

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT6389311

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	SECURITY AGREEMENT (NOTES)

CONVEYING PARTY DATA

Name	Execution Date
AVANTOR FLUID HANDLING, LLC	11/06/2020
AVANTOR PERFORMANCE MATERIALS, LLC	11/06/2020
NUSIL TECHNOLOGY LLC	11/06/2020
RELIABLE BIOPHARMACEUTICAL, LLC	11/06/2020
THERAPAK, LLC	11/06/2020

RECEIVING PARTY DATA

Name:	THE BANK OF NEW YORK MELLON TRUST COMPANY, N.A., AS NOTES COLLATERAL AGENT
Street Address:	500 ROSS STREET, 12TH FLOOR
City:	PITTSBURGH
State/Country:	PENNSYLVANIA
Postal Code:	15262

PROPERTY NUMBERS Total: 53

Property Type	Number
Patent Number:	8338350
Patent Number:	8986559
Application Number:	14115238
Patent Number:	6899818
Patent Number:	6875817
Patent Number:	7247208
Patent Number:	8906838
Patent Number:	7419945
Patent Number:	7767636
Patent Number:	7393954
Patent Number:	7521406
Patent Number:	7389627
Patent Number:	8178482
Patent Number:	7470767
Patent Number:	7951764
Patent Number:	7754668

PATENT

Property Type	Number
Patent Number:	8435217
Patent Number:	7799749
Patent Number:	8545890
Patent Number:	8183195
Patent Number:	8168577
Patent Number:	8288515
Patent Number:	8420790
Patent Number:	8481472
Patent Number:	8557757
Patent Number:	8497233
Patent Number:	8703923
Patent Number:	8987430
Patent Number:	8859522
Patent Number:	9327966
Patent Number:	9255119
Patent Number:	9138925
Patent Number:	10133180
Patent Number:	9570343
Patent Number:	9427393
Patent Number:	10206614
Patent Number:	10266693
Application Number:	15316614
Application Number:	16093434
Application Number:	16096870
Application Number:	16628872
Application Number:	16819448
Patent Number:	D565837
Patent Number:	D842105
Application Number:	16087397
Application Number:	63091718
Application Number:	62944394
Application Number:	62926368
Application Number:	17078390
Application Number:	63065230
Application Number:	63053935
Application Number:	62971509
Application Number:	63064213

CORRESPONDENCE DATA**Fax Number:** (800)914-4240*Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.***Phone:** 8007130755**Email:** james.murray@wolterskluwer.com**Correspondent Name:** CT CORPORATION**Address Line 1:** 4400 EASTON COMMONS WAY**Address Line 2:** SUITE 125**Address Line 4:** COLUMBUS, OHIO 43219

NAME OF SUBMITTER:	DORIS KA
SIGNATURE:	/Doris Ka/
DATE SIGNED:	11/06/2020

Total Attachments: 9

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**RECORDATION FORM COVER SHEET
PATENTS ONLY**

To the Director of the U.S. Patent and Trademark Office: Please record the attached documents or the new address(es) below.

1. Name of conveying party(ies)

- 1. Avantor Fluid Handling, LLC
- 2. Avantor Performance Materials, LLC
- 3. NuSil Technology LLC
- 4. Reliable Biopharmaceutical, LLC
- 5. Therapak, LLC

Additional name(s) of conveying party(ies) attached? Yes No

2. Name and address of receiving party(ies)

Name: The Bank of New York Mellon Trust Company, N.A.,
as Notes Collateral Agent

Internal Address: _____

Street Address: 500 Ross Street, 12th Floor

City: Pittsburgh

State: PA

Country: USA Zip: 15262

Additional name(s) & address(es) attached? Yes No

3. Nature of conveyance/Execution Date(s):

Execution Date(s) November 6, 2020

- Assignment Merger
- Security Agreement Change of Name
- Joint Research Agreement
- Government Interest Assignment
- Executive Order 9424, Confirmatory License
- Other Security Agreement (Notes)

4. Application or patent number(s):

This document serves as an Oath/Declaration (37 CFR 1.63).

A. Patent Application No.(s)

see attached Schedule A

B. Patent No.(s)

see attached Schedule A

Additional numbers attached? Yes No

5. Name and address to whom correspondence concerning document should be mailed:

Name: Doris Ka, Senior Paralegal (IP)

Internal Address: Cahill Gordon & Reindel LLP

Street Address: 32 Old Slip

City: New York

State: NY Zip: 10005

Phone Number: (212) 701-3569

Docket Number: 30860.864 (Notes)

Email Address: dka@cahill.com

6. Total number of applications and patents involved: 53

7. Total fee (37 CFR 1.21(h) & 3.41) \$ _____

- Authorized to be charged to deposit account
- Enclosed
- None required (government interest not affecting title)

8. Payment Information

Deposit Account Number _____

Authorized UserName _____

9. Signature:

Doris Ka

November 6, 2020

Signature

Date

Doris Ka

Name of Person Signing

Total number of pages including cover sheet, attachments, and documents:

9

Documents to be recorded (including cover sheet) should be faxed to (571) 273-0140, or mailed to:
Mail Stop Assignment Recordation Services, Director of the USPTO, P.O.Box 1450, Alexandria, V.A. 22313-1450

PATENT SECURITY AGREEMENT

This **PATENT SECURITY AGREEMENT**, dated as of November 6, 2020 (as amended, restated, supplemented or otherwise modified from time to time, this “**Patent Security Agreement**”), is made by AVANTOR FLUID HANDLING, LLC, a Massachusetts limited liability company, AVANTOR PERFORMANCE MATERIALS, LLC, a New Jersey limited liability company, NUSIL TECHNOLOGY LLC, a Delaware limited liability company, RELIABLE BIOPHARMACEUTICAL, LLC, a Delaware limited liability company, and THERAPAK, LLC, a California limited liability company (each, a “**Grantor**”, and collectively, the “**Grantors**”) in favor of THE BANK OF NEW YORK MELLON TRUST COMPANY, N.A., as Notes Collateral Agent for the Secured Parties (in such capacity and together with its successors and permitted assigns in such capacity, the “**Notes Collateral Agent**”).

WHEREAS, each Grantor is party to that certain Security Agreement dated as of November 6, 2020 (as amended, restated, supplemented or otherwise modified from time to time, the “**Security Agreement**”), among such Grantor, the other grantors party thereto, and the Notes Collateral Agent pursuant to which such Grantor granted a security interest to the Notes Collateral Agent in the Patent Collateral (as defined below) and is required to execute and deliver this Patent Security Agreement.

NOW, THEREFORE, in consideration of the foregoing and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, each Grantor hereby agrees with the Notes Collateral Agent as follows:

SECTION 1. DEFINED TERMS

Unless otherwise defined herein, capitalized terms have the meaning given to them in the Security Agreement.

SECTION 2. GRANT OF SECURITY INTEREST

Each Grantor, as security for the payment and performance in full of the Secured Obligations of such Grantor (including, if such Grantor is a Guarantor, the Secured Obligations of such Grantor arising under the Guarantee), hereby pledges to the Notes Collateral Agent, its successors and permitted assigns, for the benefit of the Secured Parties, and hereby grants to the Notes Collateral Agent, its successors and permitted assigns, for the benefit of the Secured Parties, a security interest in all of such Grantor’s right, title or interest in or to any and all Patents now owned or at any time hereafter acquired by such Grantor or in which such Grantor now has or at any time in the future may acquire any right, title or interest, including, without limitation, those identified in Schedule A hereto (collectively, the “**Patent Collateral**”), provided that the Patent Collateral shall not include any Excluded Assets.

SECTION 3. SECURITY AGREEMENT

The security interest granted pursuant to this Patent Security Agreement is granted in conjunction with the security interest granted to the Notes Collateral Agent for the Secured Parties pursuant to the Security Agreement, and each Grantor hereby acknowledges and affirms that the rights and remedies of the Notes Collateral Agent with respect to the security interest in the Patent Collateral made and granted hereby are more fully set forth in the Security Agreement, the terms and provisions of which are incorporated by reference herein as if fully set forth herein. In the event that any provision of this Patent Security Agreement is deemed to conflict with the Security Agreement, the provisions of the Security Agreement shall control.

SECTION 4. RECORDATION

Each Grantor hereby authorizes and requests that the USPTO record this Patent Security Agreement.

SECTION 5. TERMINATION

This Patent Security Agreement shall terminate and the lien on and security interest in the Patent Collateral shall be released upon the payment and performance of the Secured Obligations in accordance with the Notes Documents. Upon the termination of this Patent Security Agreement, the Notes Collateral Agent shall execute all documents and take all other actions reasonably requested by each Grantor, and at such Grantor's sole cost and expense, to evidence the release of the lien on and security interests in the Patent Collateral granted herein; provided that in no event shall the Notes Collateral Agent have any obligation to file or record any documents or instruments in any public office at any time or times.

SECTION 6. GOVERNING LAW

THIS PATENT SECURITY AGREEMENT SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAW OF THE STATE OF NEW YORK.

SECTION 7. COUNTERPARTS

This Patent Security Agreement may be executed in one or more counterparts and by different parties hereto in separate counterparts, each of which when so executed and delivered shall be deemed an original, but all such counterparts together shall constitute but one and the same instrument. Delivery by facsimile or other electronic transmission (i.e., a "pdf" or "tiff" attachment sent by email) of an executed counterpart of a signature page to this Patent Security Agreement shall be effective as delivery of an original executed counterpart of this Patent Security Agreement. The words "execution," "signed," "signature," "delivery," and words of like import in or relating to this Patent Security Agreement or any document to be signed in connection with this Patent Security Agreement shall be deemed to include electronic signatures, deliveries or the keeping of records in electronic form, each of which shall be of the same legal effect, validity or enforceability as a manually executed signature, physical delivery thereof or the use of a paper-based recordkeeping system, as the case may be, and the parties hereto consent to conduct the transactions contemplated hereunder by electronic means.

SECTION 8. CONCERNING THE NOTES COLLATERAL AGENT

For the avoidance of doubt, the parties hereto agree that the Notes Collateral Agent shall be afforded all of the rights, protections, indemnities, immunities and privileges afforded to the Notes Collateral Agent under the Indenture and the Security Agreement in connection with its execution of this Patent Security Agreement and the performance of its obligations hereunder. The recitals contained herein shall be taken as the statements of each Grantor and the Notes Collateral Agent assumes no responsibility for their correctness. The Notes Collateral Agent makes no representations as to the validity or sufficiency of this Patent Security Agreement.

[Remainder of page intentionally left blank]

IN WITNESS WHEREOF, each Grantor has caused this Patent Security Agreement to be executed and delivered by its duly authorized officer as of the date first set forth above.

AVANTOR FLUID HANDLING, LLC, as a Grantor

DocuSigned by:
Martin Goldman
By: _____
Name: Martin A. Goldman
Title: Vice President

AVANTOR PERFORMANCE MATERIALS, LLC,
as a Grantor

DocuSigned by:
Martin Goldman
By: _____
Name: Martin A. Goldman
Title: Vice President

NUSIL TECHNOLOGY LLC, as a Grantor

DocuSigned by:
Martin Goldman
By: _____
Name: Martin A. Goldman
Title: Vice President

RELIABLE BIOPHARMACEUTICAL, LLC, as a
Grantor

DocuSigned by:
Martin Goldman
By: _____
Name: Martin A. Goldman
Title: Vice President

THERAPAK, LLC, as a Grantor

DocuSigned by:
Martin Goldman
By: _____
Name: Martin A. Goldman
Title: Vice President

ACCEPTED AND ACKNOWLEDGED BY:

**THE BANK OF NEW YORK MELLON TRUST
COMPANY, N.A.,
as Notes Collateral Agent**

By: Lawrence M. Kusch
Name: Lawrence M. Kusch
Title: Vice President

SCHEDULE A
to
PATENT SECURITY AGREEMENT

PATENT REGISTRATIONS AND APPLICATIONS

TITLE	APPLICATION NUMBER	PATENT NUMBER	CURRENT OWNER
GLUCONIC ACID CONTAINING PHOTORESIST CLEANING COMPOSITION FOR MULTI-METAL DEVICE PROCESSING	12998499	8338350	Avantor Performance Materials, LLC - (APMLLC)
COMPOSITIONS AND METHODS FOR TEXTURING POLYCRYSTALLINE SILICON WAFERS	13778856	8986559	Avantor Performance Materials, LLC - (APMLLC)
NOVEL CHROMATOGRAPHIC MEDIA BASED ON ALLYLAMINE AND ITS DERIVATIVE FOR PROTEIN PURIFICATION	14115238		Avantor Performance Materials, LLC - (APMLLC)
Method And Composition For Removing Sodium-Containing Material For Microcircuit Substrate	10/220,720	6,899,818	Avantor Performance Materials, LLC - (APMLLC)
Functionalized Polymeric Media For Separation Of Analytes	10/250,570	6,875,817	Avantor Performance Materials, LLC - (APMLLC)
Microelectronic Cleaning Compositions Containing Ammonia-Free Fluoride Salts	10/483,036	7,247,208	Avantor Performance Materials, LLC - (APMLLC)
Microelectronic Cleaning And ARC Remover Compositions	10/515,372	8,906,838	Avantor Performance Materials, LLC - (APMLLC)
Microelectronic Cleaning Compositions Containing Oxidizers And Organic Solvents	10/515,392	7,419,945	Avantor Performance Materials, LLC - (APMLLC)
Nanoelectronic and Microelectronic Cleaning Compositions	10/584,827	7,767,636	Avantor Performance Materials, LLC - (APMLLC)
PROCESS FOR THE PRODUCTION OF PENTOSTATIN AGLYCONES AND PENTOSTATIN	10/734,545	7,393,954	Reliable Biopharmaceutical, LLC
Microelectronic Cleaning Composition Containing Halogen Oxygen Acids, Salts And Derivatives Thereof	10/982,330	7,521,406	Avantor Performance Materials, LLC - (APMLLC)
METHOD OF SHIPPING CONTAINER WITH EXPANDING BAG	11/266,467	7389627	Therapak, LLC

Cleaning Compositions For Microelectronic Substrates	11/630,603	8,178,482	Avantor Performance Materials, LLC - (APMLLC)
Preparation Of Ultrapure Polymeric Articles	11/631,586	7,470,767	Avantor Performance Materials, LLC - (APMLLC)
Non-Aqueous, Non-Corrosive Microelectronic Cleaning Compositions	11/720,084	7,951,764	Avantor Performance Materials, LLC - (APMLLC)
Compositions For The Removal Of Post-Etch and Ashed Photoresist Residues And Bulk Photoresist	11/911,346	7,754,668	Avantor Performance Materials, LLC - (APMLLC)
GAS STERILIZABLE TWO-PART POLYMER DELIVERY SYSTEM	12/101,926	8,435,217	Nusil Technology LLC - (NUSIL)
Stablized, Non-Aqueous Cleaning Compositions For Microelectronics Substrates	12/161,886	7,799,749	Avantor Performance Materials, LLC - (APMLLC)
Orally Disintegrating Tablets	12/270,905	8,545,890	Avantor Performance Materials, LLC - (APMLLC)
Peroxide Activated Oxometalate Based Formulations For Removal Of Etch Residue	12/522,716	8,183,195	Avantor Performance Materials, LLC - (APMLLC)
Post Plasma Etch/Ash Residue And Silicone-Based Anti-Reflective Coating Remover Compositions Containing Tetrafluoroborate Ion	12/811,257	8,168,577	Avantor Performance Materials, LLC - (APMLLC)
PROCESS FOR PREPARING FONDAPARINUX SODIUM AND INTERMEDIATES USEFUL IN THE SYNTHESIS THEREOF	12/847,719	8,288,515	Reliable Biopharmaceutical, LLC
EFFICIENT AND SCALABLE PROCESS FOR THE MANUFACTURE OF FONDAPARINUX SODIUM	12/915,864	8,420,790	Reliable Biopharmaceutical, LLC
Aqueous Acidic Formulations For Copper Oxide Etch Residue Removal And Prevention Of Copper Electrodeposition	12/998,296	8,481,472	Avantor Performance Materials, LLC - (APMLLC)
Multipurpose Acidic, Organic Solvent Based Microelectronic Cleaning Composition	13/138,467	8,557,757	Avantor Performance Materials, LLC - (APMLLC)
Stripping Compositions For Cleaning Ion Implanted Photoresist From Semiconductor Device Wafers	13/138,468	8,497,233	Avantor Performance Materials, LLC - (APMLLC)
PROCESS FOR PREPARING FONDAPARINUX SODIUM AND INTERMEDIATES USEFUL IN THE SYNTHESIS THEREOF	13/618,786	8,703,923	Reliable Biopharmaceutical, LLC
EFFICIENT AND SCALABLE PROCESS FOR THE	13/791,178	8,987,430	Reliable Biopharmaceutical, LLC

MANUFACTURE OF FONDAPARINUX SODIUM			
PROCESSES FOR THE PREPARATION OF REGADENOSON AND A NEW CRYSTALLINE FORM THEREOF	14/112,173	8,859,522	Reliable Biopharmaceutical, LLC
SEMI-AQUEOUS POLYMER REMOVAL COMPOSITIONS WITH ENHANCED COMPATIBILITY TO COPPER, TUNGSTEN, AND POROUS LOW-K DIELECTRICS	14/122,793	9,327,966	Avantor Performance Materials, LLC - (APMLLC)
PROCESS FOR PREPARING FONDAPARINUX SODIUM AND INTERMEDIATES USEFUL IN THE SYNTHESIS THEREOF	14/256,235	9,255,119	Reliable Biopharmaceutical, LLC
METHOD FOR FORMING BILAYER PATCHES	14/261,255	9,138,925	Nusil Technology LLC - (NUSIL)
MICROELECTRONIC SUBSTRATE CLEANING COMPOSITIONS HAVING COPPER/AZOLE POLYMER INHIBITION	14/348,955	10,133,180	Avantor Performance Materials, LLC - (APMLLC)
RINSING SOLUTION TO PREVENT TIN PATTERN COLLAPSE	14/408,431	9,570,343	Avantor Performance Materials, LLC - (APMLLC)
DISPERSIONS CONTAINING ENCAPSULATED MATERIALS AND COMPOSITIONS USING SAME	14/672,063	9,427,393	Nusil Technology LLC - (NUSIL)
PRE-STERILIZED SYRINGE SYSTEM AND METHOD OF USE	14/991,066	10,206,614	Avantor Fluid Handling, LLC
HIGH STRENGTH SILICONE ELASTOMERS AND COMPOSITIONS THEREFOR	15/185,490	10,266,693	Nusil Technology LLC - (NUSIL)
HIGH-PURITY LOW ENDOTOXIN CARBOHYDRATE (HPLC) COMPOSITIONS, AND METHODS OF ISOLATION THEREOF	15/316,614		Avantor Performance Materials, LLC - (APMLLC)
SURFACTANT FREE SILICONE EMULSION	16/093,434		Nusil Technology LLC - (NUSIL)
PACKAGING SYSTEM FOR STORAGE AND SHIPMENT OF SOLIDS	16/096,870		Avantor Performance Materials, LLC - (APMLLC)
CURABLE ORGANOPOLYSILOXANE COMPOSITION CONTAINING DYNAMIC COVALENT POLYSILOXANE	16/628,872		Avantor Performance Materials, LLC - (APMLLC)
ADJUSTABLE VOLUME SAMPLING SYSTEM (AVSS)	16/819,448		Avantor Fluid Handling, LLC

INSULATED PACKAGING FOR MEDICAL SPECIMENS	29/244,472	D565837	Therapak, LLC
OCTOCAP DESIGN	29/637,601	D842,105	Avantor Fluid Handling, LLC
[Redacted - Currently Unpublished]	16/087,397		Avantor Performance Materials, LLC - (APMLLC)
[Redacted - Currently Unpublished]	63/091,718		Avantor Performance Materials, Inc.
[Redacted - Currently Unpublished]	62/944,394		Nusil Technology LLC - (NUSIL)
[Redacted - Currently Unpublished]	62/926,368		Nusil Technology LLC - (NUSIL)
[Redacted - Currently Unpublished]	17/078,390		Nusil Technology LLC - (NUSIL)
[Redacted - Currently Unpublished]	63/065,230		Avantor Fluid Handling, LLC
[Redacted - Currently Unpublished]	63/053,935		Avantor Fluid Handling, LLC
[Redacted - Currently Unpublished]	62/971,509		Unassigned Provisional
[Redacted - Currently Unpublished]	63/064,213		Unassigned Provisional