Case IPR2016-01412
Patent No. 9,034,376
Petition for *Inter Partes* Review
Attorney Docket No. AMNEAL 7.1R-002

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

AMNEAL PHARMACEUTICALS LLC
Petitioner

v.

PURDUE PHARMA L.P.,
THE P.F. LABORATORIES, INC., and
PURDUE PHARMACEUTICALS L.P.
Patent Owners

Patent No. 9,034,376 to Wright *et al.*
Issue Date: May 19, 2015
Title: PHARMACEUTICAL FORMULATION CONTAINING GELLING AGENT

Inter Partes Review No. IPR2016-01412

PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 9,034,376

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PETITIONER'S EXHIBIT LIST

Exhibit #	Reference
1001	U.S. Patent No. 9,034,376 ("the '376 Patent")
1002	Complaint, *Purdue Pharma L.P. et al. v. Amneal Pharmaceuticals LLC*, 15-cv-831, filed Sept. 17, 2015
1003	Complaint, *Purdue Pharma L.P. et al. v. Amneal Pharmaceuticals LLC*, 15-cv-1152, filed Dec. 15, 2015
1004	U.S. Patent No. 8,337,888 ("the '888 Patent)
1005	*Purdue Pharma L.P. et al. v. Amneal Pharmaceuticals LLC*, No. 13-cv-3372 (S.D.N.Y. Apr. 8, 2015) Finding of Facts and Conclusion of Law ("SDNY Decision")
1006	*Purdue Pharma L.P. et al. v. Amneal Pharmaceuticals LLC*, No. 2015-1654 (Fed. Cir. Apr. 8, 2016) Order ("Federal Circuit Decision")
1007	Declaration of Dr. Anthony Palmieri ("Palmieri Declaration")
1008	*Curriculum Vitae* of Anthony Palmieri, Ph.D
1009	U.S. Patent No. 5,508,042 ("Oshlack")
1010	U.S. Patent No. 4,070,494 ("Hoffmeister")
1011	International Publication No. WO 99/32120 ("Palermo")
1012	*The Handbook of Pharmaceutical Excipients* 399-400, 655 (3rd ed. 2000)
1013	U.S. Provisional Patent Application No. 60/287,509 ("Joshi Provisional")
1014	U.S. Patent Publication No. 2002/0187192 ("Joshi")
1015	International Publication No. WO 95/20947 ("Bastin")
1016	OxyContin, *Physicians' Desk Reference* 2569-74 (53rd ed. 1999) ("PDR")
1017	*Purdue Pharma L.P. et al. v. Amneal Pharmaceuticals LLC*, Nos. 2014-1306, 1307 (Fed. Cir. Feb. 1, 2016)
1018	Department of Justice, *Information Bulletin*: *OxyContin Diversion and Abuse* (Jan. 2001)
1019	Barry Meier, *U.S. Asks Painkiller Maker To Help Curb Wide Abuse*, The New York Times (May 1, 2001)

Exhibit #	Reference
1020	Brief of Plaintiffs-Appellants in *Purdue Pharma L.P. et al. v. Amneal Pharmaceuticals LLC*, No. 2015-1654 (Fed. Cir. Aug. 12, 2015)
1021	Reply Brief of Plaintiffs-Appellants in *Purdue Pharma L.P. et al. v. Amneal Pharmaceuticals LLC*, No. 2015-1654 (Fed. Cir. Dec. 23, 2015)
1022	U.S. Patent No. 5,273,758 ("Royce")
1023	Serial No. 13/349,449, Originally Filed Specification, Jan. 12, 2012
1024	International Publication No. WO 97/49384 ("McGinity")
1025	Serial No. 10/214,412, Originally Filed Specification, Aug. 6, 2002
1026	U.S. Provisional Patent Application No. 60/310,534
1027	Serial No. 14/460,134, Preliminary Amendment, Aug. 14, 2014
1028	Serial No. 14/460,134, Office Action, Oct. 2, 2014
1029	Serial No. 14/460,134, Amendment and Response, Jan. 2, 2015
1030	Serial No. 14/460,134, Notice of Allowance, Mar. 23, 2015
1031	Serial No. 14/460,134, Request for Continued Examination, Apr. 9, 2015
1032	Serial No. 14/460,134, Second Notice of Allowance, Apr. 17, 2015
1033	*Oral Dosage Forms*, II (94) Remington: The Science and Practice of Pharmacy 1666-69 (19th ed. 1995)
1034	CRC Handbook of Chemistry and Physics F-56 (59th ed. 1978)
1035	*Opioid bill passes, but there's little money to act on its wish list*, Politics & Government (July 13, 2016), *available at* http://www.newsobserver.com/news/politics-government/article89403007.html (last visited July 14, 2016)
1036	U.S. Patent No. 5,283,065 ("Doyon")
1037	U.S. Patent No.4,861,598 ("Oshlack II")

Pursuant to 35 U.S.C. §§ 311-319 and 37 C.F.R. § 42, Amneal Pharmaceuticals LLC ("Amneal" or "Petitioner") petitions for *Inter Partes* Review ("IPR") seeking cancellation of claims 1-13 and 16-19 of U.S. Patent No. 9,034,376 ("the '376 Patent") (Ex.1001).

I. MANDATORY NOTICES (37 C.F.R. § 42.8(a)(1))

A. Notice Of Each Real Party-In-Interest (37 C.F.R. § 42.8(b)(1))

The real party-in-interest for Petitioner is Amneal Pharmaceuticals LLC.

The '376 Patent is assigned on its face to Purdue Pharma L.P., The P.F. Laboratories, Inc., and Purdue Pharmaceuticals L.P. (collectively "Purdue" or "Patent Owners").

B. Notice of Related Matters (37 C.F.R. § 42.8(b)(2))

Purdue has asserted the '376 Patent against Amneal in two civil actions pending in the United States District Court for the District of Delaware captioned *Purdue Pharma L.P. et al. v. Amneal Pharmaceuticals LLC*, 15-831, filed September 17, 2015 (Ex.1002) and *Purdue Pharma L.P. et al. v. Amneal Pharmaceuticals LLC*, 15-1152, filed December 15, 2015 (Ex.1003). This petition is timely filed under 35 U.S.C. § 315(b).

Claims of U.S. Patent No. 8,337,888 ("the '888 Patent") (Ex.1004), the great-grandparent to the '376 Patent through a string of continuations, were asserted against Amneal and were held invalid in a district court proceeding in the

Southern District of New York captioned *Purdue Pharma L.P. et al. v. Amneal Pharmaceuticals LLC*, No. 13-3372 ("the SDNY Litigation") (Ex.1005). The Federal Circuit upheld the invalidity of those claims on April 8, 2016. (Ex.1006.)

Petitioner has also filed a second IPR bearing case number IPR2016-01413 seeking cancellation of these same claims on other grounds. Petitioner previously filed IPR Nos. IPR2016-01027 and IPR2016-01028 seeking cancellation of claim 1 of U.S. Patent No. 9,060,976, which is another member of this patent family.

C. Designation Of Lead And Backup Counsel (37 C.F.R. § 42.8(b)(3))

Lead Counsel:	**Backup Counsel:**
Tedd W. Van Buskirk (Reg. No. 46,282) tvanbuskirk@lernerdavid.com litigation@lernerdavid.com Postal and Hand-Delivery Address 600 South Avenue West Westfield, NJ 07090 Telephone: 908.654.5000 Fax: 908.654.7866	Nichole M. Valeyko (Reg. No. 55,832) nvaleyko@lernerdavid.com litigation@lernerdavid.com Postal and Hand-Delivery Address 600 South Avenue West Westfield, NJ 07090 Telephone: 908.654.5000 Fax: 908.654.7866

D. Notice Of Service Information (37 C.F.R. § 42.8(b)(4))

Please address all correspondence to the lead and backup counsel at the address shown above. Petitioner consents to electronic service by e-mail at the above-listed e-mail addresses.

E. Grounds For Standing (37 C.F.R. § 42.104(a))

Petitioner certifies that (1) the '376 Patent is available for IPR and (2) Petitioner is not barred or estopped from requesting IPR of the '376 Patent on

the grounds identified herein. The fee for this petition has been paid. The Office is hereby authorized to charge any fee deficiencies, or credit any overpayments, to Deposit Account No. 12-1095 in connection with this petition.

II. STATEMENT OF PRECISE RELIEF REQUESTED (37 C.F.R. § 42.22(a))

The information presented establishes a reasonable likelihood that Amneal will prevail with respect to at least one of the claims challenged in this petition. Accordingly, Petitioner requests institution of an IPR and cancellation of claims 1-13 and 16-19 of the '376 Patent. The text of the challenged claims is included in the claim charts herein.

III. IDENTIFICATION OF THE CHALLENGE (37 C.F.R. § 104(b))

IPR of claims 1-13 and 16-19 of the '376 Patent is requested on the separate grounds for unpatentability listed below. Pursuant to 37 C.F.R. § 42.6(d), a copy of each of the references is filed herewith. This petition is accompanied by the declaration and *Curriculum Vitae* of Anthony Palmieri III, Ph.D. (Exs.1007-1008), setting forth his definition of a person of ordinary skill in the art ("POSA") and explaining what the art would have conveyed to the POSA. Dr. Palmieri is an expert in the fields of pharmaceutics, dosage form design, sustained release delivery systems, and dissolution, among others. (Ex.1007 ¶¶3-13.)

References	Basis
Ground 1 — Palermo (Ex.1011) in view of Joshi (Ex.1014) and The Handbook of Pharmaceutical Excipients (Ex.1012)	§ 103
Ground 2 — Oshlack (Ex.1009) in view of Joshi (Ex.1014), The Handbook of Pharmaceutical Excipients (Ex.1012), and Doyon (Ex.1036)	§ 103

In Ground 1, Petitioner shows that the challenged claims of the '376 Patent are unpatentable over International Publication No. WO 99/32120 to Palermo *et al*. ("Palermo") (Ex.1011), in view of U.S. Patent Publication No. 2002/0187192 to Joshi *et al*. ("Joshi") (Ex.1014) and the *Handbook of Pharmaceutical Excipients* ("the Handbook") (Ex.1012). Palermo teaches abuse deterrent, sustained release dosage forms of oxycodone using a sustained release polymeric matrix, having polymers providing both controlled release and meltability. Hydroxypropylmethylcellulose ("HPMC") is identified as a preferred polymer. Palermo recognizes that the abuse deterrent properties of its formulations can be improved by adding a gelling agent providing both motivation and an expectation of success. And Joshi teaches that polyethylene oxide ("PEO") is a gelling agent

known to impart those properties. The Handbook confirms that PEO is useful for sustained release and is meltable, making PEO a logical choice to a POSA. (Ex.1007 ¶63.)

In Ground 2, Petitioner shows that the challenged claims are unpatentable over U.S. Patent No. 5,508,042 to Oshlack *et al*. ("Oshlack") (Ex.1009), in view of Joshi, the Handbook, and U.S. Patent No. 5,283,065 to Doyon *et al*. ("Doyon"). Oshlack teaches an oral controlled release matrix that can be composed of a hydroxyalkylcellulose, which can be HPMC, and 1-500mg of oxycodone hydrochloride (Ex.1009, at 5:19-67) having a therapeutic effect for at least 12 hours. (*Id.* 15:7-18.) And the courts have found motive to seek abuse deterrent technology as discussed below.

Joshi identifies PEO as a preferred gelling agent for impeding those trying to extract and inject or inhale a drug — the abuse that is the concern of the '376 Patent. (Ex.1014 ¶¶[0008], [0009], [0021], [0022].) And a POSA would know from their general knowledge, as exemplified by the Handbook, that PEO has controlled release properties, making PEO an ideal candidate to impart abuse deterrent properties to Oshlack. Doyon teaches that film coatings are conventional on controlled release tablets. (Ex.1036, at 6:11-15.)

The challenged claims are, for all intents and purposes, the same as the claims of the '888 Patent that were found invalid in the SDNY Litigation. The only meaningful difference is the addition of HPMC as a second gelling agent. But HPMC was well known for controlled release and abuse deterrence. Adding a second known element to do exactly what it was known to do cannot render patentable an otherwise unpatentable formulation.

Moreover, the motivation to seek out abuse deterrent technology has already been established. As Judge Stein observed, "the Oxycontin abuse crisis — which was publicly known by early 2001 — provided motivation to produce an abuse-deterrent oxycodone formulation. In particular, persons of skill in the art would have been motivated to invent controlled release oxycodone tablets that resist injection, snorting, and oral ingestion, the known methods of abuse." (Ex.1005, at 51-52.)

IV. BACKGROUND

A. Oxycodone Abuse

Oxycodone hydrochloride is a very well-known opioid analgesic that was developed in 1917. (Ex.1007 ¶14.) As of 1999, the *Physicians' Desk Reference* ("PDR") listed 18 different formulations of oxycodone hydrochloride tablets, capsules, caplets, and oral solutions. (Exs.1016, at 126; 1007 ¶14.) Original OxyContin®, Purdue's oral, controlled-release oxycodone, was approved in 1995

and originally available as 10, 20, 40, and 80mg tablets. (Exs.1018, at 2; 1007 ¶14.) A 160mg tablet was released in 2000. (Exs.1018, at 2; 1007 ¶14.) OxyContin, unlike other short acting formulations, such as Percocet®, acted for 12 hours. (Exs.1018, at 2; 1007 ¶14.) As immediate release oxycodone formulations included only 5mg of oxycodone or less, and one controlled-release OxyContin contained as much as 160mg, OxyContin became an extremely attractive choice for "both abusers and legitimate users." (Exs.1018, at 2; 1007 ¶14.)

By 2001, OxyContin abuse was becoming a nationwide concern, (*see* Exs.1018, at 2; 1019, at 1-2; 1007 ¶15) and existing oxycodone controlled release tablets could be circumvented making the full dose immediately available (*see* Exs.1018, at 2; 1019, at 1-2; 1007 ¶15).

The '376 Patent describes using gelling agents to prevent traditional methods of abuse while, at the same time, providing controlled release of the drug if not abused. When tampered with, the gelling agent will gel and thicken liquid it is exposed to — either by dissolution for intravenous injection or in an abuser's nasal passages if snorted. When taken orally and used properly, these dosage forms will slowly release the drug in the digestive tract. (Ex.1007 ¶16.)

But sustained release oxycodone formulations were in fact already known in the prior art, including Purdue's original formulation of OxyContin®. (Exs.1016,

at 2569; 1007 ¶16.) Abuse resistant formulations for oxycodone were known as well. (1007 ¶16.) And PEO and HPMC were well known as matrix materials providing both controlled release and/or abuse deterrence. (*Id.* ¶¶17-19.)

Purdue did nothing more than combine well-known elements of the prior art in an entirely obvious manner. Indeed, the Federal Circuit has already upheld the obviousness of using PEO as a gelling agent to provide controlled release and abuse deterrence. Merely adding HPMC does nothing to change the outcome — adding a second gelling agent with the same known properties to take advantage of those known properties cannot impact patentability.

B. The SDNY Litigation And Federal Circuit Affirmance

In 2013, Purdue asserted the ’888 Patent, the great-grandparent of the ’376 Patent, against, *inter alia*, Petitioner Amneal in the SDNY Litigation. After a five-day bench trial, Judge Stein invalidated all of the asserted claims. (Ex.1005, at 51-55.) That decision was affirmed by the Federal Circuit only three days after oral argument. (Ex.1006.)

The district court found that the prior art (including Joshi (Ex.1014), Hoffmeister (Ex.1010), McGinity (Ex.1024), and Royce (Ex.1022)) taught the use of gelling agents to deter abuse (Ex.1005, at 41-43) and provide controlled release (*id.* 43-45). Specifically, the court held “[s]everal prior art patents or patent

applications teach that gelling agents reduce the abuse potential of pharmaceutical formulations." (*Id.* 41.)

The court also found that "[s]everal prior art references teach that PEO has rate controlling properties that may be employed in sustained release dosage forms." (*Id*. 43.) The court ultimately held that it was obvious to apply this solution to the problem of oxycodone abuse. (*Id*. 45-47, 52-53.)

As the following chart reveals, claims 1 of both the '888 and '376 Patents are virtually identical.[1]

US 9,034,376	**US 8,337,888**
1.A controlled release oral solid dosage form comprising: **a controlled release matrix** comprising a mixture of	1.A controlled release oral dosage form comprising:
(i) from 2.5mg to 320mg oxycodone or a pharmaceutically acceptable salt thereof; and	from about 2.5mg to about 320mg oxycodone or a pharmaceutically acceptable salt thereof; and
(ii) a gelling agent comprising polyethylene oxide and	a gelling agent comprising polyethylene oxide

[1]Claim 1 of the '888 Patent was not asserted in the SDNY Litigation. But the additional limitations found in the asserted claims (5, 6, 23, 24) that depend from claim 1 are analogous to those found in dependent claims of the '376 Patent (8, 9, 12, 13).

US 9,034,376	**US 8,337,888**
<u>hydroxypropylmethylcellulose</u>,	
the gelling agent in an effective amount to impart a viscosity of at least 10cP when the dosage form is subjected to tampering by dissolution in from 0.5 to 10ml of an aqueous liquid;	in an effective amount to impart a viscosity of at least about 10cP when the dosage form is subjected to tampering by dissolution in from about 0.5 to about 10ml of an aqueous liquid;
the controlled release matrix providing a therapeutic effect for at least 12 hours when orally administered to a human patient.	the dosage form providing a therapeutic effect for at least about 12 hours when orally administered to a human patient.

But for reciting a "matrix" and the addition of a second, well-known polymer gelling agent (HPMC) having recognized controlled release and abuse deterrence properties, used by Purdue to take advantage of those known properties, these claims are effectively the same. Merely adding HPMC to the invalidated claims of the '888 Patent cannot alter the outcome of the SDNY Litigation.

In the SDNY Litigation, and in particular during its appeal, Purdue argued that one reference, Bastin (Ex.1015), taught that using a gelling agent for controlling release would destroy its abuse deterrence (Exs.1020, at 8, 21-22, 30, 38, 40-41; 1021, at 2, 9-12, 20, 23). But its position was a serious overreach — one not accepted by the SDNY (Ex.1005, at 46-47), or the Federal Circuit (Ex.1006).

Indeed, as the court found, a POSA would see Bastin as an encouragement or affirmation, not a teaching away. (Ex.1007 ¶25)

Any assertion of teaching away based on Bastin would be particularly inappropriate here since Palermo (Ex.1022), the primary reference, already discloses a controlled release formulation produced from a matrix of drugs and polymers known to provide controlled release and abuse deterrence. And Palermo suggests the further addition of a gelling agent. One cannot credibly use Bastin to argue that a POSA would not combine a drug with a gelling agent providing controlled release for fear of compromise of its abuse deterrence when: (1) Palermo already expressly teaches mixing the drug with a sustained release polymer; and (2) Palermo invited and encouraged using an additional gelling agent to further improve abuse deterrence. Bastin cannot teach a POSA not to do something that the art was in fact already doing. (Ex.1007 ¶26.)

V. THE '376 PATENT

A. The Family History Of The '376 Patent

The '376 Patent issued on May 19, 2015, from U.S. Application Ser. No. 14/460,134 filed on August 14, 2014. (Ex.1001.) The '376 Patent states on its face that it is a continuation of several earlier family members, including the '888 Patent (Ex.1004). All of these prior family members also claim the benefit of U.S. Provisional Application No. 60/310,534, filed August 6, 2001 ("the

Provisional Application"). (Ex.1026.) Accordingly, the earliest possible effective filing date for the '376 Patent is August 6, 2001.

B. The Specification Of The '376 Patent

The specification of the '376 Patent discloses several sustained release oral dosage form strategies for delivering a drug susceptible to abuse along with known pharmaceutically acceptable excipients and a gelling agent capable of imparting sustained release. In some embodiments, an abuser seeking to circumvent the sustained release features to achieve an immediate "high" by dissolving a tablet in a liquid to be injected intravenously was thwarted by the gelling action of a polymer that caused the drug-containing liquid to thicken so it couldn't be injected through a needle. (Ex.1001, at 3:9-22.) If the abuser seeks to crush the tablet and snort the crushed powder nasally, the gelling agent will mix with mucous and thicken in the nasal passages, thereby defeating that route of administration. (*Id*. 3:28-39.) In other embodiments, an aversive agent used caused a bitter flavor or irritation. (*Id*. 2:52-67.) The specification lists PEO and HPMC as gelling agents but never discusses their use together. Other pertinent aspects are discussed in the context of claim construction.

C. The Pertinent Prosecution History Of The '376 Patent

The prosecution history for the '376 Patent is rather brief. The application was filed with a preliminary amendment that canceled original claims 1-40 and

added new claims 41-70. Independent claim 41 (which ultimately issued as claim 1) required a gelling agent that includes PEO and HPMC and imparts a viscosity of at least 10cp when the dosage form is subjected to tampering by dissolution in an aqueous liquid. (Ex.1027, at 3.)

The Examiner issued a nonfinal office action on October 2, 2014, which rejected all of claims 41-70, for lack of written description (Ex.1028, at 4), and as obvious over WO93/10765 to Oshlack, US 2003/0054027 to Unger, and US 6,245,357 to Edgren (*id*. 5.)

Applicants responded by canceling claims 56-61, amending claims 41-44 and 62-70, and adding new claims 71-74. (Ex.1029, at 7.) The only pertinent revisions were the addition of a requirement that the dosage form be "solid" and that the mixture of oxycodone and the gelling agent be in the form of a "controlled release matrix." New claims 71, 73, and 74 correspond to allowed claims 16, 18, and 19, and exclude a semipermeable wall.

Applicants argued that Unger does not teach a solid oral dosage form and only teaches a delivery system for delivering opioid peptides in a controlled-release manner, thus a POSA would not be motivated to combine with Oshlack or Edgren. (*Id*. 8-13.) Applicants also argued that Edgren is directed to a dosage form that includes a semipermeable wall and thus does not read upon the

"controlled release matrix" of the amended claims. (*Id*. 11.) Applicants also argued that since Oshlack did not teach a viscosity of 10cp, the Examiner did not establish a *prima facie* case of obviousness. (*Id*. 13.)

The Examiner issued a Notice of Allowability on March 23, 2015. (Ex.1030.) The Examiner stated:

> The prior art does not teach or suggest the claimed invention as a controlled release solid dosage form comprising a drug susceptible for abuse (*here as oxycodone*) that comprises a gelling agent as a combination of *polyethylene oxide* and *hydroxypropyl methylcellulose* to impart a viscosity unsuitable for injections or nasal administrations when the dosage form is subjected to tampering by dissolution and to provide a therapeutic effect of 12 hours when said dosage form is orally administered to a human patient.

(*Id*. 4-5.)

Purdue paid the issue fee on March 26, 2015, followed by a petition to withdraw the application from issue. Purdue submitted an RCE and IDS (Ex.1031) to identify the SDNY Decision (Ex.1005) holding invalid the asserted claims of the '888 Patent. Despite this submission, the PTO issued a second Notice of Allowability. (Ex.1032.) The second Notice of Allowability included an Examiner Initiated Interview Summary detailing the Examiner's opinion on why the SDNY Decision was not applicable to the allowed claims. The Examiner did not comment on the references asserted herein, only mentioning two references

specifically: Hoffmeister and Shaw. The Examiner opined that the prior art "does not teach or suggest employing a gelling agent comprising a combination of PEO and HPMC to impart a viscosity of at least 10cP." (Ex.1032, at 4.)

The allowance came long before the Federal Circuit's affirmance of the SDNY Decision. Petitioner respectfully submits that the Examiner's opinion cannot be squared with the art and combinations discussed herein.

Purdue paid the issue fee on April 29, 2105, and the '376 Patent issued on May 19, 2015. (Ex.1001.)

VI. PERSON OF SKILL IN THE ART

Factors relevant to determining the level of skill in the art include: the educational level of the inventors, the types of problems encountered in the art, prior art solutions to those problems, the rapidity with which innovations are made, the sophistication of the technology, and the educational level of active workers in the field. *Mintz v. Dietz & Watson, Inc.*, 679 F.3d 1373, 1376 (Fed. Cir. 2012).

As explained in the Palmieri Declaration, a POSA has a degree in one or more fields of medicine, chemical engineering, chemistry, pharmaceutical science, polymer chemistry, pharmaceutics, pharmaceutical technology, pharmacokinetics, and/or pharmacology, and/or a number of years of industry training or experience in one or more of those fields. (Ex.1007 ¶¶31-34.) Dr. Palmieri bases this opinion on his own knowledge, experience, and reading in the fields of pharmaceutical

science, his teaching of students and graduate students, his interaction with those practicing drug product formulation, and on the fact that this definition was stipulated to by the parties in the SDNY Litigation and as used by Judge Stein in his opinion holding invalid the asserted claims of the '888 Patent. (Exs.1005, at 14, 40; 1007 ¶34.)

VII. CLAIM CONSTRUCTION[2]

In IPR, a claim term is given its "broadest reasonable construction in light of the specification." 37 C.F.R. § 42.100(b); *see also Cuozzo Speed Techs., LLC v. Lee*, 579 U.S. ___ (2016).

A. "Gelling Agent In An Effective Amount To Impart A Viscosity"

Claim 1 recites "gelling agent in an effective amount to impart a viscosity of at least 10cp," claim 18 recites "gelling agent in an effective amount to impart a viscosity unsuitable for parenteral administration," and claim 19 recites "gelling agent in an effective amount to impart a viscosity unsuitable to pull into an insulin syringe." (Ex.1001 cls.1, 18, 19.) The specification does not define what constitutes an "effective amount." But whether defined numerically (cl.1) or functionally (cls.18, 19) all address the same thing in the context of the

[2]None of the claim terms discussed herein was the subject of the court's interpretation in the SDNY Litigation.

specification — the amount needed to provide a viscosity that would provide abuse deterrence. (Ex.1007 ¶¶36-37.)

The broadest reasonable interpretation of "an effective amount to impart a viscosity of at least 10cp" is including enough gelling agent to impart a viscosity of at least 10cp. It is noted that 10cp is the minimum amount of viscosity and there is no upper end to the range. In the context of the claimed invention, 10cp must be considered viscous enough to provide abuse deterrence to one who tampers with the dosage form and dissolves it in up to 10ml of an aqueous liquid, reducing the chance that it will be injected or inhaled. (Ex.1007 ¶38.)

Independent claim 18 requires "a viscosity unsuitable for parenteral administration," and claim 19 requires "an effective amount to impart a viscosity unsuitable to pull into an insulin syringe." Both mean, albeit recited functionally, at least 10cp. Accordingly to the specification, "parenterally" means "injections." (Ex.1001, at 5:6-9.) The term "unsuitable" is not expressly defined by the specification. However, the term "unsuitable for injection" is defined as "to mean that one would have substantial difficulty injecting the dosage form (e.g., due to pain upon administration or difficulty pushing the dosage form through a syringe) due to the viscosity imparted on the dosage form, thereby reducing the potential for abuse of the opioid analgesic from the dosage form." (*Id*. 3:15-20.) "Unsuitable for

injection" does not require injections be "impossible," merely that it presents difficulty. (Ex.1007 ¶¶39-40.)

The specification also demonstrates that a viscosity of between 10-60cp is considered "thick" and hard to pull into a syringe. (*Id.* 32:8-24, Table 3.) Thus the specification teaches that a viscosity of at least 10cp is difficult to pull into a syringe or administered parenterally and thus the broadest reasonable interpretation of "unsuitable for parenteral administration" and "unsuitable to pull into an insulin syringe" is a gelling agent that imparts a viscosity of at least 10cp. (Ex.1007 ¶41.)

B. "Subjected To Tampering"

Claims 1-6, 9, 12, 13, and 18-19 recite "subjected to tampering." The term "subjected to tampering" is not explicitly defined in the specification. However, the term "tampered dosage form" is defined as "the dosage form has been manipulated by mechanical, thermal, and/or chemical means which changes the physical properties of the dosage form...The tampering can be, e.g., by means of crushing, shearing, grinding, chewing, dissolution in a solvent, heating, (e.g., greater than about 45°C.), or any combination thereof." (Exs.1001, at 4:18-28, 1007 ¶42.)

Based on the specification and language of the claims, the broadest reasonable interpretation of "subject to tampering" is that the dosage form is that

the physical properties of the dosage form are changed by mechanical, thermal, and/or chemical means to speed release of the active ingredient. (Ex.1007 ¶43.)

VIII. THERE IS A REASONABLE LIKELIHOOD THAT AT LEAST ONE CLAIM OF THE '376 PATENT IS UNPATENTABLE

Claims 1-13 and 16-19 of the '376 Patent are invalid as obvious over (a) Palermo (Ex.1011) in view of Joshi (Ex.1014) and the *Handbook* (Ex.1012); and (b) Oshlack (Ex.1009) in view of Joshi (Ex.1014), the *Handbook* (Ex.1012), and Doyon (Ex.1036).

The obviousness inquiry is one of law based on four factual predicates: (1) "the scope and content of the prior art," (2) "[the] differences between the prior art and the claims at issue," (3) "the level of ordinary skill in the pertinent art," and (4) "secondary considerations" such as "commercial success, long felt but unsolved needs, failure of others, etc." *KSR Int'l Co. v. Teleflex Inc.,* 550 U.S. 398, 406 (2007) (citing *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966)); 35 U.S.C. § 103(a). *KSR* reaffirmed that "[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." *KSR*, 550 U.S. at 416. The Supreme Court also instructed that "any need or problem known in the field of endeavor at the time of [the] invention and addressed by the patent can provide a reason for combining the elements in the manner claimed." *Id.* at 420. "Common sense teaches, however,

that familiar items may have obvious uses beyond their primary purposes, and in many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle." *Id.* Finally, the Court held that "[w]hen there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill [in the art] has good reason to pursue the known options within his or her technical grasp." *Id.* at 421. A "[m]otivation to combine may be found in many different places and forms." *Par Pharm., Inc. v. TWi Pharms., Inc.*, 773 F.3d 1186, 1197 (Fed. Cir. 2014). A challenger is not limited to the same motivation that the patentee had. *See id.* (citing *Alcon Research, Ltd. v. Apotex Inc.*, 687 F.3d 1362, 1369 (Fed. Cir. 2012)).

Secondary considerations, which in any event are Patent Owner's burden, weigh against any finding of obviousness, especially here where the Patent Owner has admitted that the '376 Patent does not cover its commercial products.

A. Ground 1: Claims 1-13 And 16-19 Are Obvious Over Palermo (Ex.1011) In View Of Joshi (Ex.1014) And *The Handbook* (Ex.1012)

Palermo was published July 1, 1999, and qualifies as prior art to the '376 Patent under 35 U.S.C. § 102(b). (Ex.1011.) Palermo was of record and is cited in the background of the application but was never discussed in connection with these claims.

Joshi published on December 12, 2002 (Ex.1014), and claims priority to a provisional application (US 60/287,509) filed on April 30, 2001 ("Joshi Provisional") (Ex.1013). Purdue previously acknowledged that Joshi and the Joshi Provisional are "largely identical" (Ex.1020, at 23), and Dr. Palmieri confirms same (Ex.1007 ¶52). Joshi qualifies as prior art under 35 U.S.C. § 102(e). Purdue did not argue to the contrary in the SDNY Litigation (*see* Ex.1005, at 42) or on appeal. Joshi was not of record.

The *Handbook of Pharmaceutical Excipients*, 3rd edition, was published on November 22, 1999, and registered at the Library of Congress on January 31, 2000 ("*Handbook*") (Ex.1012). It is therefore prior art to the '376 Patent under 35 U.S.C. § 102(b). The *Handbook* was not of record and never discussed in connection with these claims.

1. <u>The Scope And Content Of The Prior Art</u>

Palermo teaches a controlled release matrix preventing abuse of sustained release dosage forms of opioids. (Exs.1011 Title, 8:1-2; 1007 ¶¶48, 74.) Oxycodone and its pharmaceutically acceptable salts are among the preferred opioids disclosed. (Exs.1011, at 7:5-6, 13:14-30; 1007 ¶¶48, 74.) Oxycodone can be used in, for example, a range of 2.5 to 800mg. (Exs.1011, at 20:28-30; 1007 ¶¶48, 74.) Palermo specifically exemplified 13.5mg of oxycodone per dose. (Ex.1011, at 14:5 (Table 1).) The dosage forms of Palermo can provide 12 hours or

more of controlled release. (Exs. 1011, at 21:18-25; *see also* 33:18-20; 1007 ¶¶48, 74.)

Palermo's controlled release matrix employs "[h]ydrophilic and/or hydrophobic materials" such as cellulose ethers and "any pharmaceutically acceptable hydrophobic material or hydrophilic material which is capable of imparting controlled release of the active agent and which melts (or softens to the extent necessary to be extruded)." (Ex.1011, at 28:19-23.) Hydroxyalkylcelluloses are identified as preferred cellulose ethers (*id*. 28:27-30), and HPMC is a preferred hydroxyalkylcellulose (Exs.1011 30:13-17 ("The at least one hydroxyalkyl cellulose is...hydroxypropylmethylcellulose...."); 1007 ¶75).

While the dosage forms of Palermo result in both abuse deterrence and controlled release (*id.* 6:1-7, 8:1-4), Palermo recognizes that further improvements in abuse deterrence can result from adding a gelling agent (*id.* 6:20-7:1, 40:7-10 ("the addition of a gelling agent or other excipients could make [extracting drug] even more difficult."); Ex.1007 ¶76).

Palermo teaches that its matrix may be film coated for protection or to regulate the release of materials. (Exs.1011, at 18:3-5, 21:8-11, 21:18-22:17, 22:6-17, 27:13-15, 1007 ¶77.) Therefore, in addition to the motivation already recognized judicially (Ex.1005, at 29, 51-52), with Palermo's express teaching that

inclusion of a gelling agent may improve abuse deterrence, a POSA would be motivated to look for a suitable gelling agent and would take particular note of Joshi (Exs.1014; 1007 ¶78.)

Joshi (Ex.1014) is directed to a pharmaceutical composition that reduces or eliminates the drug abuse potential of central nervous stimulants, such as Ritalin®. (*Id.* Abstract.) Joshi teaches that drug abuse was recognized as a serious issue and that it was desirable to provide compositions that eliminate drug abuse without decreasing the effectiveness of the drug. (Exs.1014 ¶¶[0001], [0005], [0007]; 1007 ¶¶53, 80.) In making its case for the need for abuse resistance, Joshi cites to WO 97/33566, which describes an abuse-deterrent dosage form containing an opioid composition, suggesting a recognition of the desirability of abuse deterrent dosage forms for use with opioids. (Exs.1014 ¶[0006]; 1007 ¶¶53, 80.)

Joshi teaches that PEO is one of three preferred gel-forming polymers useful in reducing the nasal absorption and injectability of the drug — the very sort of abuse discussed in the ’376 Patent. (Exs.1014 ¶¶[0008], [0009], [0021]; 1007 ¶54.) The court made similar factual findings with regard to Joshi in a section of its opinion entitled, “*The prior art teaches that gelling agents reduce abuse potential*.” (*See* Ex.1005, at 41-43.) Joshi exemplifies ratios of gelling agent to drug of from about 4:1 to about 1:3.34. (Exs.1014 ¶¶[0036], [0038], [0040]

(Examples 1-3); 1007 ¶¶54, 81.) Joshi also teaches that gelling agents can be used in amounts of 2-40% and in molecular weights of from 20,000 to 2,000,000 (Exs.1014 ¶¶[0022], [0023]; 1007 ¶81.) And, in testing the ability of the formulations to gel to establish abuse deterrence, Joshi crushed the tablets of Examples 1-3, placed them in 1ml of water, and stirred for one minute. In each case, "[g]el formation occurs." (Exs.1014 ¶¶[0042]-[0044]; 1007 ¶81.)

Palermo teaches that its formulations can be prepared according to the techniques found in U.S. Patent No. 4,861,598 (Ex.1037), which teaches the use of stearyl alcohol at a temperature of 60-70°C. And, the *Handbook* identifies the "typical" melting point for PEO as being between 65 and 70°C, which a POSA would recognize is suitable for melt extrusion processes. (Exs.1012, at 399; 1007 ¶83.) A POSA would appreciate that PEO is meltable and may be used in the matrix formulation techniques taught in Palermo. (Ex.1007 ¶83.) The *Handbook* (Ex.1012) exemplifies the well-established knowledge of POSAs regarding the properties of, *inter alia,* PEO and HPMC, including the fact that they were gelling agents, had controlled release properties, and that by adjusting the amount and grade of each polymer one could obtain a wide range of viscosities fully encompassing the ranges claimed. (Exs.1012, at 252-55, 399-400; 1007 ¶83.)

Thus, PEO was a known gelling agent taught to be particularly useful in providing abuse deterrence (Exs.1014 ¶[0021]; 1007 ¶84) and meets all of Palermo's criteria for a matrix polymer (Exs.1011, at 28:19-24; 1007 ¶84). PEO would therefore be a very logical, if not the ideal, choice for a POSA to include in Palermo to improve its abuse deterrence. (Ex.1007 ¶¶84-85.)

2. The Differences Between The Claimed Invention And The Prior Art

As further established in Claim Chart 1 below, there are few differences — and none that is meaningful — between the combination of Palermo, Joshi, and the *Handbook*, and claims 1-13 and 16-19 of the '376 Patent. Independent claims 1, 18, and 19 require a controlled-release oral dosage form including a controlled-release matrix comprising a mixture of oxycodone or a pharmaceutically acceptable salt and a gelling agent comprising PEO and HPMC. Palermo discloses dosage forms that include a sustained-release, abuse-deterrent drug matrix, which can be made using HPMC mixed with oxycodone or its salts. Palermo does not specifically teach including PEO with HPMC. But, it specifically recognizes that abuse deterrent properties could be improved by adding "a further ingredient which makes separation of the opioid agonist from the opioid antagonist more difficult. Such further ingredients may include gelling agents..." (Exs. 1011, at 6:30-7:1, *see id*. 40:7-10; Ex.1007 ¶¶48, 86.)

Joshi (Ex.1014) not only identifies PEO as a gelling agent, it's one of three preferred gelling agents. Joshi teaches that using PEO provides not just abuse deterrence, but the same type of abuse that was referenced in the '376 Patent — reducing nasal absorption and injectability of abused dosage forms (Exs.1014 ¶¶[0008]-[0009], [0021]; 1007 ¶87). And PEO is meltable and useful in controlled release as well. (Exs.1012, at 399-400; 1007 ¶87.) Thus a POSA would see PEO as being completely consistent with Palermo's teaching and likely to provide the improved abuse deterrence predicted by Palermo, just as it did in Joshi. (Ex.1007 ¶87.) Palermo teaches a POSA to seek to improve its abuse deterrence and, in particular, the extractability of drug from a liquid, by including a gelling agent and from Joshi's teaching, PEO would be an ideal choice. (Ex.1007 ¶87.)

Even were it not for Palermo's teaching and motivation, courts looking at this issue recognized that there was a publicly known abuse crisis with oxycodone by early 2000 that would motivate a POSA to produce abuse deterrent controlled release formulations. (Exs.1005, at 51-52; 1007 ¶88.) "To fulfill this goal, persons of ordinary skill in the art would have turned first to prior art that addressed abuse-deterrent formulations." (*Id.*) As the court observed, this included Joshi. (*Id.*)

There is one other general difference between Palermo and the '376 Patent which is not specifically claimed but is worthy of comment. The primary form of

abuse deterrence described in Palermo is the use of an antagonist. That is not true for the '376 Patent. But the claims of the '376 Patent, as "comprising" claims, do not exclude the opioid antagonists of Palermo. The claims also do not require abuse deterrence be achieved by only one means. Further, Palermo teaches that the opioid agonist and opioid antagonist may be combined with a gelling agent to make separation of the agonist and antagonist more difficult. (Exs.1011, at 6:29-31; 1007 ¶79.) A POSA would understand this to teach making the independent extractability of the opioid more difficult, which is the objective of the '376 Patent as well, making the oxycodone more difficult to separate and inject.

a. Claims 1, 16, 18, And 19

Independent claims 1, 18, and 19 further require between about 2.5mg and about 320mg of oxycodone or a salt. Palermo teaches a range of from 2.5 to 800mg and it identified 13.5mg in Table 1. (Ex.1011, at 20:28-30, 14:5 Table 1.)

Claim 1 requires that the amount of gelling agent used be sufficient to provide a viscosity of at least 10cP when the dosage form is subject to tampering by dissolution in from 0.5 to 10ml of an aqueous liquid. Independent claim 18 functionally states that the amount of gelling agent will impart a viscosity that is unsuitable for parenteral administration under the same conditions. Independent claim 19 alters the theme requiring that the amount be unsuitable to pull into an insulin syringe. (Ex.1007 ¶90.)

Palermo does not specify the amount of gelling agent or the resulting viscosity. While Joshi specified that it tested gel formation by crushing tables to form a powder and adding the powder to 1ml of water and noted that they were successful (Exs.1014 ¶¶[0042]-[0044]; 1007 ¶91), Joshi does not explicitly disclose the resulting viscosity either.

But Joshi specifies that gelling agents may have a molecular weight ("MW") of 70,000-2,000,000, with a preferred range of 100,000-1,000,000. (Exs.1014 ¶[0022]; 1007 ¶92.) Joshi's gelling agents are present in an amount of about 2 to 40 weight percent. (Exs.1014 ¶[0023]; 1007 ¶92.)

A POSA would appreciate that the viscosity of solutions can vary with the amount of PEO and/or HPMC and their MW or grade. That understanding is best memorialized in the *Handbook*. (Ex.1012, at 254 Table II, 399 Tables I, II.) PEO is described in Table I as including WSR *N*-10 grade, which has an approximate MW of 100,000; WSR *N*-12K grade, which has an approximate MW of 1,000,000; and WSR *N*-60K grade, which has an approximate MW of 2,000,000. All of these grades of PEO fall within the ranges disclosed in Joshi. (Exs.1012, at 399, Table 1; 1014 ¶[0022]; 1007 ¶¶92-93.)

According to the *Handbook*'s entry for PEO in Table II, a 5% solution of WSR *N*-10 (100,000 MW) would have a viscosity of 30-50[3], while 2% solutions of WSR *N*-12K (1,000,000 MW) and WSR *N*-60K (2,000,000 MW) provided viscosities of 400-800cP and 2000 to 4000cP, respectively. (Exs.1012, at 399, Table II; 1007 ¶94.) So, the viscosity of a 2-5% solution of PEO as taught by Joshi, using PEO with a molecular weight of 100,000-2,000,000, also falling within Joshi, would provide viscosities falling within each of the viscosity ranges of claims 1, 18, and 19. (Ex.1007 ¶94.)

A POSA would know that a viscosity of 30-50cp, 400-800cP, and 2000-4000cP are greater than 10cP (cl.1) and the '376 Patent teaches that these viscosities would be unsuitable for parenteral administration (cl.18) and would be unsuitable to be pulled into an insulin syringe (cl.19), if dissolved in 1ml of an aqueous solution as Joshi did. (*See* PartVII.A above; Ex.1001, at 32:8-24, Table 3; Ex.1007 ¶94.) For comparative purposes, olive oil at 20°C has a viscosity of 84.0cP, several times lower than the lowest viscosity from a 2% solution of WSR *N*-12K, which is 400cP. (Exs.1034, at F-56; 1007 ¶94.) It would be difficult to inject olive oil and particularly something almost five times thicker. (Ex.1007

[3]The claims express viscosity in cP (centipoise) where the *Handbook* lists viscosity in mPa s (milli-Pascal seconds). However 1cP=1mPa s. (Ex.1007 ¶93 n.5.)

¶94.) Moreover, the functional terms used to define the amount of gelling agents has been interpreted herein as requiring a minimum viscosity of 10cp. Joshi clearly describes using a sufficient amount of a grade of gelling agent that would provide a viscosity of more than 10cp.

Even if that were not the case, the teaching to a POSA of Table II of the *Handbook* is that by adjusting the MW and amount of PEO, it is possible to obtain a wide range of viscosities. As Dr. Palmieri explains, it is possible to obtain a viscosity range of 4000cP using a 5% solution of WSR N3000 or WSR 205 (MW of 400,000 and 600,000, respectively), a 2% solution of WSR N-60K (MW 2,000,000), or a 1% solution of WSR 301 (MW 4,000,000). (*Id.* ¶95.) Thus, it would be obvious to a POSA that virtually any of the claimed viscosities, whether expressed numerically or functionally, could be obtained by routine experimentation.

And the *Handbook*'s entry for HPMC provides similar information teaching that, depending upon the amount and the grade used, a wide range of viscosities can be obtained from about 2cP to as much as 120,000cP. (Exs.1012, at 252, 254, Table II; 1007 ¶96.) So a POSA would understand that they could also impact viscosity and abuse deterrence by adjusting the grade or amount of HPMC used in Palermo or Joshi. (Ex.1007 ¶96.) It would be routine to make adjustments in the

selection of the amount and grades of PEO and HPMC used so as to adjust the viscosity over a wide range to provide a viscosity that is optimum to deter abuse while providing acceptable controlled release. (*Id.* ¶97.) Again, this is true whether the viscosity range is reported numerically (cl.1) or functionally (cls.18, 19).

Claims 18 and 19 (as well as claim 16, which depends directly from claim 1) contain a further negative limitation; namely, that the dosage form not include a semipermeable wall. A POSA would understand this requirement to preclude the dosage form from being an osmotic device. (*See* Exs.1001, at 24:43-45 ("Osmotic Dosage Forms" describing "a substantially homogenous core...surrounded by a semipermeable wall having a passageway"); 1007 ¶98.) None of the references used in Ground 1 describe dosage forms including a semipermeable wall. (Ex.1007 ¶98.)

It would be obvious, therefore, to add an amount of PEO sufficient to meet the requirements of claims 1, 18, and 19 as a gelling agent to a sustained release, abuse deterrent formulation of 2.5 to 320mg of oxycodone, including HPMC, with an expectation that doing so would enhance abuse deterrence. And, it would be obvious in view of these references, to produce dosage forms with the claimed viscosity and without a semipermeable membrane as recited in claims 16, 18, and 19. Accordingly, claims 1, 16, 18, and 19 are obvious. (Ex.1007 ¶99.)

b. Claims 2-6, 8, 9, And 12

Claims 2-6 each depend from claim 1 and require sufficient gelling agent to impart a viscosity of at least 60cP; 120cP; 375cP; or 2000cP (cls.2-5, respectively) or within the range of 120 to 5000cP (cl.6) when the dosage form is subject to tampering by dissolution in from 0.5 to 10ml of an aqueous liquid. Claim 8 depends from claim 3 and specifies that the aqueous liquid is water. Claim 9 also depends from claim 3 and specifies using only 1 to 3ml of liquid. Claim 12 depends from claim 3 and specifies that the tampering involves crushing.

While neither Joshi nor Palermo report specific viscosities resulting from using specific amounts of gelling agents, Joshi tested gel formation by crushing the tablet to form a powder and adding the powder to 1ml of water (cls.2-6, 8, 9, 12). (Exs.1014 ¶¶[0042]-[0044]; 1007 ¶101.) And as noted above, Joshi teaches ranges of MW (Ex.1014 ¶[0022]) and amounts (*id.* ¶[0023]) of gelling agent to be used. And as also discussed above, the resulting viscosities from these teachings fall within the claimed ranges. By way of example, a 2% solution of WSR *N*-12K with a MW of 1,000,000 provides a viscosity of 400-800cP (cls.2-4, 6) and a 2% solution of WSR *N*-60K provides a viscosity of 2000-4000cP (cls.2-6). (Ex.1007 ¶101.) Similarly, a 2% solution of K4MP grade of HPMC provides a viscosity of between 3000 and 5600cP at 20°C falling within each of claims 2-6. (*Id.*) And it would be obvious from Joshi to make these measurements using crushed tablets in

1-3ml of an aqueous solution, which a POSA would appreciate includes water (cls.8, 9, 12). (Exs.1014 ¶¶[0042]-[0043]; 1007 ¶101.)

The *Handbook* also reinforces the teaching of Joshi by adjusting the grade and amount of PEO and/or HPMC, it is possible to obtain a wide range of viscosities. (Exs.1012, at 254, 399; 1007 ¶102.) It would be routine to make adjustments in the selection of the PEO and/or HPMC and the amounts used so as to optimize the viscosity for abuse deterrence while providing acceptable controlled release. (Ex.1007 ¶102.) Thus claims 2-6, 8, 9, and 12 are obvious.

c. Claims 7, 10, And 11

Claim 7 depends from claim 3 and requires a 40:1 to 1:40 ratio of gelling agent to drug. All of the examples in Joshi fall within this range. (Exs.1014 ¶¶[0036], [0038], [0040]; 1007 ¶103.) Claim 10 depends from claim 3 and specifies the salt oxycodone hydrochloride. Claim 11 depends from claim 10 and specifies between 10-80mg of that salt. Palermo specifically teaches an oxycodone dose of 13.5mg and that the drug and its salts are envisioned. (Exs.1011, at 7:6, 14:5; 1007 ¶103.) It would be obvious to use any salt of oxycodone in an equivalent amount. (Ex.1007 ¶103.)

d. Claim 13

Claim 13 also depends from claim 3 and requires that the claimed viscosity is obtained when the dosage form is subjected to tampering by dissolution in an

aqueous liquid when heated to greater than 45°C. It is not clear if the claim is referring to measuring viscosity when the resulting viscous liquid is heated or after it cooled. Moreover, only a minimum temperature is stated, not a maximum. Claim 13 thus literally reads on measuring viscosity when the dosage form is tampered with ***any*** temperature above 45°C. Thus, it is difficult to be sure what the goal of the claim truly is. That aside, a POSA would appreciate that viscosity measurements are dependent on the temperature at which the viscosity is taken. (Ex.1007 ¶104.) Thus, the claim is obvious over the same sort of optimization discussed previously in connection with claims 1-6, 18, and 19. It was known that one could obtain a wide variety of viscosities by optimizing the amount and MW of the PEO and the amount and grade of HPMC used. (Exs.1012, at 254, 399; 1007 ¶104.)

e. Claim 17

Claim 17 requires a film coating. Palermo discusses the use of just such a coating. (Exs.1011, at 21:8-11 ("[t]he particles are preferably film coated...."), 27:13-15 ("After coating with the hydrophobic materials, a further coating of a film former, such as Opadry®."); 1007 ¶105.)

3. Claims 1-13 And 16-19 Are Obvious

Palermo in view of Joshi and the *Handbook* therefore teaches or suggests every limitation of claims 1-13 and 16-19 of the '376 Patent. And any minor

differences would have been obvious. As is clear from the above discussion, Claim Chart 1 below, and the supporting declaration of Dr. Palmieri, the challenged claims are obvious.

CLAIM CHART 1

U.S. Patent No. 9,034,376 (Ex.1001), Claims 1-13 and 16-19	**Palermo (Ex.1011) in view of Joshi (Ex.1014) and the *Handbook* (Ex.1012)**
1.A controlled release oral solid dosage form comprising:	Ex.1011, at 8:1-3 ("oral dosage forms...are sustained release formulations.") Ex.1007 ¶¶48, 74-75, 86
a controlled release matrix comprising a mixture of	Ex.1011, at 8:1-3 ("sustained release carrier into a matrix"); *id.* 28:12-23 ("controlled release matrix") Ex.1007 ¶¶48, 74-75, 86
(i) from 2.5 mg to 320 mg oxycodone or a pharmaceutically acceptable salt thereof; and	Ex.1011, at 7:5-6 ("oxycodone...or pharmaceutically acceptable salts thereof."); 20:28-30 ("sustained release oral dosage forms include from about 2.5mg to about 800 mg of oxycodone.") Ex.1007 ¶¶48, 74, 89

U.S. Patent No. 9,034,376 (Ex.1001), Claims 1-13 and 16-19	**Palermo (Ex.1011) in view of Joshi (Ex.1014) and the *Handbook* (Ex.1012)**
(ii) a gelling agent comprising polyethylene oxide and hydroxypropylmethylcellulose,	Ex.1011, at 6:29-7:1 ("gelling agents"); *id*. at 28:19-23 ("Hydrophilic and/or hydrophobic materials...which is capable of imparting controlled release of the active agent and which melts (or softens to the extent necessary to be extruded)"); *id*. 30:13-17 ("hydroxypropylmethylcellulose"); *id*. 40:7-10 ("addition of a gelling agent") Ex.1014 ¶[0014] ("gel forming polymers"), ¶[0015] ("hydroxypropylmethylcellulose"), ¶[0019] ("polyethylene oxide") Ex.1012, at 252-55, 399-400 Ex.1007 ¶¶48, 54-65, 75, 79-80, 82, 84
the gelling agent in an effective amount to impart a viscosity of at least 10cP when the dosage form is subjected to tampering by dissolution in from 0.5 to 10ml of an aqueous liquid;	Ex.1011, at 6:29-7:1 ("a further ingredient which makes separation...more difficult. Such further ingredients include gelling agents"); *id*. 40:7-10 ("the addition of a gelling agent...could make it even more difficult.") Ex.1014 ¶[0022] (MW 70,000-2,000,000), ¶[0023] ("about 2 to 40 weight percent"); Examples 4-6 (After the formulations of Examples 1-3 were crushed and added to 1ml of water: "Gel formation occurs.") Ex.1012, at 254 Table II ("viscosity values for 2% (w/v) aqueous solutions," "K4MP 3000-5600"); *id*. at 399 Table II ("viscosity at 25°C," "2% solution," "WSR *N*-60K 2000-4000") Ex.1007 ¶56-65, 76, 79, 81, 91-97

U.S. Patent No. 9,034,376 (Ex.1001), Claims 1-13 and 16-19	**Palermo (Ex.1011) in view of Joshi (Ex.1014) and the *Handbook* (Ex.1012)**
the controlled release matrix providing a therapeutic effect for at least 12 hours when orally administered to a human patient.	Ex.1011, at 21:18-25 ("capable of providing...about twelve hours to up to about twenty-four hours of analgesia to a patient."); *id*. 33:18-20 ("sustained release of the therapeutically active agent for a time period of from about 8 to about 24 hours.") Ex.1007 ¶¶48, 74
2.The controlled release oral solid dosage form of claim 1, wherein the gelling agent is in an effective amount to impart a viscosity of at least 60cP when the dosage form is subjected to tampering by dissolution in from 0.5 to 10ml of an aqueous liquid.	Ex.1014 ¶[0022] (MW 70,000-2,000,000), ¶[0023] ("about 2 to 40 weight percent"); Examples 4-6 (After the formulations of Examples 1-3 were crushed and added to 1ml of water: "Gel formation occurs.") Ex.1012, at 254 Table II ("viscosity values for 2% (w/v) aqueous solutions," "K4MP 3000-5600"); *id*. at 399 Table II ("viscosity at 25°C," "2% solution," "WSR *N*-60K 2000-4000") Ex.1007 ¶¶56-65, 76, 79, 81, 91-97, 100-102
3.The controlled release oral solid dosage form of claim 1, wherein the gelling agent is in an effective amount to impart a viscosity of at least 120cP when the dosage form is subjected to tampering by dissolution in from 0.5 to 10ml of an aqueous liquid.	
4.The controlled release oral solid dosage form of claim 1, wherein the gelling agent is in an effective amount to impart a viscosity of at least 375cP when the dosage form is subjected to tampering by dissolution in from 0.5 to 10ml of an aqueous liquid.	

U.S. Patent No. 9,034,376 (Ex.1001), Claims 1-13 and 16-19	**Palermo (Ex.1011) in view of Joshi (Ex.1014) and the *Handbook* (Ex.1012)**
5.The controlled release oral solid dosage form of claim 1, wherein the gelling agent is in an effective amount to impart a viscosity of at least 2,000cP when the dosage form is subjected to tampering by dissolution in from 0.5 to 10ml of an aqueous liquid.	
6.The controlled release oral solid dosage form of claim 1, wherein the gelling agent is in an effective amount to impart a viscosity from 120cP to 5,000cP when the dosage form is subjected to tampering by dissolution in from 0.5 to 10ml of an aqueous liquid.	
7.The controlled release oral solid dosage form of claim 3, wherein the ratio of gelling agent to oxycodone or pharmaceutically acceptable salt thereof is from 1:40 to about 40:1.	Ex.1014 ¶[0036], Example 1 (POLYOX: di-methylphenidate is 4:1), Example 2 (PEG:di-methylphenidate is 3:10), Example 3 (CARBOPOL: di-methylphenidate 2.5:1.) Ex.1007 ¶¶81, 103
8.The controlled release oral solid dosage form of claim 3, wherein the aqueous liquid is water.	Ex.1014 ¶¶[0042]-[0044], Examples 4-6 (The formulations of Examples 1-3 were added to 1ml of water.) Ex.1007 ¶¶56-65, 76, 79, 81, 91-97, 100-102
9.The controlled release oral solid dosage form of claim 3, wherein the viscosity is imparted when the dosage form is subjected to tampering by dissolution in 1 to 3ml of aqueous liquid.	Ex.1014 ¶¶[0042]-[0044], Examples 4-6 (After the formulations of Examples 1-3 were crushed and added to 1ml of water: "Gel formation occurs.") Ex.1007 ¶¶56-65, 76, 79, 81, 91-97, 100-102

U.S. Patent No. 9,034,376 (Ex.1001), Claims 1-13 and 16-19	**Palermo (Ex.1011) in view of Joshi (Ex.1014) and the *Handbook* (Ex.1012)**
10.The controlled release oral solid dosage form of 3, wherein the oxycodone or pharmaceutically acceptable salt thereof comprises oxycodone hydrochloride.	Ex.1011, at 7:5-6 ("oxycodone...or pharmaceutically acceptable salts thereof.") Ex.1007 ¶¶48, 74, 89, 103
11.The controlled release oral solid dosage form of claim 10, comprising from 10 mg to 80 mg oxycodone hydrochloride.	Ex.1011, at 20:28-30 ("sustained release oral dosage forms include from about 2.5mg to about 800 mg of oxycodone.") Ex.1007 ¶¶48, 74, 89, 103
12.The controlled release oral solid dosage form of claim 3, wherein the viscosity is obtained when the dosage form is subjected to tampering by dissolution in the aqueous liquid after crushing.	Ex.1014 ¶¶[0042]-[0044], Examples 4-6 (After the formulations of Examples 1-3 were crushed and added to 1ml of water: "Gel formation occurs.") Ex.1007 ¶¶56-65, 76, 79, 81, 91-97, 100-102
13.The controlled release oral solid dosage form of claim 3, wherein the viscosity is obtained when the dosage form is subjected to tampering by dissolution in the aqueous liquid with heating at greater than 45°C.	Ex.1014 ¶[0022] (70,000 to 2,000,000 MW"); *id*. ¶[0023] ("about 2 to 40 weight percent"); *id*. ¶¶[0042]-[0044], Examples 4-6 (After the formulations of Examples 1-3 were crushed and added to 1ml of water: "Gel formation occurs.") Ex.1012, at 254 Table II ("viscosity values for 2% (w/v) aqueous solutions," "K4MP 3000-5600"); *id*. at 399 Table II ("viscosity at 25°C," "2% solution," "WSR *N*-60K 2000-4000") Ex.1007 ¶¶56-65, 76, 79, 81, 91-97, 104
16.The controlled release oral solid dosage form of claim 1, without a semipermeable wall.	Ex.1007 ¶¶98-99

U.S. Patent No. 9,034,376 (Ex.1001), Claims 1-13 and 16-19	**Palermo (Ex.1011) in view of Joshi (Ex.1014) and the *Handbook* (Ex.1012)**
17.The controlled release oral solid dosage form of claim 1, further comprising a film coat.	Ex.1011, at 27:13-15 ("a further overcoat of a film former"); *id.* 21:8-11 ("The particles are preferably film coated"); *see also id.* 22:6-17. Ex.1014 ¶[0026] ("enteric coating agents") Ex.1007 ¶48, 77, 81, 105
18.A controlled release oral solid dosage form comprising:	Ex.1011, at 8:1-3 ("oral dosage forms...are sustained release formulations.") Ex.1007 ¶¶48, 74-75, 86
a controlled release matrix comprising a mixture of:	Ex.1011, at 8:1-3 ("sustained release carrier into a matrix"); *id.* 28:12-23 ("controlled release matrix") Ex.1007 ¶¶48, 74-75, 86
(i) from 2.5 mg to 320 mg oxycodone or a pharmaceutically acceptable salt thereof; and	Ex.1011, at 7:5-6 ("oxycodone...or pharmaceutically acceptable salts thereof."); 20:28-30 ("sustained release oral dosage forms include from about 2.5mg to about 800 mg of oxycodone.") Ex.1007 ¶¶48, 74, 89
(ii) a gelling agent comprising polyethylene oxide and hydroxypropylmethylcellulose,	Ex.1011, at 6:29-7:1 ("gelling agents"); *id*. at 28:19-23 ("Hydrophilic and/or hydrophobic materials...which is capable of imparting controlled release of the active agent and which melts (or softens to the extent necessary to be extruded)"); *id*. 30:13-17 ("hydroxypropylmethylcellulose"); *id*. 40:7-10 ("addition of a gelling agent") Ex.1014 ¶[0014] ("gel forming polymers"), ¶[0015] ("hydroxypropylmethylcellulose"), ¶[0019] ("polyethylene oxide") Ex.1012, at 252-55, 399-400 Ex.1007 ¶¶48, 54-65, 75, 79-80, 82, 84

U.S. Patent No. 9,034,376 (Ex.1001), Claims 1-13 and 16-19	**Palermo (Ex.1011) in view of Joshi (Ex.1014) and the *Handbook* (Ex.1012)**
the gelling agent in an effective amount to impart a viscosity unsuitable for parenteral administration when the dosage form is subjected to tampering by dissolution in from 0.5 to 10ml of an aqueous liquid;	Ex.1011, at 6:29-7:1 ("a further ingredient which makes separation...more difficult. Such further ingredients include gelling agents"); *id*. 40:7-10 ("the addition of a gelling agent...could make it even more difficult.") Ex.1014 ¶[0022] (MW 70,000-2,000,000), ¶[0023] ("about 2 to 40 weight percent"); Examples 4-6 (After the formulations of Examples 1-3 were crushed and added to 1ml of water: "Gel formation occurs.") Ex.1012, at 254 Table II ("viscosity values for 2% (w/v) aqueous solutions," "K4MP 3000-5600"); *id*. at 399 Table II ("viscosity at 25°C," "2% solution," "WSR *N*-60K 2000-4000") Ex.1007 ¶¶56-65, 76, 79, 81, 91-97
the oral solid dosage form does not comprise a semipermeable wall,	Ex.1007 ¶¶98-99
the controlled release matrix providing a therapeutic effect for at least 12 hours when orally administered to a human patient.	Ex.1011, at 21:18-25 ("capable of providing...about twelve hours to up to about twenty-four hours of analgesia to a patient."); *id*. 33:18-20 ("sustained release of the therapeutically active agent for a time period of from about 8 to about 24 hours.") Ex.1007 ¶¶48, 74
19. A controlled release oral solid dosage form comprising:	Ex.1011, at 8:1-3 ("oral dosage forms...are sustained release formulations.") Ex.1007 ¶¶48, 74-75, 86

U.S. Patent No. 9,034,376 (Ex.1001), Claims 1-13 and 16-19	**Palermo (Ex.1011) in view of Joshi (Ex.1014) and the *Handbook* (Ex.1012)**
a controlled release matrix comprising a mixture of	Ex.1011, at 8:1-3 ("sustained release carrier into a matrix"); *id.* 28:12-23 ("controlled release matrix") Ex.1007 ¶¶48, 74-75, 86
(i) from 2.5 mg to 320 mg oxycodone or a pharmaceutically acceptable salt thereof; and	Ex.1011, at 7:5-6 ("oxycodone...or pharmaceutically acceptable salts thereof."); 20:28-30 ("sustained release oral dosage forms include from about 2.5mg to about 800 mg of oxycodone.") Ex.1007 ¶¶48, 74, 89
(ii) a gelling agent comprising polyethylene oxide and hydroxypropylmethylcellulose,	Ex.1011, at 6:29-7:1 ("gelling agents"); *id*. at 28:19-23 ("Hydrophilic and/or hydrophobic materials...which is capable of imparting controlled release of the active agent and which melts (or softens to the extent necessary to be extruded)"); *id*. 30:13-17 ("hydroxypropylmethylcellulose"); *id*. 40:7-10 ("addition of a gelling agent") Ex.1014 ¶[0014] ("gel forming polymers"), ¶[0015] ("hydroxypropylmethylcellulose"), ¶[0019] ("polyethylene oxide") Ex.1012, at 252-55, 399-400 Ex.1007 ¶¶48, 54-65, 75, 79-80, 82, 84

U.S. Patent No. 9,034,376 (Ex.1001), Claims 1-13 and 16-19	**Palermo (Ex.1011) in view of Joshi (Ex.1014) and the *Handbook* (Ex.1012)**
the gelling agent in an effective amount to impart a viscosity unsuitable to pull into an insulin syringe when the dosage form is subjected to tampering by dissolution in from 0.5 to 10ml of an aqueous liquid;	Ex.1011, at 6:29-7:1 ("a further ingredient which makes separation...more difficult. Such further ingredients include gelling agents"); *id*. 40:7-10 ("the addition of a gelling agent...could make it even more difficult.") Ex.1014 ¶[0022] (MW 70,000-2,000,000), ¶[0023] ("about 2 to 40 weight percent"); Examples 4-6 (After the formulations of Examples 1-3 were crushed and added to 1ml of water: "Gel formation occurs.") Ex.1012, at 254 Table II ("viscosity values for 2% (w/v) aqueous solutions," "K4MP 3000-5600"); *id*. at 399 Table II ("viscosity at 25°C," "2% solution," "WSR *N*-60K 2000-4000") Ex.1007 ¶¶56-65, 76, 79, 81, 91-97
the oral solid dosage form does not comprise a semipermeable wall,	Ex.1007 ¶¶98-99
the controlled release matrix providing a therapeutic effect for at least 12 hours when orally administered to a human patient.	Ex.1011, at 21:18-25 ("capable of providing...about twelve hours to up to about twenty-four hours of analgesia to a patient."); *id*. 33:18-20 ("sustained release of the therapeutically active agent for a time period of from about 8 to about 24 hours.") Ex.1007 ¶¶48, 74

B. Ground 2: Claims 1-13 And 16-19 Are Obvious Over Oshlack (Ex.1009) In View Of Joshi (Ex.1014), The *Handbook* (Ex.1012), And Doyon (Ex.1036)

The general law on obviousness discussed above, as well as the prior definitions of a POSA and the construed claim terms, are equally applicable to Ground 2 and therefore are not repeated.

Oshlack issued on April 16, 1996 (Ex.1009), and is therefore prior art to the '376 Patent under 35 U.S.C. § 102(b). Oshlack was of record and a related international publication, WO 93/01765, was discussed during prosecution. Doyon issued on February 1, 1994 (Ex.1036), and is therefore prior art to the '376 Patent under 35 U.S.C. §102(b). Doyon was not of record and was not discussed during prosecution. Joshi and the *Handbook* are prior art as described in connection with Ground 1.

1. The Scope And Content Of The Prior Art

Oshlack teaches oral dosage formulations comprising a controlled release matrix that can be composed of 5-25% of a hydroxyalkylcellulose, which can be HPMC, and 1-500mg of oxycodone hydrochloride. (Ex.1009, at 5:19-67, 6:3-5.) These formulations can have a therapeutic effect of at least 12 hours. (*Id.* 15:7-18.) Oshlack does not discuss abuse deterrence, but there was judicially recognized motive for POSAs to seek out abuse deterrent technology. When doing so, a POSA would find Joshi.

As noted previously, the problems of abuse of prescription drugs in general, and oxycodone in particular, were well known. This prompted the district court to explain that there was existing motivation to seek abuse deterrent technology. (Ex.1005, at 29, 51-52.) Moreover, the Supreme Court has recognized "any need or problem known in the field of endeavor at the time of the invention and addressed by the patent can provide a reason for combining the elements in the manner claimed." *KSR*, 550 U.S. at 420. Because opioid abuse was art-recognized, a POSA reading Oshlack would be motivated to improve its abuse deterrence.

As discussed in Ground 1 above, Joshi teaches that PEO is one of three preferred gel forming polymers useful in reducing the nasal absorption and injectability of the drug — the very sort of abuse discussed in the '376 Patent. (Exs.1014 ¶¶[0008], [0009], [0019], [0021]; 1007 ¶¶109. 112.) The court made similar factual findings with regard to Joshi in its opinion. (*See* Ex.1005, at 41-43.) Joshi also exemplifies ratios of gelling agent to drug of from about 4:1 to about 1:3.34. (Exs.1014 ¶¶ [0022], [0023], [0036], [0038], [0040], Examples 1-3; 1007 ¶109.) And, in testing the ability of the formulations to gel to establish abuse deterrence, Joshi crushed the tablets of Examples 1-3, placed them in 1ml of water, and stirred for one minute. In each case, "[g]el formation occurs." (Ex.1014 ¶¶[0042]-[0044].)

As also discussed in Ground 1, the *Handbook* (Ex.1012) confirms the well-established use of PEO and HPMC for controlled release and their suitability in matrix formulations and that varying amounts and grades can be very viscous. (Exs.1012, at 252-55, 399-400; 1007 ¶110.)

Finally, Doyon (Ex.1036) teaches that it is conventional to use film formed coatings on extended release dosage forms. (*Id.* 6:11-16; Ex.1007 ¶73.)

2. The Differences Between The Claimed Invention And The Prior Art

As further established in Claim Chart 2 below, there are few differences — and none that is meaningful — between the combination of Oshlack, Joshi, the *Handbook*, and Doyon, and claims 1-13 and 16-19 of the '376 Patent.

a. Claims 1, 16, 18, And 19

Independent claims 1, 18, and 19 require a controlled release oral dosage form including a controlled release matrix comprising a mixture of oxycodone or a pharmaceutically acceptable salt and a gelling agent comprising PEO and HPMC. Oshlack discloses a sustained release drug matrix that includes HPMC mixed with oxycodone hydrochloride (Ex.1009, at 5:34-66.) Oshlack does not teach including PEO and does not discuss abuse deterrence. But the courts looking at this issue have recognized that there was a publicly known abuse crisis for oxycodone by early 2000 and that a POSA would be motivated by this to produce abuse deterrent

controlled release formulations. (Ex.1005, at 52; *KSR* 550 U.S. at 420 (any need or problem in the field can provide motivation.) "To fulfill this goal, persons of ordinary skill in the art would have turned first to prior art that addressed abuse-deterrent formulations." (Ex.1005, at 52.) As the district court observed in the SDNY Litigation, this included Joshi. (*Id.*) (Ex.1007 ¶111.)

Joshi (Ex.1014) identifies PEO as a preferred gelling agent and teaches that using it provides not just generic abuse deterrence, but deterrence against the same type of abuse that was addressed in the '376 Patent — nasal absorption and injectability of abused dosage forms (Exs.1014 ¶¶[0008], [0009]; 1007 ¶112). Joshi even recognized that, in addition to PEO, HPMC was a gelling agent that could be used to provide abuse deterrence. (Ex.1014 ¶[0015].) Indeed, Joshi provides motivation to use a combination of gelling agents. (Exs. 1014 ¶[0014] ("The gel forming polymers may be ***used alone or in combination*** with other gel forming polymers." (emphasis added)); 1007 ¶112.)

Joshi informs a POSA that the HPMC Oshlack was already using could impact abuse deterrence and that a preferred gelling agent, PEO, could be combined with the HPMC to provide improvements to abuse deterrence. A POSA looking to impact the abuse deterrent properties of Oshlack would therefore be motivated to add PEO. (Ex.1007 ¶112.)

Independent claims 1, 18, and 19 further require between about 2.5mg and about 320mg of oxycodone or a salt. Oshlack teaches oxycodone hydrochloride in a range of from 1 to 500mg, and specifically identifies 10-160mg, corresponding to the available strengths of OxyContin. (Exs.1009, at 5:29-31; 1007 ¶114.)

Claim 1 requires that the amount of gelling agent used be sufficient to provide a viscosity of at least 10cP when the dosage form is subject to tampering by dissolution in from 0.5 to 10ml of an aqueous liquid. Independent claim 18 functionally states that the amount of gelling agent will impart a viscosity that is unsuitable for parenteral administration under the same conditions. Independent claim 19 alters the theme by requiring that the amount be unsuitable to pull into an insulin syringe. Oshlack does not specify the amount of combined gelling agent to be used to provide a specific viscosity of its formulations. While Joshi specified that it successfully tested gel formation by crushing tables to form a powder and adding the powder to 1ml of water (Exs.1014 ¶¶[0042]-[0044]; 1007 ¶115), Joshi does not explicitly disclose the resulting viscosity either.

But Joshi did specify that the gelling agent it used had a MW of 70,000-2,000,000 and a preferred range of 100,000-1,000,000 (Exs.1014 ¶[0022]; 1007 ¶116), and were present in about 2 to 40 weight percent. (Exs.1014 ¶[0023]; 1007 ¶116.)

As described in Ground 1 above, based on the teachings of Joshi and the *Handbook*, 2% solutions of grades of PEO falling within Joshi provide highly viscous solutions falling within the claims. (Exs.1014 ¶¶[0022], [0023]; 1012, at 234, Table II, 399, Tables I, II; 1007 ¶116.)

Specifically, the viscosity of a 2% or higher solution of PEO as taught by Joshi, using PEO with a MW of 100,000-2,000,000 as recited in Joshi, would provide viscosities falling within a range of 30-4000cp, which meets the requirements of claims 1, 18, and 19. (Ex.1007 ¶¶117-118.) These resulting viscosities include 400-800cP (WSR *N*-124 MW 1,000,000) and 2000-4000cP (WSR *N*-60K MW 2,000,000), both of which are greater than 10cP (cl.1). A POSA would know that a viscosity of 30-50cp, 400-800cP, and 2000-4000cP are greater than 10cP (cl.1) and the '376 Patent teaches that these viscosities would be unsuitable for parenteral administration (cl.18) and would be unsuitable to be pulled into an insulin syringe (cl.19), if dissolved in 1ml of an aqueous solution as Joshi did. (*See* PartVII.A above; Ex.1001, at 32:8-24, Table 3; Ex.1007 ¶119.) Olive oil at 20°C has a viscosity of 84.0cP, several times lower than the lowest viscosity from a 2% solution of WSR *N*-12K, which is at least 400cP. (Exs.1034, at F-56; 1007 ¶119.)

Even if that were not the case, Table II of the PEO entry in the *Handbook* teaches a POSA that by adjusting the MW and amount of PEO, it is possible to obtain a wide range of viscosities. (*Id.* ¶120.) As Dr. Palmieri explains, a POSA would know that it is possible to get a viscosity range that includes 4000cP using a 5% solution of WSR N3000 or WSR 205 (MW of 400,000 and 600,000, respectively), a 2% solution of WSR N-60K (MW 2,000,000) and a 1% solution of WSR 301 (MW 4,000,000). (*Id.* ¶120.) Thus, it would be obvious to a POSA that virtually any of the claimed viscosities, whether expressed numerically or functionally, could be obtained through routine experimentation. (*Id.* ¶120.)

And the *Handbook*'s entry for HPMC provides similar information teaching that, depending upon the amount and the grade used, a wide variety of viscosities can be obtained from about 2cP to 120,000cP. (Exs.1012, at 252, 254, Table II; 1007 ¶121.) It would be routine to adjust the amount and grades of PEO and HPMC used so as to optimize the viscosity to deter abuse while also providing acceptable controlled release. Again, this is true whether the viscosity range is reported numerically (cl.1) or functionally (cls.18, 19).

Claims 18 and 19 (as well as claim 16, which depends directly from claim 1) contain a further negative limitation; namely, that the dosage form not include a semipermeable wall. A POSA would understand this requirement to preclude the

dosage form from being an osmotic device. (*See* Exs.1001, at 24:43-45 (Osmotic Dosage Form section that includes "a substantially homogenous core...surrounded by a semipermeable wall having a passageway"); 1007 ¶122.) None of the references used in Ground 2 describes dosage forms including a semipermeable wall. (Ex.1007 ¶122.)

It therefore would be obvious to use an amount of PEO and HPMC sufficient to meet the requirements of claims 1, 18, and 19 as gelling agents to provide a sustained release formulation of 2.5 to 320mg of oxycodone. And a POSA would have an expectation that doing so would provide abuse deterrence. And it would be obvious, in view of these references, to produce dosage forms with the claimed viscosity and without a semipermeable wall as recited in claims 16, 18, and 19. Accordingly, claims 1, 16, 18, and 19 are obvious. (Ex.1007 ¶123.)

b. Claims 2-6, 8, 9, And 12

Claims 2-6 each depend from claim 1 and require sufficient gelling agent to impart a viscosity of at least: 60cP (cl.2); 120cP (cl.3); 375cP (cl.4); or 2000cP (cl.5) or within the range of 120 to 5000cP (cl.6) when the dosage form is subject to tampering by dissolution in from 0.5 to 10ml of an aqueous liquid. Claim 8 depends from claim 3 and specifies that the aqueous liquid is water. Claim 9 also depends from claim 3 and specifies using only 1 to 3ml. Claim 12 depends from

claim 3 and specifies that the tampering involves crushing. As noted earlier, neither Oshlack nor Joshi reports specific amounts and corresponding viscosities for a mixture of HPMC and PEO.

Joshi did, however, test gel formation by crushing the tablet to form a powder and adding the powder to 1ml of water, which is relevant to claims 2-6, 8, 9, and 12. (Exs.1014 ¶¶[0042]-[0044]; 1007 ¶125.) And Joshi did teach ranges of MW for the gelling agents (Exs.1014 ¶[0022]; 1007 ¶125) and amounts used (Exs.1014 ¶[0023]; 1007 ¶125). And, as discussed in detail in Ground 1 and above, the resulting viscosities, *e.g.*, 400-800cp, 2000-4000cp, 3000-5600cp, from these teachings fall within the claimed ranges of claims 2-6.

The *Handbook* teaches a POSA that by adjusting the grade and amount of PEO and/or HPMC, it is possible to obtain a wide range of viscosities. (Ex.1007 ¶126.) It would be routine to make adjustments in the selection and amounts of the PEO and/or HPMC used so as to adjust the viscosity over a wide range to provide a viscosity that is optimum for deterring abuse, but provides acceptable controlled release. And Joshi added a crushed tablet to 1ml of water *(i.e.*, an aqueous solution). (Exs.1001 cls.8, 9, 12; 1007 ¶126.) Thus claims 2-6, 8, 9, and 12 are obvious.

c. Claims 7, 10, And 11

Claim 7 depends from claim 3 and requires a 40:1 to 1:40 ratio of gelling agent to drug. All of the examples in Joshi fall within this range. (Exs.1014 ¶¶[0036], [0038], [0040]; 1007 ¶127.) Example 7 of Oshlack illustrates a formulation with 40mg of hydroxyethylcellulose and 4mg of oxycodone hydrochloride — a 10:1 ratio. (Ex.1009, at 12:50-59 (Table 11).) The ratio of gelling agent to drug in Example 8 of Oshlack is 4:1 (*id.* 12:61-13:10); the ratio in Example 9 is 7.5:1 (*id.* 13:24-32); in Example 14, the ratio was 3:1 (*id.* 13:35-42), and in Example 12, the ratio is 1:1 (*id.* 14:15-22).

Claim 10 depends from claim 3 and specifies the salt oxycodone hydrochloride. Claim 11 depends from claim 10 and specifies between 10-80mg of that salt. Oshlack teaches 10-160mg of oxycodone hydrochloride. (Exs.1009, at 5:30-31; 1007 ¶128.)

d. Claim 13

Claim 13 also depends from claim 3 and requires that the claimed viscosity is obtained when the dosage form is subjected to tampering by dissolution in an aqueous liquid and heated to greater than 45°C. It is not clear if the claim is referring to measuring viscosity when the resulting viscous liquid is heated or after it cooled. Moreover, only a minimum temperature is stated, not a maximum. Claim 13 thus literally reads on measuring viscosity when the dosage form is

tampered with at ***any*** temperature above 45°C. Thus, it is difficult to be sure what the goal of the claim truly is. That aside, a POSA would appreciate that viscosity measurements are dependent on the temperature at which the viscosity is taken. (Ex.1007 ¶129.) Thus, the claim is obvious over the same sort of optimization discussed previously in connection with claims 1-6, 18, and 19.

e. Claim 17

Claim 17 requires a film coating. Doyon teaches that film coatings are useful for modifying the release rates in a dosage form with a controlled release core. (Ex.1036, at 6:11-15.) But coatings may also be used to adjust disintegration rates, taste, texture, color, physical appearance, and the like, of controlled release tablets. (*Id*.) This provides ample teachings and motivation to film coat the controlled release tablets of Oshlack to modify the taste, texture, color, physical appearance, etc. with a reasonable expectation of success based on the teaching of Doyon. Claim 17 is therefore obvious. (Ex.1007 ¶130.)

3. Claims 1-13 And 16-19 Are Obvious

Oshlack in view of Joshi and the *Handbook* therefore teaches or suggests every limitation of claims 1-13 and 16-19 of the '376 Patent. Any minor differences would have been obvious. As is clear from the above discussion, Claim Chart 1 below, and the supporting declaration of Dr. Palmieri, the challenged claims are obvious.

CLAIM CHART 2

The '376 Patent (Ex.1001)	**Oshlack (Ex.1009) in view of Joshi (Ex.1014), the *Handbook* (Ex.1012), and Doyon (Ex.1036)**
1.A controlled release oral solid dosage form comprising:	Ex.1009 Abstract ("oral solid controlled release dosage formulation") Ex.1007 ¶¶49, 106, 111
a controlled release matrix comprising a mixture of	Ex.1009, at 5:34-40 ("controlled release matrix") Ex.1007 ¶¶49, 106, 111
(i) from 2.5mg to 320mg oxycodone or a pharmaceutically acceptable salt thereof; and	Ex.1009, at 5:29-31 ("between 1 and 500mg, most especially between 10 and 160 mg, of oxycodone hydrochloride") Ex.1007 ¶¶49, 106, 111
(ii) a gelling agent comprising polyethylene oxide and hydroxypropylmethylcellulose,	Ex.1009, at 5:60-66 ("hydroxypropylmethylcellulose") Ex.1014 ¶[0014] ("gel forming polymers"), ¶[0015] ("hydroxypropylmethylcellulose"), ¶[0019] ("polyethylene oxide") Ex.1012, at 252-55, 399-400 Ex.1007 ¶¶49, 54-65, 106, 111

The '376 Patent (Ex.1001)	**Oshlack (Ex.1009) in view of Joshi (Ex.1014), the *Handbook* (Ex.1012), and Doyon (Ex.1036)**
the gelling agent in an effective amount to impart a viscosity of at least 10cP when the dosage form is subjected to tampering by dissolution in from 0.5 to 10ml of an aqueous liquid;	Ex.1009, at 5:67-6:5 ("between 5% and 25%") Ex.1014 ¶[0022] (MW 70,000-2,000,000), ¶[0023] ("about 2 to 40 weight percent"); Examples 4-6 (After the formulations of Examples 1-3 were crushed and added to 1ml of water: "Gel formation occurs.") Ex.1012, at 254 Table II ("viscosity values for 2% (w/v) aqueous solutions," "K4MP 3000-5600"); *id*. at 399 Table II ("viscosity at 25°C," "2% solution," "WSR *N*-60K 2000-4000") Ex.1007 ¶¶49, 54-65, 106, 115-121
the controlled release matrix providing a therapeutic effect for at least 12 hours when orally administered to a human patient.	Ex.1009, at 4:53-5:18 ("at least a 12 hour therapeutic effect"); Example 17 ("Clinical Studies"); cl.1 ("human patients") Ex.1007 ¶¶49, 106, 111
2.The controlled release oral solid dosage form of claim 1, wherein the gelling agent is in an effective amount to impart a viscosity of at least 60cP when the dosage form is subjected to tampering by dissolution in from 0.5 to 10ml of an aqueous liquid.	Ex.1009, at 5:67-6:5 ("between 5% and 25%") Ex.1014 ¶[0022] (MW 70,000-2,000,000), ¶[0023] ("about 2 to 40 weight percent"); Examples 4-6 (After the formulations of Examples 1-3 were crushed and added to 1ml of water: "Gel formation occurs.") Ex.1012, at 254 Table II ("viscosity values for 2% (w/v) aqueous solutions," "K4MP 3000-5600"); *id*. at 399 Table II ("viscosity at 25°C," "2% solution," "WSR *N*-60K 2000-4000") Ex.1007 ¶¶49, 54-65, 106, 115-121, 124-126
3.The controlled release oral solid dosage form of claim 1, wherein the gelling agent is in an effective amount to impart a viscosity of at least 120cP when the dosage form is subjected to tampering by dissolution in from 0.5 to 10ml of an aqueous liquid.	

The '376 Patent (Ex.1001)	**Oshlack (Ex.1009) in view of Joshi (Ex.1014), the *Handbook* (Ex.1012), and Doyon (Ex.1036)**
4.The controlled release oral solid dosage form of claim 1, wherein the gelling agent is in an effective amount to impart a viscosity of at least 375cP when the dosage form is subjected to tampering by dissolution in from 0.5 to 10ml of an aqueous liquid.	
5. The controlled release oral solid dosage form of claim 1, wherein the gelling agent is in an effective amount to impart a viscosity of at least 2,000cP when the dosage form is subjected to tampering by dissolution in from 0.5 to 10ml of an aqueous liquid.	
6.The controlled release oral solid dosage form of claim 1, wherein the gelling agent is in an effective amount to impart a viscosity from 120cP to 5,000cP when the dosage form is subjected to tampering by dissolution in from 0.5 to 10ml of an aqueous liquid.	

The '376 Patent (Ex.1001)	**Oshlack (Ex.1009) in view of Joshi (Ex.1014), the *Handbook* (Ex.1012), and Doyon (Ex.1036)**
7.The controlled release oral solid dosage form of claim 3, wherein the ratio of gelling agent to oxycodone or pharmaceutically acceptable salt thereof is from 1:40 to about 40:1.	Ex.1009, Examples 7-8 (hydroxyethylcellulose:oxycodone hydrochloride is 10:1 and 4:1), Example 9 (hydroxyethylcellulose:oxycodone hydrochloride is 7.5:1), Example 14 (hydroxyethylcellulose:oxycodone hydrochloride is 3:1) Ex.1014 ¶[0036], Example 1 (POLYOX: di-methylphenidate is 4:1), Example 2 (PEG:di-methylphenidate is 3:10), Example 3 (CARBOPOL: di-methylphenidate 2.5:1.) Ex.1007 ¶¶109, 127
8.The controlled release oral solid dosage form of claim 3, wherein the aqueous liquid is water.	Ex.1014 ¶¶[0042]-[0044], Examples 4-6 (The formulations of Examples 1-3 were added to 1ml of water.) Ex.1007 ¶¶49, 54-65, 106, 115-121, 124-126
9.The controlled release oral solid dosage form of claim 3, wherein the viscosity is imparted when the dosage form is subjected to tampering by dissolution in 1 to 3ml of aqueous liquid.	Ex.1014 ¶¶[0042]-[0044], Examples 4-6 (After the formulations of Examples 1-3 were crushed and added to 1ml of water: "Gel formation occurs.") Ex.1007 ¶¶49, 54-65, 106, 115-121, 124-126
10.The controlled release oral solid dosage form of 3, wherein the oxycodone or pharmaceutically acceptable salt thereof comprises oxycodone hydrochloride.	Ex.1009, at 5:29-31 ("oxycodone hydrochloride") Ex.1007 ¶¶49, 106, 111, 128
11.The controlled release oral solid dosage form of claim 10, comprising from 10mg to 80mg oxycodone hydrochloride.	Ex.1009, at 5:29-31 ("between 10 and 160mg, of oxycodone hydrochloride") Ex.1007 ¶¶49, 106, 111, 128

The '376 Patent (Ex.1001)	**Oshlack (Ex.1009) in view of Joshi (Ex.1014), the *Handbook* (Ex.1012), and Doyon (Ex.1036)**
12.The controlled release oral solid dosage form of claim 3, wherein the viscosity is obtained when the dosage form is subjected to tampering by dissolution in the aqueous liquid after crushing.	Ex.1014 ¶¶[0042]-[0044], Examples 4-6, ("crushed to form a powder…added to 1ml of water…Gel formation occurs.") Ex.1007 ¶¶49, 54-65, 106, 115-121, 124-126
13.The controlled release oral solid dosage form of claim 3, wherein the viscosity is obtained when the dosage form is subjected to tampering by dissolution in the aqueous liquid with heating at greater than 45°C.	Ex.1009, at 5:67-6:5 ("between 5% and 25%") Ex.1014 ¶¶[0042]-[0044], Examples 4-6 (After the formulations of Examples 1-3 were crushed and added to 1ml of water: "Gel formation occurs.") Ex.1012, at 254 Table II ("viscosity values for 2% (w/v) aqueous solutions," "K4MP 3000-5600"); *id*. at 399 Table II ("viscosity at 25°C," "2% solution," "WSR *N*-60K 2000-4000") Ex.1007 ¶¶49, 54-65, 106, 115-121, 129
16.The controlled release oral solid dosage form of claim 1, without a semipermeable wall.	Ex.1007 ¶¶122-123
17.The controlled release oral solid dosage form of claim 1, further comprising a film coat.	Ex.1036, at 6:11-16 ("film coatings") Ex.1007 ¶¶73, 130
18.A controlled release oral solid dosage form comprising:	Ex.1009 Abstract ("oral solid controlled release dosage formulation") Ex.1007 ¶¶49, 106, 111
a controlled release matrix comprising a mixture of	Ex.1009, at 5:34-40 ("controlled release matrix") Ex.1007 ¶¶49, 106, 111

The '376 Patent (Ex.1001)	**Oshlack (Ex.1009) in view of Joshi (Ex.1014), the *Handbook* (Ex.1012), and Doyon (Ex.1036)**
(i) from 2.5mg to 320mg oxycodone or a pharmaceutically acceptable salt thereof; and	Ex.1009, at 5:29-31 ("between 1 and 500mg, most especially between 10 and 160 mg, of oxycodone hydrochloride") Ex.1007 ¶¶49, 106, 111
(ii) a gelling agent comprising polyethylene oxide and hydroxypropylmethylcellulose,	Ex.1009, at 5:60-66 ("hydroxypropylmethylcellulose") Ex.1014 ¶[0014] ("gel forming polymers"), ¶[0015] ("hydroxypropylmethylcellulose"), ¶[0019] ("polyethylene oxide") Ex.1012, at 252-55, 399-400 Ex.1007 ¶¶49, 54-65, 106, 111
the gelling agent in an effective amount to impart a viscosity unsuitable for parenteral administration when the dosage form is subjected to tampering by dissolution in from 0.5 to 10ml of an aqueous liquid;	Ex.1009, at 5:67-6:5 ("between 5% and 25%") Ex.1014 ¶[0022] (MW 70,000-2,000,000), ¶[0023] ("about 2 to 40 weight percent"); Examples 4-6 (After the formulations of Examples 1-3 were crushed and added to 1ml of water: "Gel formation occurs.") Ex.1012, at 254 Table II ("viscosity values for 2% (w/v) aqueous solutions," "K4MP 3000-5600"); *id*. at 399 Table II ("viscosity at 25°C," "2% solution," "WSR *N*-60K 2000-4000") Ex.1007 ¶¶49, 54-65, 106, 115-121
the oral solid dosage form does not comprise a semipermeable wall,	Ex.1007 ¶¶122-123
the controlled release matrix providing a therapeutic effect for at least 12 hours when orally administered to a human patient.	Ex.1009, at 4:53-5:18 ("at least a 12 hour therapeutic effect"); Example 17 ("Clinical Studies"); cl.1 ("human patients") Ex.1007 ¶¶49, 106, 111

The '376 Patent (Ex.1001)	**Oshlack (Ex.1009) in view of Joshi (Ex.1014), the *Handbook* (Ex.1012), and Doyon (Ex.1036)**
19. A controlled release oral solid dosage form comprising:	Ex.1009 Abstract ("oral solid controlled release dosage formulation") Ex.1007 ¶¶49, 106, 111
a controlled release matrix comprising a mixture of	Ex.1009, at 5:34-40 ("controlled release matrix") Ex.1007 ¶¶49, 106, 111
(i) from 2.5mg to 320mg oxycodone or a pharmaceutically acceptable salt thereof; and	Ex.1009, at 5:29-31 ("between 1 and 500mg, most especially between 10 and 160 mg, of oxycodone hydrochloride") Ex.1007 ¶¶49, 106, 111
(ii) a gelling agent comprising polyethylene oxide and hydroxypropylmethylcellulose,	Ex.1009, at 5:60-66 ("hydroxypropylmethylcellulose") Ex.1014 ¶[0014] ("gel forming polymers"), ¶[0015] ("hydroxypropylmethylcellulose"), ¶[0019] ("polyethylene oxide") Ex.1012, at 252-55, 399-400 Ex.1007 ¶¶49, 54-65, 106, 111
the gelling agent in an effective amount to impart a viscosity unsuitable to pull into an insulin syringe when the dosage form is subjected to tampering by dissolution in from 0.5 to 10ml of an aqueous liquid;	Ex.1009, at 5:67-6:5 ("between 5% and 25%") Ex.1014 ¶[0022] (MW 70,000-2,000,000), ¶[0023] ("about 2 to 40 weight percent"); Examples 4-6 (After the formulations of Examples 1-3 were crushed and added to 1ml of water: "Gel formation occurs.") Ex.1012, at 254 Table II ("viscosity values for 2% (w/v) aqueous solutions," "K4MP 3000-5600"); *id*. at 399 Table II ("viscosity at 25°C," "2% solution," "WSR *N*-60K 2000-4000") Ex.1007 ¶¶49, 54-65, 106, 115-121

The '376 Patent (Ex.1001)	**Oshlack (Ex.1009) in view of Joshi (Ex.1014), the *Handbook* (Ex.1012), and Doyon (Ex.1036)**
the oral solid dosage form does not comprise a semipermeable wall,	Ex.1007 ¶¶122-123
the controlled release matrix providing a therapeutic effect for at least 12 hours when orally administered to a human patient.	Ex.1009, at 4:53-5:18 ("at least a 12 hour therapeutic effect"); Example 17 ("Clinical Studies"); cl.1 ("human patients") Ex.1007 ¶¶49, 106, 111

IX. SECONDARY CONSIDERATIONS

It is Purdue's burden to establish secondary indicia of nonobviousness, if any. Of the several objective indicia of nonobviousness, such as commercial success, copying, long-felt but unmet need, skepticism, and industry acclaim, Purdue did not offer any such evidence during prosecution of the '376 Patent. Purdue should also be unsuccessful here in proving the existence of unexpected and superior results, or that there is a nexus between any secondary indicia, such as commercial success, and the claim of the '376 Patent.

"We have held on a number of occasions that evidence of commercial success alone is not sufficient to demonstrate nonobviousness of a claimed invention." *In re DBC*, 545 F.3d 1373, 1384 (Fed. Cir. 2008). "[T]he proponent must offer proof 'that the sales were a direct result of the unique characteristics of the claimed invention — as opposed to other economic and commercial factors unrelated to the quality of the patented subject matter.'" *Id.*

To prove nexus, Purdue will have to establish that any commercial success it enjoyed was based on patentable features — features of its invention that were not disclosed in the prior art. *See Asyst Techs., Inc. v. Emtrak, Inc.*, 544 F.3d 1310, 1316 (Fed. Cir. 2008); *see also J.T. Eaton & Co. v. Atl. Paste & Glue Co.*, 106 F.3d 1563, 1571 (Fed. Cir. 1997).

As discussed in the SDNY Decision, the commercial success of Purdue's Reformulated OxyContin is meaningless unless it can be attributed to the claimed features of the '376 Patent. (Ex.1005, at 49.) *See Tokai Corp. v. Easton Enters., Inc.*, 632 F.3d 1358, 1369-70 (Fed. Cir. 2011). At trial, the court found that Purdue did not market OxyContin on the basis of its abuse-deterrent properties, and Purdue's marketing message remained centered around efficacy and the side effect profile. (Ex.1005, at 48.) At trial, Purdue did not present data on whether the demand for OxyContin increased or decreased based on its abuse-deterrent features, nor did Purdue raise the cost of the drug based on the "new" gelling properties. (*Id*.) Accordingly, the court found that "[t]his evidence strongly suggests that the commercial success of Reformulated OxyContin is not the result of the '888 Patent's claimed features but rather its bioequivalence to Original OxyContin." (*Id*.) The same analysis applies with respect to the '376 Patent.

Here, in particular, its strains credulity to claim commercial success considering that the '376 Patent is not even listed in the *Orange Book* and therefore, by Purdue's own admission, has no connection with its commercial product, OxyContin. Finally, as previously recognized by the Federal Circuit, market entry here was precluded by a complex regulatory scheme. Accordingly, any inference of nonobvious based on commercial success is "weak." *Merck & Co. v. Teva Pharms. USA*, 395 F.3d 1364, 1377 (Fed. Cir. 2005).

Moreover, while the court found that the gelling features allowed Purdue to achieve ***regulatory*** success from the FDA decision to withdraw approval of Original OxyContin and not accept or approve any ANDAs seeking to market a generic version of it, the court was "hesitant to equate regulatory success to commercial success when Purdue's own evidence shows that the '888 Patent would not be nearly as successful if consumers had the choice to reject Reformulated OxyContin in favor of a bioequivalent generic product not covered by the patent." (Ex.1005, at 49.) The court also found that Purdue's assertion of copying by Petitioner was not an indication of nonobviousness since "evidence of copying in the ANDA context is not probative of nonobviousness because a showing of bioequivalence is required for FDA approval." (*See id*. 50 (citing *Bayer*

Healthcare Pharm., Inc. v. Watson Pharm., Inc., 713 F.3d 1369, 1377 (Fed. Cir. 2013)).)

In addition, the court found that the '888 Patent did not fulfill a long-felt but unmet need, as the need for abuse-resistant oxycodone formulations did not arise until 2001, the same year that Purdue filed the Provisional Application from which the '888 Patent and the '376 Patent arose. (*See* Ex.1005, at 50.) The court found that "the very short period of time that elapsed between the recognition of the need for abuse deterrent oxycodone formulations and the invention that matured into the '888 Patent simply does not indicate any long-felt need." (*Id.* (citing *In re OxyContin Antitrust Litig.*, 994 F. Supp. 2d 367, 400-01, 428 (S.D.N.Y. 2014)).)

With respect to any alleged skepticism, the court found that although Purdue contended that there was concern that gelling agents could hinder the release of the API, that worry existed only with respect to immediate release dosage forms, and the prior art actually supported the idea that certain gelling agents were compatible with — and in fact advantageous to — controlled release formulations. (Ex.1005, at 51.)

Finally, to the extent Purdue argues any unexpected results and predicates them on OxyContin, there is both a lack of nexus to what is claimed as the '376

Patent does not cover OxyContin and there is real reason to doubt whether OxyContin has actually accomplished any meaningful abuse resistance. (Ex.1035.)

In affirming the court's invalidity decision, the Federal Circuit necessarily rejected any alleged evidence of secondary considerations. (*See* Ex.1006.)

X. CONCLUSION

For the foregoing reasons, Petitioner requests that *inter partes* review be instituted for claims 1-13 and 16-19 of the '376 Patent and that those claims be held unpatentable over each of the grounds discussed in Part VIII.

Respectfully submitted,

Dated: July 15, 2016

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CERTIFICATE OF COMPLIANCE
WITH TYPE-VOLUME LIMITATION

Pursuant to Rule 37 C.F.R. § 42.24(d), the undersigned hereby certifies that, based upon the word count of the word-processing system used to prepare this petition, the number of words in this petition is 13,924. Pursuant to 37 C.F.R. § 42.24(a), this word count does not include "a table of contents, a table of authorities, a certificate of service or word count, exhibits, appendix, or claim listing."

Dated: July 15, 2016 By: s/Tedd Van Buskirk/
Tedd W. Van Buskirk
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CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing **PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 9,034,376**, together with all exhibits, Power of Attorney, and all other papers filed therewith, were served on July 15, 2016, as follows.

VIA FEDEX

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