

holds that the question of whether or not something is inherently disclosed by a prior art reference must be decided on the basis of expert testimony. Interchemical Corp. v. Watson, 251 F.2d 390, 391 (D.C. Cir. 1958); Chemithon Corp. v. Procter and Gamble Co., 287 F.Supp. 291, 304 (D. Md. 1968) aff'd 427 F.2d 893 (4th Cir. 1970), cert. den. 400 U.S. 925 (1970). There is no expert testimony of record in this case to the effect that complainant's patented process is inherently disclosed in the Bingham patent. In fact, what little testimony there is regarding the disclosure of Bingham (HTr. 788) suggests that such disclosure merely duplicates the disclosure of U.S. Letters Patent 3,142,599, which (unlike the Bingham patent) was considered by the Patent Office examiner during prosecution of the application that matured into the '984 patent.

Because the process of claims 1 and 2 of the '984 patent is not expressly disclosed in the Bingham patent, and inasmuch as there is no expert testimony of record to support the conclusion that complainant's process is inherently disclosed therein, we are of the view that respondents have not sustained their burden of proving claims 1 and 2 of the '984 patent invalid.

3. The Tong Seae process does not infringe

(i) No literal infringement.--We find that the Tong Seae process does not literally infringe claims 1 and 2 of the '984 patent because those claims require heating films of thermoplastic material whereas the Tong Seae process involves cooling such films. Claim 1 of the '984 patent calls for "embossing a first heated sheet of plastic material having thermoplastic properties, said

sheet having been heated on one side to about its fusion temperature . . . ." (Emphasis added.) Claim 1 also calls for "heating a second sheet of plastic having thermoplastic properties to about the fusion temperature . . . ." (Emphasis added.) The ALJ found that in the Tong Seae process "no heat is added either to the embossing sheet or to the laminating sheet at any time." FF 37. Complainant concedes the correctness of this finding, stating that it "takes no issue with the accuracy of Finding of Fact 37." 1/

(ii) No infringement under the doctrine of equivalents.--In the absence of a finding of literal infringement, we must proceed to consider whether the Tong Seae process infringes under the doctrine of equivalents. That doctrine provides that an accused process infringes if it employs substantially the same means to achieve substantially the same results in substantially the same way as as patented process. Graver Tank & Mfg. Co., Inc. v. Linde Air Products, 339 U.S. 605, 608 (1950). Thus, the question in this case with respect to infringement is whether the Tong Seae process employs substantially the same means to achieve substantially the same results in substantially the same way as complainant's patented process. We conclude that it does not.

Although both the patented process and the Tong Seae process arguably use substantially the same means (sheets of thermoplastic material, vacuum-embossing, and heat) to achieve substantially the same result (the manufacture of multicellular plastic film without rupture of the individual cells), the two processes do not, in our view, do so in substantially the same way. Complainant's patented process depends for its success upon the careful

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1/ Complainant's Exceptions to the Recommended Determination, p. 51.

control of film temperature prior to embossment and lamination. No such careful temperature control has been shown necessary with the Tong Seae process.

It is well settled that patent claims are to be construed in light of the specification preceding those claims. United States v. Adams, 383 U.S. 39, 48-49 (1966). Moreover, the scope of patent claims may be limited by the history of the patent's prosecution in the U.S. Patent and Trademark Office. Coleco Industries, Inc. v. U.S. International Trade Commission, 573 F.2d 1247, 1257 (CCPA 1978). The specification of the '984 patent provides, at column 2, lines 52-70, as follows:

> The improved method for heating the two films in accordance with the invention involves heating the film to be embossed to a temperature just below the fusion temperature but high enough to insure permanent embossment of the film. The outer surface of the film when on the embossing role (sic) is at about the fusing temperature. The laminating film which is applied to the embossed film while on the embossing roll has at least the surface which is to contact the embossed film at a temperature above the fusion temperature so that when the laminating film is applied to the embossed film the contacting surfaces will equalize at a temperature at or above the fusion temperature. Under these conditions, the film being embossed will not be so easily damaged by the embossing process since it is at a lower temperature than the laminating film and the danger of perforating embossments by vacuum is avoided. Furthermore, since the laminating film is not embossed it can be safely heated to a sufficiently high temperature to insure good fusion. (Emphasis added.)

This passage demonstrates clearly the degree of temperature control required by the patented process. The embossed film must be heated to a temperature "just below" its fusion temperature but "high enough" to insure that the film is sufficiently heat-softened to be effectively embossed. The laminating film must be heated to a temperature "sufficiently high" to insure good fusion but

low enough to minimize "the chance of film damage or distortion" (specification, column 2, lines 34-35).

Moreover, in attempting to overcome a rejection of claim 1 by the patent examiner, complainant's patent attorney stated during prosecution of the '984 patent application as follows:

> The manufacture of a cushioning material using thin plastic films and sheets has presented many problems in that it has required careful control of temperatures and speeds to produce a satisfactory product. The Examiner is undoubtedly aware of the fact that when heating films of the order of 1 to 5 mils in thickness, that excess heat will cause almost instaneous (sic) melting of the film. As a result, the films are heated in such a manner that a temperature gradient is produced in the film so that one side of the film is at a sealing temperature while the other side of the film is substantially below the sealing temperature. The surface of the film to be sealed to the second film is preferably maintained at a fusion temperature wherein at least a portion of the molecular layers on the surface is melted, and with very thin films the controls required can be fully appreciated. 1/ (Emphasis added.)

Complainant's patent attorney also represented to the examiner as follows:

> Applicant's attorney is well aware that the improvement in the present application over the prior patent may not appear significant to one who is not thoroughly familiar with the problems involved in the manufacture of this cushioning material. It is believed, however, that the foregoing discussion pointed out the critical control necessary in heating the films at high speeds and insuring a permanent seal of each individual embossment has required considerable time, effort, and money in order to make the process more dependable and economical. Thus it is believed that the advance provided by the instant application constitutes a significant development which is clearly patentable over the prior patent. 2/ (Emphasis added.)

1/ Patent Application No. 324,718, first amendment, filed Feb. 14, 1967, at p. 8 (complainant's exhibit No. 20).

2/ Id. , p. 10.

Finally, in describing the problem the '984 process was intended to surmount, coinventor Fielding gave the following testimony at the hearing before the ALJ :

> It is our experience that if you run a cold (polyethylene) film over our embossing cylinder and put the vacuum on, nothing would happen. If you heat it not enough, you will get poor embossing, and if you heat it properly, you will get a good embossing . . . . So that is the lower temperature. That temperature you have to obtain, and the next temperature is the temperature at which the film will seal to another film, assuming they are both at the same temperature, and seal in what we would call a hermetic seal, a seal that is truly bonded, that you cannot separate them without destroying the films. That is somewhat higher. It depends upon the films, of course. The next temperature you are concerned with is the temperature at which the film just self-destructs. You get it so hot that it will either break, melt, or tear apart, and unfortunately, with the films with which we were working in those days, the three temperatures were very, very close, on the order of maybe 10 or 15 degrees or maybe 20 degrees, but on that order, between the embossing temperature and the sealing temperature and again the temperature at which the film would or could be destroyed easily, and what was happening was, in our attempts to keep both of these films at a temperature so that their mating (surfaces) were both at the fusion temperature when they got there together, we ran them close to the temperature at which they would be destroyed. 1/ (Emphasis added.)

As the quoted passages make clear, close control of film temperature is a critical part of the process disclosed by claims 1 and 2 of the '984 patent. If the embossed film is put on the embossing cylinder at a temperature that is too cool, it will not be sufficiently heat-softened to emboss properly. If it

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1/ HTr. 112-113. The three temperatures being discussed here are (1) the embossing temperature, (2) the fusion temperature (referred to by witness Fielding as the sealing temperature), and (3) the melting temperature (the temperature at which the film will "self-destruct"). Present-day polyethylene films have different temperatures at which the various transformations occur, but the range is still narrow. Complainant's expert witness, Dr. Morrow, testified and presented test results establishing that

. See HTr. 465 (melting temperature) and complainant's exhibit No. 18, p. 2 (embossing temperature and fusion temperature).

is placed on the embossing cylinder at a temperature that is too hot, application of a vacuum to form embossments will pull holes in the individual cells. If the laminating film is too cool, it will not transfer enough heat to the embossed film to, in the words of claim 1, "equalize the temperatures of the meeting surface of said sheets at a temperature at least equal to the fusion temperature." And if the laminating film is heated too much, it will simply "self-destruct."

The Tong Seae process, in contrast, has not been shown by complainant to require the same close control of film temperature. In the Tong Seae process, "sheets" of molten polyethylene are extruded directly onto the embossing cylinder. The sheet to be embossed is extruded first. After undergoing vacuum embossment, this sheet (the embossed film) passes beneath a die head which extrudes a second sheet of molten polyethylene (the laminating film) directly onto the first sheet. The temperatures of both films are hundreds of degrees above the melting point when they first contact the embossing cylinder. 1/ The embossed film cools down rapidly after it is laid onto the embossing cylinder, and by the time it reaches the kiss point, it has cooled to degrees F. 2/ Whether the embossed film in the Tong Seae process is still molten at the moment of embossment, as asserted by respondents and found by the ALJ (RD 8; FF 33 and 34), is unclear from the record in this case. All that is known from the temperature measurements made by

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1/ The melting point of the polyethylene used in the Tong Seae process is between 225 and 230 degrees F. FF 24. The temperature of the polyethylene extruded from the die heads in the Tong Seae process is in excess of 545 degrees F. FF 27.

2/ Complainant's exhibit No. 14, p. 9.

complainant's expert witness Buckley is that the embossed film is extruded onto the embossing cylinder at a temperature of approximately 500 degrees F., well above both the fusion and melting temperatures. After traveling a distance of about 2 inches on the embossing cylinder to a point one-half inch beyond the point of embossment, the temperature of the embossed film has fallen to the range 166-205 degrees F., below both the fusion and melting temperatures. 1/

It is complainant who has the burden of proving infringement. In our view, complainant has not succeeded in establishing that the Tong Seae process utilizes the temperature control technique of the '984 patent by proving that one side of the Tong Seae embossed film is at "about its fusion temperature" at the moment of embossment. In any event, it is clear that the Tong Seae process does not utilize close temperature control with respect to the laminating film. As noted, in the Tong Seae process the laminating film is extruded directly onto the embossing cylinder in molten form. It definitely does not arrive at the kiss point at "about the fusion temperature with at least one surface above the fusion temperature" as called for in claim 1. In the '984 process, the temperature of the laminating film must be kept low enough so that it will not, in the words of coinventor Fielding, "break, melt, or tear apart." HTr 113. In contrast, the laminating film in the Tong Seae process is deliberately applied to the embossing cylinder at the kiss point in the molten state.

1/ Id. The fusion temperature of the polyethylene films used by both Tong Seae and Sealed Air is 218 degrees F. plus or minus 4 degrees. The embossing ("vacuum thermoforming") temperature of the films used by Tong Seae and Sealed Air is 222 degrees F. plus or minus 4 degrees. Complainant's exhibit No. 18, p. 2.

Because complainant's patented process depends for its success upon the careful control of temperature, whereas the Tong Seae process does not, we conclude that the Tong Seae process does not operate "in substantially the same way" as complainant's process, and is therefore noninfringing under the doctrine of equivalents.

4. The Conform and Unipak processes infringe

The ALJ recommended that the processes employed by Conform and Unipak in manufacturing multicellular plastic film be found to infringe claims 1 and 2 of the '984 patent. We concur. Neither Conform nor Unipak participated in discovery. Conform was subject to evidentiary sanctions. With respect to Conform, the ALJ ruled that an inference was to be drawn that the testimony, documents, or other evidence sought from that firm by complainant would be adverse to Conform. With respect to Unipak, the ALJ ordered that without further notice to that firm, the facts could be found to be as alleged in the complaint and the notice of investigation. In view of these firms' refusal to participate in discovery and the ALJ's finding that the Commission has jurisdiction over them, we agree with the ALJ that, on the record of this investigation, the processes used by Conform and Unipak in manufacturing multicellular plastic film infringe the '984 patent.

5. Domestic industry

We find, as did the ALJ, that there exists in this investigation an "industry . . . in the United States" within the meaning of section 337. That industry consists of the domestic facilities of complainant and its licensee,

Astro Packaging Inc., devoted to the manufacture of multicellular plastic film using the process of the '984 patent. FF 60, 61. Assertions by respondents Polybubble and Tong Seae and by the Commission investigative attorney that complainant is not practicing the process of the '984 patent are simply not substantiated by the record in this proceeding.

6. Efficient and economic operation

The ALJ found the domestic industry to be efficiently and economically operated. CL 15. Neither respondents nor the Commission investigative attorney filed exceptions to the findings of fact (FF 64-68, 71, 73, 74, and 76) forming the basis for that conclusion of law. There is no reason to question the efficient and economic operation of the domestic industry in this investigation.

7. Tendency to injure substantially

We agree with the ALJ's conclusion that the unauthorized importation and sale by respondents Peter Darlington and Polybubble of multicellular plastic film manufactured abroad by Conform and Unipak has the tendency to injure substantially the domestic industry.

In affirming the ALJ's conclusion, we have considered the following factors. First, an official of Sealed Air testified that complainant's multicellular plastic film profits were flat in 1978 even though the firm as a whole has been quite profitable. HTr. 361. Second, respondent Peter Darlington had pool cover sales of in the United States during the period March through November 1978. FF 79. These covers were fabricated from

multicellular plastic film imported from Conform and Unipak. RD 14. These sales amount to about percent of the combined 1978 sales of complainant and its licensee, Astro Packaging Inc. FF 62, 63, 79. Darlington estimates that his sales of pool covers will amount to between and in 1979. FF 88. Some of Darlington's sales have been diverted from complainant's dealers, and Darlington expects to divert additional sales from customers of complainant and its licensee in the future. FF 89. Third, Polybubble had pool cover sales of in the United States in 1978. HTr 602. These sales amount to more than of the combined sales of complainant and its licensee in 1978. Some of these covers were fabricated from multicellular plastic film imported from Conform and Unipak. FF 78. And finally, Conform and Unipak possess substantial foreign capacity for the production of multicellular plastic film. FF 81, 83. This foreign capacity is relevant to our finding of "tendency" in this investigation inasmuch as it bears on the capability of Conform and Unipak to inflict future substantial injury on the domestic industry.

Remedy, Public Interest, and Bonding

1. Remedy

We find that an exclusion order is the appropriate remedy for the violation of section 337 we have found to exist. Accordingly, we have ordered exclusion from entry into the United States of multicellular plastic film manufactured abroad in accordance with the process disclosed by claims 1 and 2 of the '984 patent for the remaining term of that patent, except as importation is licensed by the patent owner. This order does not apply to

Tong Seae, which does not utilize the patented process. A cease and desist order would not, in our judgment, be an appropriate remedy in this case because such order would not include within its scope foreign manufacturers and domestic importers not named in the order.

Because this case involves a process patent rather than the product patent typically at issue in patent-based section 337 investigations, issuance of an exclusion order may present difficulties of administration for the U.S. Customs Service. These difficulties arise from the fact that there is evidently no way to distinguish, either visually or by laboratory testing, multicellular plastic film manufactured by the patented process from film manufactured by noninfringing processes. The Commission's order in this investigation addresses this problem by providing in paragraph 3 that persons (including Conform and Unipak should those firms change the processes they currently employ in manufacturing multicellular plastic film) desiring to import multicellular plastic film may petition the Commission to institute further proceedings for the purpose of determining whether the film sought to be imported should be allowed entry into the United States. With respect to film produced by foreign manufacturers who were not respondents in the Commission's investigation, paragraph 3 is intended to insure that only such film found upon further investigation not to have been manufactured by a process infringing claims 1 and 2 of the '984 will be allowed entry. The effect of paragraph 3 is to place the burden of establishing noninfringement upon would-be importers rather than to require complainant, the aggrieved party in this matter, to prove infringement.

2. Public interest factors

We are aware of no public-interest factors that would preclude issuance of an exclusion order in this investigation.

3. Bonding

We have determined that a bond in the amount of 3.5 cents per square foot of imported multicellular plastic film should be required during the 60-day period in which the President may for policy reasons disapprove the Commission's determination in this investigation. A bond of this size is required to offset any unfair competitive advantage accruing to importers of multicellular plastic film manufactured by infringing processes.

APPENDIX A

Claim 1 of the Bingham Patent

1. A method of producing a laminated, multi-cellular material, comprising the steps of heating a first web of thermoplastic material and a second web of thermoplastic material or other material coated with thermoplastic material to a softening temperature, applying one face of the first web, while in its heat-softened condition, against the outer surface of a rotating vacuum embossing drum at a first position and causing it to advance with the surface of the drum through an extended arc from said first position, applying one face of the second web under pressure, while in its heat-softened condition, against the other face of the said first web at a second position displaced part way along the said extended arc from said first position, so that the two heated webs are squeezed together against the embossing drum across substantially their whole width, and thereafter removing both webs from the embossing drum at the end of the said extended arc, the arrangement being such that suction acting from within the embossing drum causes cavities to be formed in the other face of the said first web during the travel of that web between the first and second positions and that the said second web is heat-sealed to the surface parts of said first web surrounding the mouths of the cavities.

APPENDIX B

Claims 1 and 2 of Complainant's '984 Patent

1. The method of making cellular material comprising the steps of embossing a first heated sheet of plastic material having thermoplastic properties, said sheet having been heated on one side to about its fusion temperature, said (embossments) extending from the other side of said sheet, reducing the temperature on the other side of said sheet below the embossing temperature immediately after embossment thereof, heating a second sheet of plastic having thermoplastic properties to about the fusion temperature with at least one surface above the fusion temperature, feeding said one side of said second sheet into contact with said one side of said embossed sheet while above the fusion temperature to seal the embossments thereof, said one surface of said second sheet transferring heat to said one side of said first sheet to equalize the temperatures of the meeting surfaces of said sheets at a temperature at least equal to the fusion temperature.

2. The method of making a cellular material according to claim 1 including the steps of cooling the other side of said first sheet immediately upon embossment thereof and then cooling said sheets to permanently seal them one to the other.

Library Cataloging Data

U.S. International Trade Commission.
In the matter of: certain multicellular plastic film, investigation no.337-TA-54. Washington, 1979.

26 p. 28 cm. (USITC Publication 987)

1. Plastic films. 2. Laminated plastics. I. Title. II. Title: Certain multicellular plastic film.

UNITED STATES
INTERNATIONAL TRADE COMMISSION
WASHINGTON, D.C. 20436

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UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.

In the Matter of CERTAIN MULTICELLULAR PLASTIC FILM	Investigation No. 337-TA-54

NOTICE OF INVESTIGATION

Notice is hereby given that a Complaint was filed with the United States International Trade Commission on May 12, 1978, under section 337 of the Tariff Act of 1930, as amended (19 U.S.C. 1337) and under 19 U.S.C. 1337a (1940), on behalf of Sealed Air Corporation, 19-01 State Highway 208, Fair Lawn, New Jersey 07410, alleging that unfair methods of competition and unfair acts exist in the importation into the United States, or in the subsequent sale, of multicellular plastic film swimming pool covers, by reason of the alleged coverage of the multicellular plastic film by method claims 1 and 2 of U.S. Letters Patent 3,416,984 allegedly practiced in a foreign country, and unfair low pricing of swimming pool covers manufactured from the imported multicellular plastic film, and unfair competition by use of advertising. The complaint alleges such unfair methods of competition and unfair acts have the effect or tendency to destroy or substantially injure an industry, efficiently and economically operated, in the United States or to restrain or monopolize trade and commerce in the United States. Complainant requests permanent exclusion from entry into the United States of the articles in question. Complainant also requests exclusion from entry into the United States, except under bond, of the articles in question during the investigation in this

matter (a temporary exclusion order), and an expedited hearing on such temporary exclusion order.

Having considered the complaint, the United States International Trade Commission on June 22 , 1978, ORDERED:

1. That, pursuant to subsection (b) of section 337 of the Tariff Act of 1930, as amended (19 U.S.C. 1337), an investigation be instituted to determine, under subsection (c) whether, on the basis of the allegations set forth in the complaint and the evidence adduced, there is a violation or reason to believe that there is a violation of subsection (a) of this section in the unauthorized importation of certain multicellular plastic film into the United States, or in its subsequent sale, either in roll or in swimming pool cover form, by reason of the alleged coverage of imported multicellular plastic film during manufacturing in a foreign country by claims 1 and 2 of U.S. Letters Patent 3,416,984, the effect or tendency of which is to destroy or substantially injure an industry, efficiently and economically operated, in the United States. The alleged unfair low pricing of swimming pool covers manufactured from the imported multicellular plastic film, and the alleged unfair methods of competition by use of advertising have not been included in the scope of the investigation because of failure to conform these allegations in the complaint to the requirements of Commission rules (19 C.F.R. 210.20).

2. That, for the purpose of this investigation so instituted, the following are hereby named as parties.

a. The complainant is

Sealed Air Corporation
Park 80 Plaza East
Saddle Brook, New Jersey 07662

b. The respondents are the following companies alleged to be involved in the unauthorized importation of such articles into the United States, or in their sale, and are parties upon which the complaint and this notice are to be served:

i. Polybubble, Inc.
1181 Chess Drive #D
Foster City, California 94404

ii. Conform Plastics
113 Muys Road
Box 12357
Penrose, Aukland, New Zealand

iii. Unipak (H.K.) Ltd.
11f 59-61 Wong Chuk Hong Road
Aberdeen, Hong Kong

iv. Tong Seae Co., Ltd.
P.O. Box 53607
Taipei, Taiwan, R.O.C.

v. Peter Darlington
dba Solar Pool Covers
15581 Product Lane (#15)
Huntington Beach, California 92649

c. Steven Morrison, U.S. International Trade Commission, 701 E Street, N.W., Washington, D.C. 20436, is hereby named Commission investigative attorney, a party to this investigation.

3. That, for the purpose of the investigation so instituted, Judge Donald K. Duvall, U.S. International Trade Commission, 701 E Street, N.W., Washington, D.C. 20436, is hereby appointed as presiding officer.

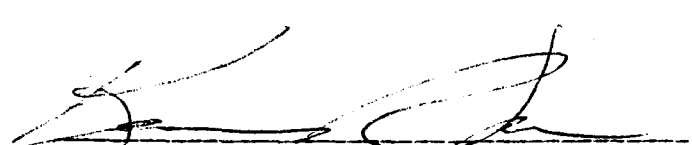
4. That for the purpose of the investigation so instituted, complainant's request for an expedited hearing on temporary exclusion is denied at this time without prejudice to the right to renew the request before the presiding officer.

Responses must be submitted by the named respondents in accordance with section 210.21 of the Commission's Rules of Practice and Procedure, as amended (19 C.F.R. 210.21). Pursuant to sections 201.16(d) and 210.21(a) of the Rules, such responses will be considered by the Commission if received not later than 20 days after the date of service of the complaint. Extensions of time for submitting a response will not be granted unless good and sufficient cause therefor is shown.

Failure of a respondent to file a timely response to each allegation in the complaint and in this notice may be deemed to constitute a waiver of the right to appear and contest the allegations of the complaint and of this notice, and will authorize the presiding officer and the Commission, without further notice to the respondent, to find the facts to be as alleged in the complaint and this notice and to enter both a recommended determination and a final determination, respectively, containing such findings.

The complaint, with the exception of business confidential information, is available for inspection by interested persons at the Office of the Secretary, U.S. International Trade Commission, 701 E Street, N.W., Washington, D.C. 20436, and in the New York City office of the Commission, 6 World Trade Center.

By Order of the Commission:



Kenneth R. Mason
Secretary

Issued: June 26, 1978

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D. C.

In the Matter of CERTAIN MULTICELLULAR PLASTIC FILM	Investigation No. 337-TA-54

NOTICE OF COMMISSION HEARING ON THE PRESIDING OFFICER'S RECOMMENDATION AND ON RELIEF, BONDING, AND THE PUBLIC INTEREST

Recommendation of "No Violation" Issued

In connection with the Commission's investigation under section 337 of the Tariff Act of 1930 of alleged unfair methods of competition and unfair acts in the importation and sale of certain multicellular plastic film in the United States, the presiding officer recommended on March 23, 1979, that the Commission determine that there is no violation of section 337. Interested persons may obtain copies of the presiding officer's recommendation by contacting the office of the Secretary to the Commission, 701 E Street NW., Washington, D.C. 20436, telephone (202) 523-0161.

Commission Hearing Scheduled

The Commission will hold a hearing beginning at 10:00 a.m., e.d.t., on May 17, 1979, in the Commission's Hearing Room (Room 331), 701 E Street NW., Washington, D.C. 20436, for two purposes. First, the Commission will hear oral argument on the presiding officer's recommendation that there is no violation of section 337 of the Tariff Act of 1930. Second, the Commission will receive oral presentations concerning appropriate relief, bonding, and

the public interest in the event that the Commission determines that there is a violation of section 337. These matters are being heard on the same day in order to facilitate the completion of this investigation within statutory time limits and to minimize the burden of this hearing upon the parties to the investigation. The procedure for each portion of the hearing follows.

Oral Argument on Presiding Officer's Recommendation

A party to the Commission's investigation or an interested agency wishing to present to the Commission an oral argument concerning the presiding officer's recommendation will be limited to no more than 30 minutes. A party or interested agency may reserve 10 minutes of its time for rebuttal. The oral arguments will be held in this order: complainant, respondents, interested agencies, and the Commission investigative attorney. Any rebuttals will be held in this order: respondents, complainants, interested agencies, and the Commission investigative attorney.

Oral Presentation on Relief, Bonding, and the Public Interest

Following the oral arguments on the presiding officer's recommendation, a party to the investigation, an interested agency, a public-interest group, or any interested member of the public may make an oral presentation on relief, bonding, and the public interest.

1. Relief. If the Commission finds a violation of section 337, it may issue (1) an order which could result in the exclusion from entry of certain multicellular plastic film into the United States or (2) an order which could result in requiring respondents to cease and desist from alleged unfair methods of competition or unfair acts in the importation and sale of multicellular plastic film.

2. Bonding. If the Commission finds a violation of section 337 and orders some form of relief, that relief would not become final for a 60-day period, during which the President would consider the Commission's report. During this period, the multicellular plastic film would be entitled to enter the United States under a bond determined by the Commission and prescribed by the Secretary of the Treasury.

3. The public interest. If the Commission finds a violation of section 337, prior to ordering some form of relief, the Commission must consider the effect of that relief upon (1) the public health and welfare, (2) competitive conditions in the U.S. economy, (3) the production of like or directly competitive articles in the United States, and (4) U.S. consumers.

Those making an oral presentation on the issues of relief, bonding and the public interest will be limited to no more than 20 minutes. Each participant will be permitted an additional 5 minutes for summation after all presentations have been made. Participants with similar interests may be required to share time. The order of oral presentations will be as follows: complainant, respondents, interested agencies, public-interest groups, other interested members of the public, and the Commission investigative attorney. Summations will follow the same order.

How to Participate in the Hearing

Any person desiring to appear at the Commission's hearing must file a written request to appear with the Secretary to the U.S. International Trade Commission, 701 E Street NW., Washington, D.C. 20436, no later than the close of business (5:15 p.m., e.d.t.) on May 10, 1979. The written request must indicate whether such person wishes to present an oral argument concerning the presiding officer's recommendation or an oral presentation concerning relief,

bonding, and the public interest, or both. While only parties to the Commission's investigation and interested agencies may present an oral argument concerning the presiding officer's recommendation, public-interest groups and other interested members of the public are encouraged to make an oral presentation concerning the public interest.

Written Submissions to the Commission

The Commission requests that written submissions of two types be filed prior to the hearing in order to focus the issues and facilitate the orderly conduct of the hearing.

1. Briefs on the presiding officer's recommendation. Parties to the Commission's investigation and interested agencies are encouraged to file briefs concerning exceptions to the presiding officer's recommendation. Complainant's brief must be filed no later than the close of business on April 16, 1979; respondents' brief and the brief of the Commission investigative attorney must be filed no later than the close of business on April 30, 1979; complainant's reply brief, if any, must be filed not later than the close of business on May 7, 1979. Briefs must be served on all parties of record to the Commission's investigation on or before the date they are filed with the Secretary. Statements made in briefs should be supported by references to the record.

2. Written comments and information concerning relief, bonding, and the public interest. Parties to the Commission's investigation, interested agencies, public-interest groups, and any other interested members of the public are encouraged to file written comments and information concerning

relief, bonding, and the public interest. These written submissions will be very useful to the Commission if it determines that there is a violation of section 337.

Written comments and information concerning relief, bonding, and the public interest shall be submitted in this order. First, complainant shall file a detailed proposed Commission action, including a proposed determination of bonding, a proposed remedy, and a discussion of the effect of its proposals on the public health and welfare, competitive conditions in the U.S. economy, the production of like or directly competitive articles in the United States, and U.S. consumers with the Secretary to the Commission by no later than the close of business on April 30, 1979. Second, other parties, interested agencies, public-interest groups, and other interested members of the public shall file written comments and information concerning the action which complainant has proposed, any available alternatives, and the advisability of any Commission action in light of the public-interest considerations listed above no later than the close of business on May 7, 1979.

Additional Information

The original and 19 true copies of all written submissions must be filed with the Secretary to the Commission. Any person desiring to submit a document (or a portion thereof) to the Commission in confidence must request in camera treatment. Such request should be directed to the Chairman of the Commission and must include a full statement of the reasons why the Commission should grant such treatment. The Commission will either accept such submission in confidence or return it. All nonconfidential written submissions will be open to public inspection at the Office of the Secretary.

Notice of the Commission's investigation was published in the Federal Register of June 29, 1978 (43 F.R. 28258).

By order of the Commission

Kenneth R. Mason
Secretary

Issued: April 6, 1979