UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

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OMEGA LINER COMPANY, INC.,

Petitioner

v.

BUERGOFOL GmbH

Patent Owner.

_____

CASE NO.: IPR2023-01402
U.S. PATENT NO. 8,794,269

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PATENT OWNER'S PRELIMINARY RESPONSE

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EXHIBIT LIST

Exhibit No.	Description
EX2001	Material Data sheet for Dow Surlyn® 1825 Zinc Ionomer, obtained from MatWeb at https://www.matweb.com/search/DataSheet.aspx?MatGUID=fbaaab9d8e024e37a6113a2059d2dd0b
EX2002	Material Data sheet for LDPE, Masterbatch Grade, obtained from MatWeb at https://www.matweb.com/search/DataSheet.aspx?MatGUID=70c88b51f6ad41ea88ca492de38af5fa
EX2003	Material Data Sheet for LMDPE, Film, obtained from MatWeb at https://www.matweb.com/search/DataSheet.aspx?MatGUID=408398293e4240a2a2ab30633163dfdc
EX2004	Material Data Sheet for HDPE, Film, obtained from MatWeb at https://www.matweb.com/search/DataSheet.aspx?MatGUID=af3d832d12b64e0ea1c0657208ae5b87
EX2005	Material Data Sheet for Polypropylene, Film Grade, obtained from MatWeb at https://www.matweb.com/search/DataSheet.aspx?MatGUID=642060cb11204fcb95164a82edc4b5fa
EX2006	Material Data Sheet for EVA, Film Grade, obtained from MatWeb at https://www.matweb.com/search/DataSheet.aspx?MatGUID=f34f846b98f1466780dfb3c0e5c0ca82
EX2007	Material Data Sheet for Ethylene Acrylic Acid, obtained from MatWeb at https://www.matweb.com/search/DataSheet.aspx?MatGUID=84ec0f699edf443490d9ad0328f36441
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EX2009	Material Data Sheet for Polyurethane, obtained from MatWeb at https://www.matweb.com/search/DataSheet.aspx?MatGUID=9f5318a1f93b403bbd5748abec70fac1
EX2010	Material Data Sheet for Polycarbonate, obtained from MatWeb at https://www.matweb.com/search/DataSheet.aspx?MatGUID=501acbb63cbc4f748faa7490884cdbca
EX2011	Material Data Sheet for PVC, Extruded, obtained from MatWeb at https://www.matweb.com/search/DataSheet.aspx?MatGUID=bb6e739c553d4a34b199f0185e92f6f7

Exhibit No.	Description
EX2012	Printout of MatWeb search page for Propylene Homopolymer.
EX2013	Ariff, *et al*., "Rheological Behaviour of Polypropylene Through Extrusion and Capillary Rheometry," Chpt. 3 of POLYPROPYLENE, edited by Fatih Doğan, InTech, Croatia, 2012, pp. 29-48
EX2014	File History of European Patent No. EP11730556.5, the European equivalent of the '269 patent
EX2015	Closson, U.S. Patent No. 5,948,711
EX2016	Ellis, *et al*., POLYMERS A PROPERTY DATABASE, 2ND ED., CRC Press (2009), pp. 824-825

I. RELATED MATTERS

U.S. Patent No. 8,794,269 ("the '269 patent") (EX1001) has been asserted by Patent Owner in *Buergofol GmbH v. Omega Liner Company, Inc.,* Case No. 4:22-cv-04112-KES (D. S.D.), filed on August 15, 2022 ("District Court Litigation"). Patent Owner also asserted U.S. Patent No. 9,547,882 (the "'882 patent') in the same District Court Litigation matter, and Petitioner has filed a Petition for Inter Partes Review of the '882 patent, which has been accorded number IPR2023-01372.

II. INTRODUCTION

Patent Owner Buergofol GmbH ("Buergofol" or "Patent Owner" or "PO") hereby submits this preliminary response to the petition for *inter partes* review ("Petition") of claims 1-10 ("Challenged Claims") of the '269 patent, filed by Omega Liner Company, Inc. ("Omega" or "Petitioner"). Buergofol submits that Petitioner fails to demonstrate a reasonable likelihood of success on the grounds challenging the patentability of the Challenged Claims because Petitioner has not shown that the prior art relied upon discloses or renders obvious all of the elements recited by the Challenged Claims. Buergofol also requests that the Board exercise its discretion and deny institution. The Petition identifies the same documents fully considered by the patent examiner during prosecution of the application that matured into the '269

patent, and has failed to show that the patent examiner erred in allowing the '269 patent claims.

First, the Board should deny the Petition because it fails to demonstrate a reasonable likelihood of success that at least one claim is unpatentable. The grounds in the Petition, which assert unpatentability based on obviousness, are premised on a fundamentally flawed obviousness analysis. Petitioner's obviousness analysis improperly relies on inherency as a substitute for obviousness, and fails to establish that the claimed VICAT temperature would necessarily be present in the prior art. The obviousness analysis also improperly concludes that a prior art document that discloses a laundry list of potential polymeric materials used to formulate a layer in a film, where one of the many polymers disclosed in the laundry list "could" be polypropylene, and that some forms of polypropylene have the claimed VICAT softening temperature, somehow results in a "disclosure" by the prior art of this feature of the Challenged Claims. If a POSITA must first select from a list of potential materials, then use a specific type of that material for the layer, then the prior art cannot, as a matter of law, inherently possess the claimed VICAT softening temperature. Inherency must necessarily flow from the prior art.

Requiring a specific selection at the very outset eviscerates any possibility of inherency because satisfaction of the claimed VICAT softening temperature relies on

a probability or possibility – that a POSITA would select a specific type of polymer that is not expressly disclosed or used by the prior art. In addition, at least the Glover primary reference relied upon in Ground 1 prefers a polymer having a VICAT softening temperature far below the claimed range, because the purpose and function of that layer in Glover is the use of a "weldable" polymeric material. Glover therefore teaches away from use of a polymer that is not readily "weldable," such as isotactic polypropylene having a high VICAT softening (and hence high melting) temperature.

Second, the Board should exercise its discretion to deny institution under 35 U.S.C. §325(d), because Petitioner presents the same primary prior art reference previously considered by the Office during prosecution of the '269 patent. The Petition asserts that the Challenged Claims are obvious based on the alleged combination of Glover and Brandenburger, and based on the alleged combination of Khramenkov and Jones. Glover, Brandenburger, and Jones were all fully considered by the patent examiner during prosecution, and Khramenkov, although not appearing on the face of the '269 patent, was submitted to the Patent Office, but only after payment of the issue fee and consequently was not considered by the patent examiner. But the disclosure of Khramenkov is no more relevant to the Challenged Claims. Petitioner does not rely on Khramenkov as anticipating any of the Challenged Claims,

and Khramenkov only discloses materials specifically designed for use in a heat curable system, not in the claimed UV curable system. For the reasons explained in more detail in Section V below, the Patent Office has already considered the prior art, or cumulative disclosures thereof, during prosecution of the ‘269 patent. Petitioner has not presented any substantive evidence that the patent examiner erred in allowing the ‘269 patent claims.

For these reasons, as detailed further below, Patent Owner respectfully requests that the Board deny institution.

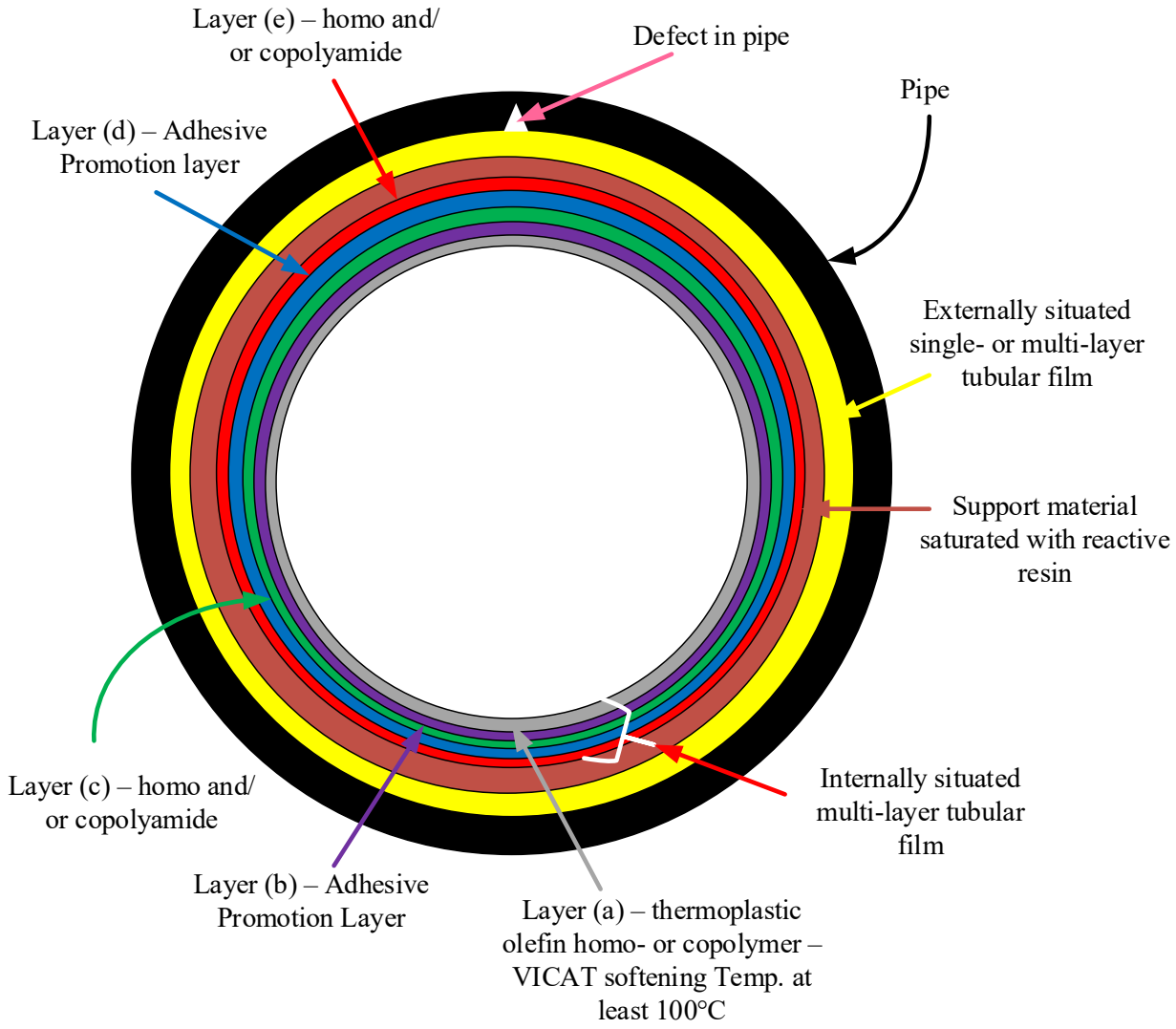
III. OVERVIEW OF THE ’269 PATENT

A. Summary of the Patent

The ’269 patent discloses and claims an insertion tube for the renovation of subterranean pipes that includes at least an internally situated tubular film with five (5) layers, and an externally situated single or multi-layer tubular film. The insertion tube further includes a support material positioned between the internally and externally situated tubular films that is saturated with a reactive synthetic resin. **EX1001**, claim 1. The five-layer internally situated tubular film includes the following layers:

a) An external layer comprised of at least one thermoplastic olefin homo- or copolymer having a VICAT softening point of at least 100°C (as measured by VST A/120 of ISO306/ASTMD1525);
b) An adhesive-promoter layer;
c) An internal layer comprised of at least one homo- and/or copolyamide;
d) An adhesive-promoter layer; and
e) An external layer comprised of at least one homo- and/or copolyamide.

EX1001 at 14:43-58; 4:14-16. An exemplary illustration of the insertion tube, including the subterranean pipe and defect, is illustrated below:



The '269 patent discloses problems encountered by known internally situated multi-layered tubular films that include a layer of homo and/or copolyamide as one external layer and a layer of a thermoplastic material as the other external layer. **EX1001** at 1:30 to 2:17. One problem is that the thermoplastic material used as the external layer is made from a weldable synthetic thermoplastic material, typically

comprised of an ionomer of polyethylene known as Surlyn® sold by E.I. Du Pont de Nemours. **EX1001** at 1:30-32; *see also*, Glover, EP 0267742 ("Glover" – **EX1005**) at col. 2, ll. 24-44; Jones, EP 0342897 ("Jones" – **EX1009**) at pg. 2, ll. 37-41. The '269 patent discusses Jones (EP 0342897) in the background section and describes the disadvantages of films made using the polyethylene ionomer Surlyn preferred by Jones. Glover (EP 0267742) also discloses using Surlyn to make the same or equivalent external layer, as disclosed by Jones. This material has a low VICAT softening temperature (about 73°C – see **EX2001**), it has a weakness in the region of the seal seam formed by the weldable external layer, and it does not have the mechanical properties required to withstand the loads encountered when the material is used for pipe renovation. **EX1001** at 2:7-17.

The '269 patent solved this problem by, *inter alia*, using at least one thermoplastic olefin homo- or copolymer having a much higher VICAT softening temperature of at least 100°C in the external layer of the internally situated tubular film. *Id*. at 2:31-47. The '269 patentee surprisingly discovered that such a multi-layered film has very good mechanical properties (e.g., extensibility to withstand loads that arise during inflation, transport into the pipe, storage, entry within the pipe system, can be withdrawn after hardening of the resin) even without prior conditioning. *Id.* at 2:48-67.

B. Claims

The ’269 patent includes 10 claims of which claim 1 is independent. Exemplary Claim 1 recites as follows (adopting Petitioner’s claim element designations):

[1pre] 1. An insertion tube suitable for the renovation of subterranean pipes, optionally subterranean sewer pipes, comprising

[1A] an optionally nonconditioned multilayer film that is impermeable to liquids and that is at least to some extent permeable to UV radiation, comprising a layer sequence made of

[1A-1] (a) a layer (a) comprised of at least one thermoplastic olefin homo- or copolymer, as one of the external layers,

[1A-2] (b) an adhesive-promoter layer (b),

[1A-3] (c) an internally situated layer (c) comprised of at least one homo- and/or copolyamide,

[1A-4] (d) an adhesive-promoter layer (d), and

[1A-5] (e) a layer (e) comprised of at least one homo- and/or copolyamide, as one of the external layers,

[1A-6] in the form of a tubular film,

[1A-7] wherein the VICAT softening point of the thermoplastic olefin homo- or copolymer of the layer (a) is at least 100° C.;

[1A-8] as internally situated tube, and

[1B] an externally situated single- or multilayer tubular film which is impermeable to liquids, and which reflects and/or absorbs UV radiation and/or short-wave, visible light, as externally situated tube, and

[1C] a support material situated therebetween and saturated with a reactive synthetic resin.

IV. THE PETITION SHOULD BE DENIED UNDER 35 U.S.C. §314(a) FOR FAILING TO DEMONSTRATE A REASONABLE LIKELIHOOD OF PREVAILING WITH RESPECT TO ANY CHALLENGED CLAIM

Patent Owner respectfully requests that the honorable Board deny institution because Petitioner fails to demonstrate a reasonable likelihood of success that at least one claim is unpatentable. The grounds in the Petition, which assert unpatentability based on obviousness, are premised on a fundamentally flawed obviousness analysis. First, at least one prior art document cited in each of Petitioner's Proposed Grounds of Unpatentability would lead a POSITA to use a thermoplastic polymer having a low softening temperature, not a polymer having a VICAT softening temperature of at least 100°C, as required by the Challenged Claims. Second, Petitioner's obviousness analyses improperly rely on inherency when each obviousness analysis requires the selection of a very specific type of polymer, without any guidance disclosed by the prior art to select that specific type of polymer. Finally, Petitioner's rationale for selecting the use of a polymer having a VICAT softening temperature of at least 100°C is supported only by its expert's testimony that it would have been obvious to

use such a polymer, when using a heat curable resin, which ignores the fact that the claims recite an insertion tube that uses a UV-curable resin, not a heat-curable resin.

A. Claim Construction and the Level of Skill in the Art

Petitioner proposes no construction of the claims, and provides an inaccurate description of the level of skill in the art. Petitioner's definition of a POSITA completely ignores having any experience in the field of the '269 patented invention – an insertion tube suitable for the renovation of subterranean pipes (*see* **EX1001**, Claim 1). A POSITA would have some knowledge and experience in the end-use performance of polymeric films and sheet products, but would not necessarily have experience in the formulation or manufacturing of polymeric films and sheet products. PO proposes modifying Petitioner's definition by deleting the requirement that a POSITA have experience in the formulation or manufacturing of polymeric films and sheet products.

B. Petitioner's Prior Art Teaches Away From the Challenged Claims

At least the Glover primary reference relied upon in Ground I, and the Jones reference relied upon in Ground 2, each prefer a polymer (Surlyn®) having a VICAT softening temperature in the 70's, (various grades of Surlyn® zinc ionomer resins have VICAT softening temperatures ranging from about 50°C to about 79°C – *see*

https://www.matweb.com/search/QuickText.aspx?SearchText=Surlyn) which is far below the claimed range. The reason both Glover and Jones use a polymer with a low softening temperature, and consequently a low melting temperature, is because the function and object of the films disclosed by these prior art documents is to use a "weldable" polymeric material. Weldable polymeric materials are described in each reference as a material that is easily melted or adhered to another layer. At least one reference presented in the only two Grounds of Unpatentability proposed by Petitioner therefore teaches away from use of a polymer that is not conveniently "weldable," such as polypropylene or a mixture of polypropylene and polyethylene having a high VICAT softening temperature.

C. Petitioner Has Failed to Establish a Reasonable Likelihood of Success in Proving Either Ground of Unpatentability

Petitioner presents two grounds of unpatentability. The first is a proposed combination of Glover and Brandenburger, two documents fully considered by the patent examiner during prosecution of the '269 patent. The second ground is a proposed combination of Khramenkov and Jones, in which Jones was fully considered and cited in the '269 patent background and comparative examples, and in which Khramenkov is less relevant than the art already considered by the examiner. In the unlikely event this honorable Board does not exercise its discretion to deny the

Petition as requested in Section V below, Petitioner has not established a reasonable likelihood of establishing that the Challenged Claims would have been rendered obvious by the hypothetical combinations of prior art set out in Grounds 1 and 2.

1. Glover in view of Brandenburger does not render obvious the challenged claims.

Petitioner's proposed combination of Glover and Brandenburger fails to render obvious the claims for a number of reasons. Glover teaches away from using a polymer having a high VICAT softening temperature, and hence a high melting temperature, by requiring the external layer to be comprised of a "weldable synthetic plastic composition." **EX1005**, Abstract. Petitioner's rationale for using a polymer with a higher VICAT softening temperature flies in the face of Glover's purpose and function, and is directly contradicted by its reliance on Glover and Brandenburger to satisfy elements [1A] and [1B] of the Challenged Claims. Finally, Petitioner's contention that certain materials generically disclosed by Glover might have a VICAT softening temperature above 100°C fails to establish that Glover inherently discloses the use of such a polymer.

a) Glover teaches away from using a polymer having a VICAT softening temperature above 100°C because Glover requires the external olefin-containing polymer layer to be "weldable" or easily melted.

Glover discloses multilayer polymeric films including an external layer of nylon polymer, and an external layer of a weldable synthetic plastic composition, for example a polyethylene ionomer. **EX1005**, Abstract. Glover defines the "weldable synthetic plastic composition" as "any suitable plastic composition which is strongly adherent to the nylon layer and which is conveniently heat, solvent or adhesive weldable to permit patches to be applied over joints and stitching necessarily formed in the conversion of the sheet material into elongated bags." *Id*. at 2:24-30. The weldable composition may be:

> polyethylene, polypropylene, an ethylene/vinyl acetate copolymer, an ethylene/acrylic acid copolymer, an ethylene/ethyl acetate copolymer, a polyurethane, a polycarbonate, or polyvinyl chloride. A preferred plastic composition is a polyethylene ionomer and more preferably an ionomer based upon zinc ions such as is marketed by Du Pont de Nemours & Company of the United States of America under the trade mark "Surlyn".

Id. at 2:35-44. The table below provides data for the VICAT softening points for the materials listed in Glover as suitable, with its preferred polymer highlighted (source – www.matweb.com).

Material	VICAT Softening T (°C)	Source
Polyethylene		
LDPE	68-93	**EX2002**
MDPE	111-123	**EX2003**
HDPE	41-133	**EX2004**
Polypropylene	67-159	**EX2005**
Ethylene/Vinyl Acetate	44-96	**EX2006**
Ethylene/acrylic acid	38-92	**EX2007**
Ethylene/ethyl acrylate	< 70	**EX2008**
Polyurethane	35-165	**EX2009**
Polycarbonate	114-155	**EX2010**
Polyvinyl Chloride	52-92	**EX2011**
Surlyn®	73	**EX2001**

As seen from the table above, most of the polymers disclosed in Glover as useful for the weldable synthetic plastic composition have VICAT softening temperatures below 100°C. Even if polypropylene were selected as Petitioner alleges, only certain grades of polypropylenes have VICAT softening temperatures of at least 100°C, which means the claimed softening temperature cannot be inherent. Searching the MatWeb database for "polypropylene homopolymer" provides 1,303 different entries for the various grades of polypropylene available on the market. **EX2012**, accessed on 12/18/2023. The preferred polymer of Glover, however, has a much lower VICAT softening temperature, precisely because Glover desires the material used for this layer to be conveniently weldable (e.g., melted or softened to adhere to itself and adjacent layers).

A POSITA would not have selected a high VICAT softening point polypropylene for use in Glover because it is well known that polypropylene has a relatively high melting point. **EX2013** at 29 ("PP possesses relatively high melting point,…"). Indeed, Glover expressly states that materials with a "relatively high softening point…makes it impracticable to heat weld it…" **EX1005** at 3, ll. 8-11. It also is well known that the melting point of a polymer is higher than its VICAT softening temperature. Because Glover prefers the use of a polymer that can form a weldable synthetic plastic composition, a POSITA would most likely select a polymer having a lower melting and softening point. Glover therefor teaches away from using polymers having a high VICAT softening temperature, especially polymers having VICAT softening temperatures significantly higher than its preferred weldable material Surlyn® with a VICAT of about 73°C.

b) Petitioner's rationale for using a polymer with a higher VICAT softening temperature is directly contradicted by its reliance on Glover and Brandenburger to satisfy elements [1A] and [1B]

Petitioner's alleged motivation for selecting a polymer having a higher VICAT softening temperature goes directly against Glover's use of the disclosed polymer as a "weldable synthetic plastic composition," and is contradicted by Petitioner's reliance on Glover's use of UV-curable materials. With respect to element [1A], Petitioner

relies on Glover as disclosing "that it is well-known in the art to use UV curable resins and to use a corresponding tubular film that 'permit[s] the passage of the light to the resin to effect the curing.'" Petition at 22.

With respect to element [1B], Petitioner relies on Bradenburger's disclosure of an outer tubular film that has an opaqueness or function of opaqueness, reflection. Petition at 29, **EX1003**, ¶144. Petitioner states:

> It would have been obvious to a POSITA to combine the opaque outer tubular film of Brandenburger with the inner tubular film of Glover ***when using a UV curable resin*** to protect the UV curable resin from premature hardening for periods of storage prior to installation within a sewer pipe. EX1003, ¶¶148. A POSITA would have found positioning the opaque outer tubular film of Brandenburger on the outside of the support material ***with a UV curable resin to be a standard design choice for UV CIPP liner*** which would have yielded predictable results of preventing premature curing of the resin during storage and transportation to a job site. EX1003, ¶¶144-150.

Petition at 30, emphasis added.

But when contending that it would have been obvious to use a polymer with a high VICAT softening temperature Petitioner alleges that "it would have been obvious for a POSITA to use a thermoplastic olefin homo- or copolymer for layer (a)

that had a VICAT softening point of at least 100°C. . . . ***when using the heat-based curing process***." Petition at 27-28, emphasis added. Petitioner's reliance on Glover and Brandenburger, however, is premised on using a UV curable resin, not a heat-based curing process. Petitioner's directly contradictory positions render Ground 1 insufficient to establish a reasonable likelihood of prevailing in rendering obvious all of the elements recited by claim 1.

Petitioner also incorrectly states that PO "appears to have simply chosen an arbitrary VICAT softening point," and that PO argued "extensively" in its opposition against the European counterpart to the '269 patent that "the VICAT softening temperature of at least 100°C is not related to any desired material properties of the inner tubular film." Petition at 27. Petitioner failed to provide to the PTAB the entire opposition file history, which PO attaches hereto as **EX2014**. Despite those arguments, the EPO ultimately allowed the claims after they were amended, and the EPO did not conclude that the VICAT softening temperature is unrelated to any desired material properties (the opposition division did state that the patent owner of the EP patent at the time did not provide sufficient evidence to show improved properties). EX2014, Grounds for Decision (Annex) dated March 4, 2018, pp. 49-59 (in German).

Upon losing its opposition, PO recognized the value of the patented technology, and therefore sought to acquire ownership of the patent family.

Petitioner contends that using a layer (a) material that has a VICAT of at least 100°C "would be considered routine and well-known to a POSITA," citing **EX1003**, ¶¶139-141; Petition at 27. But this statement completely ignores the purpose and function of Glover's weldable synthetic plastic composition, and Glover's preference to use polymers having a much lower softening temperature.

Petitioner is NOT relying on Glover's disclosure of the heat-based curing process. Rather, as made clear in its discussion of claim element [1A], Petitioner is relying on Glover's alternative method of UV curing. Petitioner's rationale for using a higher softening temperature material, in direct contrast to Glover's preference, is contrary to Petitioner's reliance on Glover's UV curable resin material. In addition, because most of the polymers used for the "weldable synthetic plastic composition" have lower softening and melting temperatures, as a POSITA would naturally expect, Glover cannot inherently disclose the claimed VICAT softening temperature.

Petitioner does not rely on Brandenburger as disclosing any polymer having the claimed VICAT softening temperature. Rather, Petitioner relies on Brandenburger solely for disclosing an outer tubular film – a disclosure Petitioner admits is absent

from Glover. Petition at 29-31. Brandenburger only discloses polyethylene as a suitable olefin material for the inner tubular film, which as noted above, typically has a VICAT softening temperature well below 100°C. Using a high VICAT softening temperature polypropylene material in the inner tubular film would run counter to Brandenburger's requirement that the inner tubular film be made from polyethylene, which "offers both the properties required for the lamination process and the desired processing advantages." **EX1006** at 2:42-46.

Petitioner's contention that it would have been obvious to use a higher softening temperature material is directly contradicted by its reliance on Glover's UV curing system, not a heat-based curing process. Petitioner therefore has failed to demonstrate a reasonable likelihood of success in proving that Glover in view of Brandenburger renders obvious any of the Challenged Claims.

c) Neither Glover nor Brandenburger inherently discloses a polymer having a VICAT softening temperature above 100°C.

Neither Glover nor Brandenburger expressly or inherently discloses the use of a thermoplastic olefin homo-or copolymer having a VICAT softening temperature above 100°C. As noted above, Glover discloses a number of polymeric materials that can be used to form the weldable synthetic plastic composition. Using hindsight, Petitioner selected polypropylene as one of the many disclosed materials, and then

from the myriad possible polypropylene materials available (over 1,000), and with no suggestion at all from the prior art to do so, Petitioner then selected a certain type of polypropylene – isotactic polypropylene with a high VICAT softening temperature. If a POSITA needs to make a number of very specific selections from Glover to arrive at a material that will inherently[1] have the claimed VICAT softening temperature, it is improper to rely on Glover as disclosing this element of the Challenged Claims.

The Federal Circuit explained the standard for determining inherency as follows:

> 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.

[1] Petitioner does not use the term "inherent" in its obviousness analyses, but there can be no doubt that this is the position Petitioner is taking to arrive at the claimed softening temperature.

Continental Can Co. USA v. Monsanto Co., 948 F.2d 1264, 1269 (Fed. Cir. 1991) (quoting *In re* Oelrich, 666 F.2d 578, 581 (C.C.P.A. 1981); *Akamai Techs., Inc. v. Cable & Wireless Internet Serv., 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."); *Transclean Corp. v. Bridgewood Servs., Inc.*, 290 F.3d 1364, 1373 (Fed. Cir. 2002); *Scaltech, Inc. v. Retec/Tetra, L.L.C*., 178 F.3d 1378, 1384 (Fed. Cir. 1999); *Finnigan Corp. v. Int'l Trade Comm'n*, 180 F.3d 1354, 1366 (Fed. Cir. 1999).

The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993); *In re Oelrich*, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (C.C.P.A. 1981). "To establish inherency, the extrinsic 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. 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.'" *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citations omitted) In addition, "[a]n

invitation to investigate is not an inherent disclosure" where a prior art reference "discloses no more than a broad genus of potential applications of its discoveries." *Metabolite Labs., Inc. v. Lab. Corp. of Am. Holdings*, 370 F.3d 1354, 1367, 71 USPQ2d 1081, 1091 (Fed. Cir. 2004).

Thus, "[o]ccasional results are not inherent," *MEHL/Biophile Int'l Corp. v. Milgraum,* 192 F.3d 1362, 1365 (Fed. Cir. 1999); *Trintec Indus., Inc. v. Top-U.S.A. Corp.,* 295 F.3d 1292, 1297 (Fed. Cir. 2002) ("It is irrelevant that a skilled artisan might possibly use the computer to create the final desired image from the color separations. Inherency does not embrace probabilities or possibilities."); *Glaxo, Inc. v. Novopharm Ltd.,* 52 F.3d 1043, 1047-48 (Fed. Cir. 1995); *Electro Med. Sys., S.A. v. Cooper Life Sci., Inc.,* 34 F.3d 1048, 1052 (Fed. Cir. 1994) ("The mere fact that a certain thing may result from a given set of circumstances is insufficient to prove anticipation.").

In an effort to reconstruct element [1A-7] of the Challenged Claims from Glover's disclosure, Petitioner selected a specific polypropylene needle from the haystack of polymers listed as suitable for Glover's weldable synthetic plastic composition. Petitioner then selected a very specific type of polypropylene, the one with the highest softening and melting points, in direct contradiction to Glover's

requirement that the polymer form a "conveniently heat…weldable" material, and where Glover expressly states that polymeric materials with relatively high softening temperatures make it impracticable to heat weld the materials to another layer.

Merely selecting polypropylene also would not inherently result in a polymer having the claimed VICAT softening temperature. Closson, U.S. Patent No. 5,948,711 (**EX 2015**) discloses the use of two different types of polypropylene having different degrees of crystallinity and different VICAT softening temperatures. Claim 1 of Closson recites a high crystalline polypropylene having a VICAT softening temperature of about 111°C, and a medium crystalline polypropylene having a VICAT of about 70°C. The MatWeb database for the category "polypropylene, film grade," lists a range of VICAT softening temperatures of from 67.0 to 159°C, which is consistent with Closson. **EX 2015** at 3.

Petitioner and its expert state that polypropylene "typically has a VICAT softening point significantly over 100°C in the range of 145-150°C." Petition, 27, **EX1003**, ¶139. Petitioner mischaracterizes its own expert's testimony by stating that polypropylene in the generic sense typically has a high VICAT softening temperature in the range of 145-150°C. Paragraph 139 of EX1003 refers to the discussion in Section VI(B) where its expert states that "[s]tandard ***isotactic grades*** of homopolymer polypropylene have VICAT softening points in the range of 145-

150°C." **EX1003**, ¶61, citing EX1032 at 18 (also disclosed in **EX1032** at 24), emphasis added. This very well may be true, but there are many grades of homopolymer polypropylene other than isotactic polypropylene that have much lower VICAT softening points, as noted by PO above.

Petitioner therefore has failed to establish that Glover discloses a polymeric material of layer (a) of the Challenged Claims that has the claimed VICAT softening point. Glover clearly does not expressly disclose the VICAT softening point of the polymer used in its weldable synthetic plastic composition. Petitioner therefore has not established that Glover inherently discloses the use of a polymer in its weldable synthetic plastic composition that has the softening point recited by the Challenged Claims.

In sum, Glover teaches away from using a polymer in its weldable synthetic plastic composition that has a relatively high VICAT softening point, because that composition needs to be conveniently heat (or adhesive) welded to other layers. Glover expressly states that polymers having relatively high VICAT softening points are impracticable for use because they cannot be conveniently heat welded. **EX1005** at 3, ll. 8-11. Petitioner's motivation for using a high softening point polymer (when a heat-curable resin is used) is inconsistent with and contradicted by Petitioner's motivation to satisfy elements [1A] and [1B] of the Challenged Claims that recite

UV-curable resins. Finally, Petitioner has failed to establish that Glover inherently discloses a polymer having the claimed VICAT softening point.

PO respectfully submits that Petitioner has not established a reasonable likelihood of prevailing on Ground 1, and kindly asks this honorable Board to deny institution of Ground 1.

2. Khramenkov requires materials suitable for a heat curable resin, and does not disclose or suggest materials useful for UV curable resins

Petitioner's obviousness analysis for Ground 2 is fundamentally flawed for a number of reasons. The entire basis for Petitioner's argument that a POSITA would have used, or would have found it obvious to use a thermoplastic homo- or copolymer having a VICAT softening temperature of at least 100°C is premised on Khramenkov's disclosure of applying heat to the inside of the tubular film to cure the resin. But Petitioner then proposes modifying Khramenkov by removing the heat-curable resin required therein, and replacing it with a UV-curable resin, and then modifying certain layers to ensure compatibility with a UV-curable system. It is entirely improper to contend that it would have been obvious to use a certain material for a heat-curing process, and then NOT use that process but use a different UV-curing process. Petitioner's motivation and rationale for using a thermoplastic homo-

or copolymer having a VICAT softening temperature above 100°C is not germane to the Challenged Claims, which recite materials suitable for a UV-curable resin.

Petitioner glosses over the fact that Khramenkov's hose lining is designed specifically for use with heat-curable resin materials in which heat is applied from the inside of the tubular lining to cure the resin material using a heat transfer medium at a temperature of from 80-100°C. The hose lining is designed by Khramenkov such that the layer of the lining adjacent the heat transfer medium has properties sufficient to withstand the increased temperature. These conditions simply do not exist when UV curable resins are used, and consequently, the motivation and desirability of using the specifically disclosed materials to fabricate the hose lining of Khramenkov to have heat resistance characteristics have little to no relevance to tubular lining materials used with UV curable systems.

In short, Khramenkov fails to disclose at least the following features of claim 1:

1. [1A] – Khramenkov does not disclose a multilayer film that is at least to some extent permeable to UV radiation;
2. [1A-2] - Khramenkov does not disclose an adhesive-promoter layer (b);

3. [1A-4] - Khramenkov does not disclose an adhesive-promoter layer (d);
4. [1A-7] - Khramenkov does not disclose a thermoplastic olefin homo- or copolymer having a VICAT softening point of at least 100°C; and
5. [1B] - Khramenkov does not disclose an externally situated single- or multiplayer tubular film that reflects and/or absorbs UV radiation and/or short-wave, visible light.

Petitioner's statements as to how or why Khramenkov and/or Jones disclose each of the above listed features are either not accurate, they assume the use of specific un-disclosed polymers, they improperly rely on inherency, and/or they rely on unsupported factual statements.

a) Petitioner's contention that Khramenkov's inner tubular film is permeable to UV radiation is unsupported and not relevant to its modification of Khramenkov's three-layer film

With respect to claim feature 1[A], Petitioner contends that "a POSITA would understand that the multilayer inner tubular film disclosed in Khramenkov would be inherently permeable to UV radiation because (1) all plastic film allows the passage of at least some UV radiation and (2) Khramenkov does not disclose adding any UV radiation inhibitors to prevent the passage of UV radiation." Petition at 45, *citing* **EX1003**, ¶204. This paragraph of Petitioner's expert report does not support Petitioner's statement in this regard:

> A POSITA contemplating Khramenkov would have known that a three-layer film comprising a first external layer of polyamide 6, an internal layer of polyamide 12 or other polyamide, and a second external layer of a mixture of polyethylene with polypropylene could be "at least to some extent permeable to UV radiation." Therefore, Khramenkov teaches "[a]n optionally nonconditioned multilayer film that is impermeable to liquids and that is at least to some extent permeable to UV radiation, comprising a layer sequence made of.

EX1003, ¶204. All that Petitioner's expert states, without any factual basis or evidence to support the statement, is that a POSITA "would have known" that Khramenkov's ***three-layer film*** "***could be*** 'at least to some extent permeable to UV radiation.'" *Id*, emphasis added. Nowhere does Petitioner's expert state that all plastic film allows the passage of at least some UV radiation, or that Khramenkov does not disclose adding any UV radiation inhibitors to prevent the passage of UV radiation. Petitioner's unsupported statements should be given little to no weight.

Even if given any weight, Petitioner has only presented testimony that the three-layer film of Khramenkov "could be" at least to some extent permeable to UV radiation. The Challenged Claims do not recite a multi-layer film that "could be" at least to some extent permeable to UV radiation, but rather it must be. Petitioner has failed to establish that Khramenkov discloses element [1A] of the Challenged Claims.

In addition, even if Petitioner's statements were true, they only pertain to a three-layer film, which Petitioner must modify to arrive at the Challenged Claims. The Challenged Claims recite at least a five-layer film, and to satisfy this feature of the claims, Petitioner relies on Jones' disclosure of an alleged adhesive-promoter layer to modify Khramenkov's three-layer film. Petitioner fails to provide any evidence, statement, argument, or otherwise to suggest that Khramenkov's three-layer film, modified to include two adhesive-promoter layers as in Jones, would or could be at least to some extent permeable to UV radiation. Accordingly, even if Petitioner's unsupported statements made on page 45 of the Petition were true, Petitioner has failed to establish that any five-layer multilayer film created by modifying Khramenkov's three-layer film to include adhesive-promoter layers (which "could be" UV resistant) was at least to some extent permeable to UV radiation. On this basis alone, Petitioner has failed to establish a reasonable likelihood of success on Ground 2.

b) Petitioner has failed to establish that it would have been obvious to use Jones' adhesion promoter layer to bond a weldable plastic layer to a nylon layer in Khramenkov's film that avoids the use of a weldable plastic layer.

With respect to claim features [1A-2] and [1A -4]), Petitioner once again relies on expert testimony that simply does not support what Petitioner baldly asserts.

Petitioner contends that a "POSITA would have found it routine and obvious to use an adhesion-promoter layer between layers 7 and 8 of Khramenkov." Petition at 47, citing **EX1003**, ¶220. Nowhere in this paragraph does Petitioner's expert state that a POSITA would have found it routine and obvious to use an adhesion-promoter layer. Rather, Petitioner's expert states in this portion of the report that:

> A POSITA would have been motivated to utilize the bonding layers of Jones between the three layers of the multilayer film of Khramenkov. Utilizing bonding layers (*i.e.*, adhesive-promoter layers) in the multilayer film of Khramenkov would allow the film to be manufactured in one step through co-extrusion of the adhesive-promoter layers, as taught by Jones, between the three disclosed layers of the multilayer film of Khramenkov. A POSITA would have been motivated to remove the secondary step of melting the layers together to reduce manufacturing time and cost of Khramenkov's multilayer film, while still maintaining a strong bond between the layers.

EX1003, ¶220.

Petitioner correctly refers to its expert's testimony in the next paragraphs on pages 47 and 48 of the Petition, but here, neither Petitioner nor its expert address the impact of using Jones' bonding layers on the UV transmission of the multilayer film. Jones discloses various types of materials that are useful in forming the bonding

layer, some of which are not necessarily permeable to UV radiation. In addition, because Khramenkov is only concerned with heat-curable resins, there would have been no need or desirability to provide materials used to fabricate the multilayer film that are at least to some extent permeable to UV radiation.

Finally, Jones' bonding layer is used to bond Jones' "weldable synthetic plastics material" layer to its Nylon layer. Khramenkov does not disclose or suggest a "weldable synthetic plastics material" layer that might or could be bonded with a Nylon layer. Jones' weldable synthetic plastics material layer is the same layer disclosed by Glover, and makes use of the same preferred material - Surlyn®, which would melt at the heat-curable temperatures experienced by Khramenkov's films, (melting point is 76°C), thereby destroying the integrity of the multilayer film. Jones does not disclose or suggest the use of a bonding layer between any and all layers of a multilayer film – only between the Nylon and weldable plastic layers disclosed therein.

Jones does not disclose or suggest the use of, or a need for, a bonding layer to bond a Nylon layer to a layer comprised of a mixture of polypropylene (PP) and polyethylene (PE), nor would a bonding layer between these two layers of Khramenkov be needed when used in Khramenkov's system. Khramenkov discloses

the use of the mixture of PP and PE such that the PE "may be molten when heated," to form a "molten phase of a fusible polymer." **EX1007** at 5:left-hand column: 44-48. The fusible polymer will "fuse" or "adhere" to the adjacent polyamide layer (e.g., Nylon), thereby rendering the use of additional bonding layer(s) such as those disclosed by Jones entirely redundant, inefficient, and costly.

The rationale provided by Petitioner for modifying Khramenkov to include Jones' bonding layers does not support the proposed modification. First, Petitioner and its expert contend that a POSITA would have been motivated to utilize the bonding layers of Jones because it "would allow the film [of Khramenkov] to be manufactured in one step through co-extrusion," and "efficiently co-extrude all five layers … together in an efficient single process." Petition at 47-48; **EX1003**, ¶220. But the film of Khramenkov can be more readily and efficiently manufactured by co-extrusion of just the three layers disclosed therein, not the modified five-layered material, which obviously would be more complicated.

Second, Petitioner and its expert contend that using the bonding layers of Jones would avoid "damaging mechanical properties … by using heat to melt the layers together;" avoid the "extra unnecessary and costly manufacturing step of heating the layers to melt [them] together," and to "remove the secondary step of melting the

layers together to reduce manufacturing time and cost of Khramenkov's multilayer film." *Id*. Khramenkov does not disclose any secondary, unnecessary, or costly manufacturing step of heating the layers to melt them together. The layers are fused to one another during the heat curing process. There simply is no disclosure in Khramenkov of any secondary heating step to melt the layers together.

Third, the rationale provided in Khramenkov for using an inner layer comprising a mixture of polyethylene and polypropylene is so that the layer can form a fusible polymer in which one polymer, polypropylene, is not molten at the heat curing temperature of 80-100°C to prevent thermal degradation of the thermoplastic layer. **EX1007**, pg. 4, left-hand column, at 44-65. The problem of thermal degradation due to heat treatment would not exist if Khramenkov were modified as suggested by Petitioner to replace the heat-curable resin with a UV curable resin. Accordingly, Petitioner's obviousness analysis is fundamentally flawed insofar as it is premised on a motivation and desirability to use a specifically designed inner layer to withstand the heat applied to cure a heat-curable resin material. That motivation and desirability is not germane to Petitioner's additionally proposed modification of Khramenkov of replacing the heat-curable resin with a UV curable resin, where no heat is applied on the inner surface of the tube.

c) Petitioner fails to prove that Khramenkov's mixture of polypropylene and polyethylene necessarily has the claimed VICAT softening temperature.

With respect to claim feature 1[A-7], Petitioner again relies on the doctrine of inherency (without stating so) to satisfy the un-disclosed feature that the thermoplastic olefin homo- or copolymer of layer (a) has a VICAT softening temperature of at least 100°C. As stated in Section IV(C)(1)(c) above, in order for the material of Khramenkov's inner layer to inherently disclose this claim feature, it must necessarily be present. Petitioner relies entirely on a probability that a polypropylene with a high VICAT softening temperature would be used, and bases its motivation to use a high softening temperature material on a feature that is not relevant to a UV-curable system:

> A POSITA would also be motivated to use a material, such as a modified polyethylene or polypropylene, for layer (a) that has a VICAT of at least 100° C if a heat curable resin were used instead of a UV curable resin to ensure layer (a) could withstand temperatures exceeding 100° C during curing of the heat curable resin. EX1003, ¶238.

Petition at 51. But Petitioner proposes modifying Khramenkov by NOT using a heat curable resin but instead using a UV curable resin, the exact opposite of the entire basis for the motivation to use a high softening temperature material. If Khramenkov were modified as Petitioner suggests, i.e., by using a UV curable resin material

instead of Khramenkov's disclosed heat-curable resin, then the rationale and motivation for using a high softening temperature no longer exists.

Petitioner and its expert assume that a homopolymer of polypropylene has a VICAT softening temperature of 145-150°C, an assumption that is belied by a number of publications, as described in detail above in Section IV(C)(1)(c). First, Petitioner assumes a POSITA would use a certain isotactic polypropylene, which makes little sense in a film that must be extensible because this type of polypropylene is the stiffest, most brittle, and least extensible, and consequently has a high VICAT softening temperature. Many other grades of polypropylene, including varying degrees of isotacticity, crystallinity, melt flow index, density, etc., exist in which the polypropylene has a VICAT softening temperature much lower than Petitioner's assumed temperature of 145-150°C.

For example, Closson (**EX 2015**) discloses the use of a blend of a highly crystalline polypropylene having a VICAT softening temperature of 111°C, and a medium crystalline polypropylene having a VICAT softening temperature of 70°C. Claim 1. Even assuming an additive VICAT, as Petitioner's expert has assumed (see, e.g., **EX1003** at ¶ 240), if the preferred combination of polypropylenes of Closson were used (70% highly crystallinity and 30% medium crystallinity), the combined VICAT softening temperature is below 100°C. More importantly, Closson

specifically discloses a homopolymer of polypropylene having a VICAT softening temperature less than one-half the softening temperature of Petitioner's assumed polypropylene.

The material data sheet for various film grades of polypropylene is consistent with Closson and Petitioner's expert's testimony. The data sheet shows a VICAT softening temperature in the range of from 67-159°C. **EX2005**. Petitioner simply chose the highest VICAT softening temperature polypropylene, but a POSITA would have been free to select any polypropylene for use in Khramenkov's system. The data sheet shows a melting point range of 119-170°C for film grades of polypropylene, which means any polypropylene, even those with VICAT softening temperatures as low as 70°C, would be suitable because they would not melt at the heat curing temperature of Khramenkov (80-100°C).

Ellis, *et al*., POLYMERS A PROPERTY DATABASE, 2ND ED., CRC Press (2009) discloses that mixtures or blends of polypropylene and polyethylene can have a wide range of VICAT softening temperatures, ranging from 60-150°C. **EX2016** at 824. It is clear that neither polypropylene nor mixtures of polypropylene and polyethylene necessarily satisfy the claimed VICAT softening temperature. Rather, the claimed VICAT softening temperature can only be realized by Petitioner's selection of a

specific type of polypropylene that has the highest VICAT softening temperature of all polypropylenes, and then using a certain amount of polypropylene in the mixture.

There is nothing in Khramenkov that would suggest the use of polypropylene having the highest VICAT softening temperature, nor would there have been any reason to use such a polypropylene, especially given its greater stiffness and lower elasticity than polypropylenes with lower VICAT softening temperatures. In addition, Petitioner has failed to carry its burden of proving that Khramenkov's mixture of polypropylene and polyethylene necessarily has the claimed VICAT softening temperature because Petitioner has failed to provide:

- Any data measuring the softening temperature;
- Any evidence that the polypropylene used by Khramenkov would necessarily have a VICAT softening temperature of 145°C (**EX1003** at ¶240); and
- Any evidence that VICAT softening temperature is an additive property when mixtures of polymers are employed.

The burden is on Petitioner to establish that Khramenkov's polymeric materials have the claimed VICAT softening temperature. Petitioner has failed to establish that the claimed VICAT softening point is inherent in Khramenkov's layer. Inherency cannot be established by probabilities but must be necessarily present. *Continental Can Co. USA v. Monsanto Co*., 948 F.2d 1264, 1269 (Fed. Cir. 1991) (quoting *In re*

Oelrich, 666 F.2d 578, 581 (C.C.P.A. 1981). Khramenkov is silent as to any specific polypropylene to use or any specific VICAT softening temperature, leaving the selection of a suitable polypropylene to the discretion of a POSITA, who had numerous materials having a wide range of VICAT softening temperatures from which to select.

> *d) Petitioner relies on directly contradictory statements to support its contention that the inner tubular film of Khramenkov would be permeable to UV radiation but its external tubular film would not.*

Finally, with respect to claim feature [1B], Petitioner relies on conflicting testimony from its expert. On the one hand, Petitioner states (its expert did not make the statement even though Petitioner cites its expert report) that "a POSITA would understand that the multilayer inner tubular film disclosed in Khramenkov would be inherently permeable to UV radiation because (1) all plastic film allows the passage of at least some UV radiation…" Petition at 45, *citing* **EX1003**, ¶204. Regarding the outer tubular film, Petitioner relies on its expert, who testified that "a POSITA would have known that all polymer films reflect and/or absorb at least some UV radiation and/or short-wave, visible light." **EX1003**, ¶250; Petition at 53. Accordingly, Petitioner contends on the one hand that all plastic films are inherently permeable to UV radiation, apparently sufficient to permit curing of a UV-curable resin to satisfy

element [1A], but on the other hand that all plastic films to some extent reflect and/or absorb UV radiation, apparently to prevent curing of a UV-curable resin to satisfy element [1B].

Petitioner's rational for using an externally situated tubular film that reflects and/or absorbs UV radiation to prevent curing a UV-curable resin is premised on a modification of Khramenkov that goes directly against Petitioner's rational for using a high VICAT softening temperature polymer mixture for the inner most layer of Khramenkov. That is, Petitioner's rationale and alleged motivation for using a high VICAT softening temperature material for the inner most layer is premised on the use of a heat-curable resin in Khramenkov. In direct contrast, Petitioner's rational and alleged motivation for using an externally situated tubular film that reflects and/or absorbs UV radiation is premised on the use of a UV-curable resin.

Petitioner's obviousness analysis is therefore fundamentally flawed because it relies on directly contradictory positions. Accordingly, Petitioner has failed to demonstrate a reasonable likelihood of success in proving that Khramenkov in view of Jones renders obvious any of the Challenged Claims.

PO respectfully submits that Petitioner has not established a reasonable likelihood of prevailing on Ground 2, and kindly asks this honorable Board to deny institution of Ground 2.

V. THE BOARD SHOULD DENY INSTITUTION

Institution of *inter partes* review is discretionary. *Harmonic Inc. v. Avid Tech, Inc.*, 815 F.3d 1356, 1367 (Fed. Cir. 2016) ("the PTO is permitted, but never compelled, to institute an IPR proceeding"). Specifically, Section 325(d) states that "[i]n determining whether to institute. . . the Director may take into account whether . . . the same or substantially the same prior art or arguments previously were presented to the Office." 35 U.S.C. § 325(d); *see also Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 at 17 (PTAB Dec. 15, 2017) (precedential) and *Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 at 7 (PTAB Feb. 13, 2020) (precedential); and *Agrinomix, LLC v. Mitchell Ellis Prods., Inc.*, IPR2017-00525, Paper 6 (PTAB Jun. 14, 2017) (denying institution on grounds based on prior art that was considered during prosecution even though the prior art reference was not relied upon to reject all the challenged claims).

In evaluating whether to exercise its discretion under §325(d) when the same or substantially the same prior art or arguments previously were presented to the Office, the Board weighs the following non-exclusive factors "(a) the similarities and material differences between the asserted art and the prior art involved during

examination; (b) the cumulative nature of the asserted art and the prior art evaluated during examination; (c) the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection; (d) the extent of the overlap between the arguments made during examination and the manner in which Petitioner relies on the prior art or Patent Owner distinguishes the prior art; (e) whether Petitioner has pointed out sufficiently how the Examiner erred in its evaluation of the asserted prior art; and (f) the extent to which additional evidence and facts presented in the Petition warrant reconsideration of the prior art or arguments." *Becton, Dickinson* at 17-18.

The Board often applies the following two-part framework in determining whether to exercise its discretion under § 325(d), specifically:

> (1) whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and
>
> (2) if either condition of [the] first part of the framework is satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims.

Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH, IPR2019-01469, Paper 6 at 8 (PTAB Feb. 13, 2020) (precedential) ("*Advanced Bionics*").

Becton, Dickinson factors (a), (b), and (d) relate to the first step, and *Becton, Dickinson* factors (c), (e), and (f) relate to the second step. *Id.* at 10.

A. The examiner considered the same and similar prior art during prosecution (*Becton, Dickinson* factors (a), (b), and (d)).

The prior art cited by the Petitioner is the same as, and substantially similar to, the prior art already considered by the Examiner during prosecution of the ’269 patent. First, *Becton, Dickinson* factors (a), the lack of *material* differences between the prior art evaluated during prosecution of the ’269 patent and the prior art cited in the Petition, and (b), the cumulative nature of the asserted art and the prior art evaluated during examination, weigh in favor of denying institution.

As an initial matter, each of the references except Khramenkov relied on in each ground raised in the petition was cited and evaluated by the Examiner. *See* **Ex. 1001** at 1 and 2. Jones, and its cumulative teaching Glover, were both fully considered, and their disclosures discussed in the background of the ‘269 patent, and an example of Jones was replicated as a comparative example, and found to have poor extensibility. **EX1001** at 1:30-2:17; 13:20-14:40. Khramenkov, although cited to the Patent Office, does not appear to have been considered by the patent examiner. But Khramenkov is far less relevant than Glover, Jones, and Brandenburger because each of Glover, Jones, and Brandenburger at least discloses a UV-curable resin

material for use in the lining, a feature of the Challenged Claims that is mentioned throughout the '269 patent, including the title and Abstract.

Thus, Petitioner's art was already fully considered by the Examiner during prosecution of the '269 patent, and if not considered, discloses the same or less relevant subject matter than the prior art cited by Petitioner.

The fourth *Becton, Dickinson* factor (d), the extent of the overlap between the arguments made during examination and the manner in which Petitioner relies on the prior art or Patent Owner distinguishes the prior art, also weighs in favor of denial. At least Glover and Jones were distinguished in the text of the '269 patent, and Patent Owner distinguishes the prior art cited in the Petition in the same or similar manner.

Therefore, these *Becton, Dickinson* factors favor denial.

B. Petitioner has not demonstrated that the Office erred in a manner material to the patentability of challenged claims (*Becton, Dickinson* factors (c), (e), and (f)).

Where substantially similar prior art and/or arguments were previously raised before the Examiner, the Petitioner bears the burden of showing how the Examiner erred in his/her consideration of the prior art. *See, e.g., Juniper Networks, Inc.*, IPR2017-00642, Paper 31 at 10-11 (Mar. 14, 2018). The Petitioner must show that the error is clear and material, and if the Petitioner fails to show that the Office erred,

the Director may exercise his discretion not to institute *inter partes* review. An example of a material error "may include misapprehending or overlooking specific teachings of the relevant prior art where those teachings impact patentability of the challenged claims." *Advanced Bionics*, IPR2019-01469, Paper 6 at 8.

Petitioner has not met its burden of showing the Office erred in a manner material to patentability. Petitioner provides nothing new from what was already known and considered by the Examiner during prosecution. Petitioner instead contends that the Examiner erred in a material manner "by not considering Glover or using Glover to reject all of the claims of the '269 Patent because Glover has all of the elements of Challenged Claims 1-10, except for the well-known outer film which Brandenburger provides." Petition at 72, emphasis in original. As noted above, Glover clearly does not "have all" of the elements of the claims except for the outer film, and Glover does not disclose "material that has a VICAT softening point of at least 100 degrees Celsius." *Id*.

The Examiner no doubt was well-versed in polymer chemistry and knew and understood they myriad grades of polyolefins available, the high degree of variability in their physical and thermal properties, and that Glover's generic disclosure of numerous different polymers (including a preference for a polymer having a much lower VICAT softening temperature) was insufficient. Petitioner therefore has failed

to establish that the Patent Office erred in any material manner, and has failed to show how any additional evidence warrant reconsideration. Factors (e) and (f) therefore weigh in favor of denial. Factor (c) does not appear to weigh in favor of denial, but it alone does not outweigh the remaining factors.

Petitioner's only contention for not denying Ground 2 is that Khramenkov was not considered during prosecution of the '269 patent. Petitioner does not explain or provide any evidence as to whether Khramenkov was or was not cumulative, more material, less material, or equivalent to the prior art already considered by the examiner during the '269 patent prosecution. The mere fact that a document was not considered does not settle the issue (millions of documents were not considered, but if they are all less relevant, then the PTAB should deny institution). PO has presented a number of reasons as to why Khramenkov was not as relevant as the prior art considered by the examiner, the prior art discussed in the '269 patent background, and the background prior art (Jones and its equivalent Glover) distinguished in the '269 patent background and examples.

In view of the foregoing, it is appropriate for the Board to exercise its discretion under §325(d) to deny institution because all the *Becton, Dickinson* factors weigh in favor of denying institution. Even in the unlikely event the Honorable Board were to conclude that factors (c) and (d) favor Petitioner, PO respectfully

submits that weighing all factors, where factors (a), (b), (e), and (f) strongly favor PO justifies the Board exercising its discretion under §325(d) to deny institution.

For the foregoing reasons, Petitioner has failed to establish a reasonable likelihood of prevailing on any of Grounds 1 or 2, and Petitioner relies on the same or less relevant prior art than the art already considered by the Patent Office during prosecution of the '269 patent. PO respectfully asks this Honorable Board to deny institution of this IPR.

VI. CONCLUSION

For the reasons presented above, the Board should deny institution.

Dated: December 26, 2023 Respectfully submitted,

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CERTIFICATE OF COMPLIANCE

1. The undersigned certifies that this brief complies with the type volume limitations of 37 C.F.R. § 42.24(a)(1)(i). This paper contains 9,520 words (excluding table of contents, table of authorities, certificate of service, certificate of compliance, and table of exhibits) as calculated by the word count feature of Microsoft Word, the word processing program used to create it.

2. The undersigned further certifies that this paper complies with the typeface requirements of 37 C.F.R. § 42.6(a)(2)(ii) and typestyle requirements of 37 C.F.R. § 42.6(a)(2)(iii). This paper has been prepared in a proportionally spaced typeface using Microsoft Word in Times New Roman 14-point font.

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that the foregoing PATENT OWNER PRELIMINARY RESPONSE was served electronically via e-mail on December 26, 2023, in its entirety on the following:

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