



Registration of a Charge

Company Name: **MALLINCKRODT ENTERPRISES UK LIMITED**

Company Number: **09090223**



Received for filing in Electronic Format on the: **27/06/2022**

XB713ADL

Details of Charge

Date of creation: **16/06/2022**

Charge code: **0909 0223 0010**

Persons entitled: **DEUTSCHE BANK AG NEW YORK BRANCH**

Brief description:

Contains fixed charge(s).

Contains negative pledge.

Authentication of Form

This form was authorised by: **a person with an interest in the registration of the charge.**

Authentication of Instrument

Certification statement: **I CERTIFY THAT SAVE FOR MATERIAL REDACTED PURSUANT TO S. 859G OF THE COMPANIES ACT 2006 THE ELECTRONIC COPY INSTRUMENT DELIVERED AS PART OF THIS APPLICATION FOR REGISTRATION IS A CORRECT COPY OF THE ORIGINAL INSTRUMENT.**

Certified by: **JACK ELLIOTT**



CERTIFICATE OF THE REGISTRATION OF A CHARGE

Company number: 9090223

Charge code: 0909 0223 0010

The Registrar of Companies for England and Wales hereby certifies that a charge dated 16th June 2022 and created by MALLINCKRODT ENTERPRISES UK LIMITED was delivered pursuant to Chapter A1 Part 25 of the Companies Act 2006 on 27th June 2022 .

Given at Companies House, Cardiff on 29th June 2022

The above information was communicated by electronic means and authenticated by the Registrar of Companies under section 1115 of the Companies Act 2006



Companies House



**THE OFFICIAL SEAL OF THE
REGISTRAR OF COMPANIES**

U.S. COLLATERAL AGREEMENT

dated and effective as of

June 16, 2022

among

Mallinckrodt International Finance S.A., and
Mallinckrodt CB LLC,
as Borrowers,

each other Subsidiary Loan Party
party hereto

and

DEUTSCHE BANK AG NEW YORK BRANCH,
as Collateral Agent

TABLE OF CONTENTS

	<u>Page</u>
ARTICLE I	
Definitions	
SECTION 1.01. Credit Agreement.....	2
SECTION 1.02. Other Defined Terms	2
ARTICLE II	
Pledge of Securities	
SECTION 2.01. Pledge	13
SECTION 2.02. Delivery of the Pledged Collateral	15
SECTION 2.03. Representations, Warranties and Covenants.....	16
SECTION 2.04. Certification of Limited Liability Company and Limited Partnership Interests.....	18
SECTION 2.05. Registration in Nominee Name; Denominations.....	18
SECTION 2.06. Voting Rights; Dividends and Interest, Etc.	19
SECTION 2.07. Unlimited Liability Corporations	21
ARTICLE III	
Security Interests in Other Personal Property	
SECTION 3.01. Security Interest.....	22
SECTION 3.02. Representations and Warranties	24
SECTION 3.03. Covenants	27
SECTION 3.04. Other Actions.....	29
SECTION 3.05. Covenants Regarding Patent, Trademark and Copyright Collateral.....	30
ARTICLE IV	
Remedies	
SECTION 4.01. Remedies Upon Default.....	32
SECTION 4.02. Application of Proceeds.....	34
SECTION 4.03. Securities Act, Etc.	35
SECTION 4.04. Collection of Receivables Assets.....	36
SECTION 4.05. Special Collateral Account	36
SECTION 4.06. Pledgors' Obligations Upon Event of Default.....	36

ARTICLE V

Miscellaneous

SECTION 5.01.	Notices	37
SECTION 5.02.	Security Interest Absolute.....	37
SECTION 5.03.	Limitation By Law.....	37
SECTION 5.04.	Binding Effect; Several Agreements	38
SECTION 5.05.	Successors and Assigns	38
SECTION 5.06.	Collateral Agent's Fees and Expenses; Indemnification.....	38
SECTION 5.07.	Collateral Agent Appointed Attorney-in-Fact	39
SECTION 5.08.	Governing Law	40
SECTION 5.09.	Waivers; Amendment	40
SECTION 5.10.	WAIVER OF JURY TRIAL	41
SECTION 5.11.	Severability.....	41
SECTION 5.12.	Counterparts.....	41
SECTION 5.13.	Headings	42
SECTION 5.14.	Jurisdiction; Consent to Service of Process.....	42
SECTION 5.15.	Termination or Release.....	43
SECTION 5.16.	Additional Subsidiaries.....	44
SECTION 5.17.	General Authority of the Collateral Agent	45
SECTION 5.18.	Subject to Intercreditor Agreements; Conflicts	46
SECTION 5.19.	Specified Other First Lien Obligations.....	46
SECTION 5.20.	Person Serving as Collateral Agent	47
SECTION 5.21.	Survival of Agreement.....	48
SECTION 5.22.	Secured Cash Management Agreements and Secured Hedge Agreements	49

Schedules

Schedule I	Subsidiary Loan Parties
Schedule II	Pledged Stock; Pledged Debt
Schedule III	Intellectual Property
Schedule IV	Commercial Tort Claims
Schedule V	Additional Swiss Provisions

Exhibits

Exhibit I	Form of Supplement to the U.S. Collateral Agreement
Exhibit II	Form of Notice of Grant of Security Interest in Intellectual Property
Exhibit III	Form of Specified Other First Lien Secured Party Consent

U.S. COLLATERAL AGREEMENT dated and effective as of June 16, 2022, (this “**Agreement**”), is among MALLINCKRODT INTERNATIONAL FINANCE S.A., a public limited liability company (*société anonyme*) incorporated under the laws of the Grand Duchy of Luxembourg (“**Luxembourg**”), having its registered office at 124, boulevard de la Pétrusse, L-2330 Luxembourg, and registered with the Luxembourg Trade and Companies Register (*R.C.S Luxembourg*) under number B 172.865 (the “**Lux Borrower**”), MALLINCKRODT CB LLC, a Delaware limited liability company (the “**Co-Borrower**”, and together with the Lux Borrower, the “**Borrowers**”), each other Subsidiary Loan Party listed on the signature pages hereof and each other Subsidiary Loan Party that becomes a party hereto after the date hereof (together with the Lux Borrower and the Co-Borrower, collectively, the “**Pledgors**”), the Credit Agreement Agent (as defined below), the Existing First Lien Trustee (as defined below), the New First Lien Trustee (as defined below) and DEUTSCHE BANK AG NEW YORK BRANCH, as collateral agent for the Secured Parties referred to herein (together with its successors and assigns in such capacity, the “**Collateral Agent**”).

PRELIMINARY STATEMENT

Reference is made to (i) the Credit Agreement, dated as of June 16, 2022 (as amended, restated, supplemented, otherwise modified, refinanced or replaced from time to time, the “**Credit Agreement**”), among Mallinckrodt plc, a public limited company incorporated under the laws of Ireland with registered number 522227 (the “**Parent**”), the Borrowers, the Lenders party thereto from time to time, Acquiom Agency Services LLC and Seaport Loan Products LLC, as co-administrative agents and, together, the administrative agent (together with its successors and assigns in such capacity, the “**Credit Agreement Agent**”), and the other parties party thereto and (ii) the Borrowers’ 11.50% First Lien Senior Secured Notes due 2028 (the “**New First Lien Notes**”) issued under the Indenture, dated as of June 16, 2022 (as amended, restated, supplemented or otherwise modified from time to time, the “**New First Lien Notes Indenture**”), among the Borrowers, Parent, the other Guarantors party thereto from time to time, Wilmington Savings Fund Society, FSB, as first lien trustee (together with its successors and assigns in such capacity, the “**New First Lien Trustee**”), and the Collateral Agent, as first lien collateral agent, and (iii) the Borrowers’ 10.000% First Lien Senior Secured Notes due 2025 (the “**Existing First Lien Notes**”) issued under the Existing First Lien Notes Indenture, dated as of April 7, 2020 (as amended, restated, supplemented or otherwise modified from time to time, the “**Existing First Lien Notes Indenture**”), among the Borrowers, Parent, the other Guarantors party thereto from time to time, Wilmington Savings Fund Society, FSB, as first lien trustee (together with its successors and assigns in such capacity, the “**Existing First Lien Trustee**”), and the Collateral Agent, as first lien collateral agent.

Pursuant to the Plan of Reorganization, the Lenders have agreed to extend credit pursuant to the Credit Agreement, the Existing First Lien Notes shall be reinstated and certain parties have agreed to purchase New First Lien Notes from the Borrowers subject to the terms and conditions set forth in the Credit Agreement, the Existing First Lien Notes Indenture and the New First Lien Notes Indenture, as applicable. The obligations of the Lenders to extend such credit, and such parties to purchase the New First Lien Notes, are conditioned upon, among other things, the execution and delivery of this Agreement. The Subsidiary Loan Parties, as affiliates of the Borrowers, will derive substantial benefits from the reinstatement of the Existing First Lien Notes, the extension of credit to, and the sale of the New First Lien Notes by, the Borrowers

pursuant to the New First Lien Notes Indenture, the Credit Agreement, the Existing First Lien Notes Indenture and the Plan of Reorganization, as applicable. The Subsidiary Loan Parties are willing to execute and deliver this Agreement pursuant to the Plan of Reorganization and in order to induce the Lenders to extend such credit under the Credit Agreement, reinstate the Existing First Lien Notes under the Existing First Lien Notes Indenture and such parties to purchase the New First Lien Notes. Therefore, pursuant to the Plan of Reorganization and to provide for the reinstatement of the Existing First Lien Notes and to induce the Lenders to make their respective extensions of credit under the Credit Agreement and the Existing First Lien Notes, such parties to purchase the New First Lien Notes and the holders of any Specified Other First Lien Obligations to make extensions of credit under the applicable Specified Other First Lien Agreements, as applicable, the parties hereto agree as follows:

ARTICLE I

Definitions

SECTION 1.01. ***Credit Agreement, Existing First Lien Notes Indenture and New First Lien Notes Indenture.*** (a) Capitalized terms used in this Agreement and not otherwise defined herein have the respective meanings assigned thereto in the Credit Agreement, the Existing First Lien Notes Indenture and the New First Lien Notes Indenture, as applicable. All terms defined in the Uniform Commercial Code (as defined herein) and not defined in this Agreement, the Credit Agreement, the Existing First Lien Notes Indenture or the New First Lien Notes Indenture have the meanings specified therein, as applicable. The term “instrument” shall have the meaning specified in the Uniform Commercial Code.

(b) The rules of construction specified in Section 1.02 of the Credit Agreement also apply to this Agreement.

SECTION 1.02. ***Other Defined Terms.*** As used in this Agreement, the following terms have the meanings specified below:

“***Account Debtor***” means any person who is or who may become obligated to any Pledgor under, with respect to or on account of an Account, Chattel Paper or General Intangibles.

“***Additional Swiss Provisions***” means the provisions set forth in Schedule V.

“***Agreement***” has the meaning assigned to such term in the introductory paragraph of this agreement, as amended, restated, supplemented or otherwise modified from time to time.

“***Article 9 Collateral***” has the meaning assigned to such term in Section 3.01.

“***Authorized Representative***” means (a) the Credit Agreement Agent with respect to Credit Agreement Secured Obligations, (b) the New First Lien Trustee with respect to the New First Lien Notes Secured Obligations, (c) the Existing First Lien Trustee with respect to the Existing First Lien Notes Secured Obligations and (d) with respect to any Series of Specified Other First Lien Obligations, the duly authorized representative of the Specified Other First Lien Secured Parties of such Series designated as “Authorized Representative” for such Specified

Other First Lien Secured Parties in the Specified Other First Lien Agreement for such Series (or, in the absence of such designation, the collateral agent, administrative agent or trustee appointed for such Series under such Specified Other First Lien Agreement).

“Borrower” shall mean each of the Lux Borrower (in its capacity as Lux Borrower under the Credit Agreement, subject to Section 9.22 of the Credit Agreement, and in its capacity as Issuer under the New First Lien Notes Indenture or the Existing First Lien Notes Indenture, as applicable) and the Co-Borrower (in its capacity as Co-Borrower under the Credit Agreement and in its capacity as US Co-Issuer under the New First Lien Notes Indenture or the Existing First Lien Notes Indenture, as applicable), and the term **“Borrowers”** shall mean both the Lux Borrower and the Co-Borrower.

“Closing Date” means, as applicable, (i) the meaning assigned to such term in the Credit Agreement, (ii) the “Issue Date” as defined in the New First Lien Notes Indenture and (iii) the “Issue Date” as defined in the Existing First Lien Notes Indenture.

“Collateral” means Article 9 Collateral and Pledged Collateral. For the avoidance of doubt, the term Collateral does not include any Excluded Property or Excluded Securities.

“Collateral Agent” has the meaning assigned to such term in the introductory paragraph of this Agreement.

“Copyright License” means any written agreement, now or hereafter in effect, granting any right to any Pledgor under any Copyright now or hereafter owned by any third party, and all rights of any Pledgor under any such agreement (including any such rights that such Pledgor has the right to license).

“Copyrights” means all of the following now directly owned or hereafter directly acquired by any Pledgor: (a) all copyright rights in any work subject to the copyright laws of the United States or any other country, whether as author, assignee, transferee or otherwise; (b) all registrations and applications for registration of any such Copyright in the United States or any other country, including registrations, supplemental registrations and pending applications for registration in the United States Copyright Office and the right to obtain all renewals thereof, including those listed on *Schedule III*; (c) all claims for, and rights to sue for, past or future infringements of any of the foregoing; and (d) all income, royalties, damages and payments now or hereafter due and payable with respect to any of the foregoing, including damages and payments for past or future infringement thereof.

“Credit Agreement” has the meaning assigned to such term in the preliminary statement of this Agreement.

“Credit Agreement Agent” has the meaning assigned to such term in the preliminary statement of this Agreement.

“Credit Agreement Documents” means the “Loan Documents” as defined in the Credit Agreement, as such documents or instruments may be amended, restated, supplemented or otherwise modified from time to time.

“Credit Agreement Secured Obligations” means the “Obligations” as defined in the Credit Agreement.

“Credit Agreement Secured Parties” means the “Secured Parties” as defined in the Credit Agreement.

“Equity Interests” of any person means any and all shares, interests, rights to purchase or otherwise acquire, warrants, options, participations or other equivalents of or interests in (however designated) equity or ownership of such person, including any preferred stock, any limited or general partnership interest and any limited liability company membership interest, and any securities or other rights or interests convertible into or exchangeable for any of the foregoing.

“Event of Default” means an “Event of Default” under and as defined in the Credit Agreement with respect to the Credit Agreement Secured Obligations, the New First Lien Notes Indenture with respect to the New First Lien Notes Secured Obligations and the Existing First Lien Notes Indenture with respect to the Existing First Lien Notes Secured Obligations, as applicable, or, solely with respect to any Series of Specified Other First Lien Obligations, any Specified Other First Lien Agreement applicable thereto.

“Excluded Property” means, (A) with respect to all Secured Obligations, (i) any fee owned Real Property and leasehold interests in Real Property, (ii) motor vehicles and other assets subject to certificates of title to the extent that a security interest therein cannot be perfected by the filing of a financing statement under the Uniform Commercial Code or its equivalent in any applicable jurisdiction, (iii) Letter-of-Credit Rights (except to the extent constituting a Supporting Obligation for other Collateral as to which the perfection of security interests in such other Collateral and the Supporting Obligation is accomplished solely by the filing of a financing statement under the Uniform Commercial Code or its equivalent in any applicable jurisdiction) and Commercial Tort Claims, in each case with a value of less than \$5,000,000, (iv) Equity Interests of non-Wholly Owned Subsidiaries and joint ventures, to the extent prohibited under the organizational documents or joint venture documents of such non-Wholly Owned Subsidiaries or joint ventures, but solely to the extent qualifying as “Excluded Securities” pursuant to clause (c) of the definition thereof, (v) leases, licenses, instruments and other agreements to the extent, and so long as, the pledge thereof as Collateral would violate the terms thereof, but only to the extent, and for so long as, such prohibition is not terminated or rendered unenforceable or otherwise deemed ineffective by the Uniform Commercial Code, the Bankruptcy Code or any other Requirement of Law, (vi) other assets to the extent the pledge thereof is prohibited by applicable law, rule, regulation or contractual obligation, but only to the extent, and for so long as, such prohibition is not terminated or rendered unenforceable or otherwise deemed ineffective by the Uniform Commercial Code, the Bankruptcy Code or any other Requirement of Law, or which could require governmental (including regulatory) consent, approval, license or authorization to be pledged (which such consent, approval, license or

authorization has not been received), (vii) assets to the extent a security interest in such assets could reasonably be expected to result in a material adverse tax consequence as determined in good faith by the Lux Borrower (with any such determination set forth in an officer's certificate of the Lux Borrower being definitive); provided that this clause (vii) does not apply to any Voting Equity Interests held by a Domestic Subsidiary in excess of 65% of all such Voting Equity Interests in any Foreign Subsidiary or any CFC Holdco unless such Voting Equity Interests satisfy the requirements of the proviso to clause (xiii) below, (viii) those assets as to which the Credit Agreement Administrative Agent and the Collateral Agent shall reasonably determine that the costs or other adverse consequences of obtaining such security interest are excessive in relation to the value of the security to be afforded thereby, (ix) "intent-to-use" trademark applications, to the extent that the grant of a security interest therein would impair the validity or enforceability of, or render void or voidable or result in the cancellation of the applicable grantor's right, title or interest therein or in any trademark issued as a result of such application under applicable federal law, (x) assets securing any facility that is (I) a Qualified Receivables Facility in compliance with Section 6.02(z) of the Credit Agreement, (II) a Securitization Financing in compliance with clause (16) of the definition of the term "Permitted Liens" in the Existing First Lien Notes Indenture and (III)) a Securitization Financing in compliance with clause (16) of the definition of the term "Permitted Liens" in the New First Lien Notes Indenture, (xi) [reserved], (xii) such other assets of the Borrowers and the Guarantors as may be mutually agreed by the Lux Borrower, the Credit Agreement Administrative Agent and the Collateral Agent, and (xiii) with respect to Pledgor that is a Domestic Subsidiary, voting Equity Interests and any other interests constituting "stock entitled to vote" within the meaning of Treasury Regulation Section 1.956-2(c)(2) (together, "*Voting Equity Interests*") in excess of 65% of all such Voting Equity Interests in (I) any Foreign Subsidiary or (II) any Domestic Subsidiary substantially all of the assets of which consist, directly or indirectly, of equity of one or more Foreign Subsidiaries; provided that this clause (xiii) shall apply only if a Borrower determines (which determination may be made at any time, including after the granting of a Lien on the Voting Equity Interests in question) in good faith that a pledge of such Voting Equity Interests in excess of 65% of such Voting Equity Interests (1) could reasonably be expected to result in Parent or any of its Subsidiaries incurring any material tax or other cost (other than a de minimis cost) or any disruption in the operations or internal financing activities of the Parent and its Subsidiaries or (2) is not permitted by, or could reasonably be expected to cause any officers, directors or employees of the Parent or any of its Subsidiaries to become subject to related liabilities under any, applicable Requirement of Law, (B) with respect to the Existing First Lien Notes Secured Obligations and the New First Lien Notes Secured Obligations, any assets of any person organized under the laws of Switzerland and (C) with respect to any Series of Specified Other First Lien Obligations, any Specified Excluded Collateral.

"Excluded Securities" means any of the following:

- (a) any Equity Interests or Indebtedness with respect to which the Collateral Agent reasonably determines that the cost or other consequences of pledging such Equity Interests or Indebtedness in favor of the Secured Parties under the Security Documents are likely to be excessive in relation to the value to be afforded thereby;

(b) any Equity Interests or Indebtedness to the extent, and for so long as, the pledge thereof would be prohibited by any Requirement of Law;

(c) any Equity Interests of any person that is not a Wholly Owned Subsidiary to the extent (A) that a pledge thereof to secure the Secured Obligations is prohibited by (i) any applicable organizational documents, joint venture agreement or shareholder agreement or (ii) any other contractual obligation with an unaffiliated third party not in violation of Section 6.09 of the Credit Agreement, Section 4.05 of the Existing First Lien Notes Indenture and Section 4.05 of the New First Lien Notes Indenture, but, in the case of this subclause (A)(ii), only to the extent, and for so long as, such prohibition is not terminated or rendered unenforceable or otherwise deemed ineffective by the Uniform Commercial Code or any other Requirement of Law, (B) any organizational documents, joint venture agreement or shareholder agreement (or other contractual obligation referred to in subclause (A)(ii) above) prohibits such a pledge without the consent of any other party; *provided*, that this clause (B) shall not apply if (1) such other party is the Parent, a Pledgor or a Wholly Owned Subsidiary or (2) consent has been obtained to consummate such pledge (it being understood that the foregoing shall not be deemed to obligate the Parent or any Subsidiary to obtain any such consent) and for so long as such organizational documents, joint venture agreement or shareholder agreement or replacement or renewal thereof is in effect, or (C) a pledge thereof to secure the Secured Obligations would give any other party (other than the Parent, a Pledgor or a Wholly Owned Subsidiary) to any organizational documents, joint venture agreement or shareholder agreement governing such Equity Interests (or other contractual obligation referred to in subclause (A)(ii) above) the right to terminate its obligations thereunder, but only to the extent, and for so long as, such right of termination is not terminated or rendered unenforceable or otherwise deemed ineffective by the Uniform Commercial Code or any other Requirement of Law; provided that, to the extent that any Subsidiary was, at the Closing Date or at any time following the Closing Date, a Wholly Owned Subsidiary and subsequently ceased to be a Wholly Owned Subsidiary, the Equity Interests of such Subsidiary shall not constitute Excluded Securities pursuant to this clause (c) if such Subsidiary ceased to be a Wholly Owned Subsidiary as a result of (A) a transfer or issuance of any of its Equity Interests to any Affiliate or Related Party of any Borrower, (B) any transaction that was not a legitimate business transaction with third parties and was not undertaken for applicable legal or tax efficiency considerations or (C) any transaction with a primary purpose to evade the requirement of such Equity Interests constituting Collateral under the Credit Agreement, the Existing First Lien Notes Indenture or the New First Lien Notes Indenture;

(d) any Equity Interests of any Unrestricted Subsidiary or any person that is a Receivables Entity (as defined under the Credit Agreement) and a Securitization Subsidiary (as defined under each of the Existing First Lien Notes Indenture and the New First Lien Notes Indenture) (other than Equity Interests of an Unrestricted Subsidiary that are pledged as Collateral as contemplated by the penultimate paragraph of Section 6.04 of the Credit Agreement in connection with material Investments pursuant to Section 6.04(b) or Section 6.04(j) of the Credit Agreement);

(e) any Equity Interests of any Subsidiary to the extent that the pledge of such Equity Interests could reasonably be expected to result in material adverse tax consequences to the Parent or any Subsidiary as determined in good faith by the Lux Borrower (with any such determination set forth in an officer's certificate of the Lux Borrower being definitive); provided that this clause (e) does not apply to any Voting Equity Interests held by a Domestic Subsidiary in excess of 65% of all such Voting Equity Interests in any Foreign Subsidiary or any CFC Holdco unless such Voting Equity Interests satisfy the requirements of the proviso to clause (xiii) of the definition of "Excluded Property";

(f) [reserved;]

(g) any Margin Stock; and

(h) any Equity Interests constituting Excluded Property.

"Existing First Lien Notes" has the meaning assigned to such term in the preliminary statement of this Agreement.

"Existing First Lien Notes Documents" means the "Note Documents" as defined in the Existing First Lien Notes Indenture, as such documents or instruments may be amended, restated, supplemented or otherwise modified from time to time.

"Existing First Lien Notes Indenture" has the meaning assigned to such term in the preliminary statement of this Agreement.

"Existing First Lien Notes Secured Obligations" means the "First Priority Notes Obligations" as defined in the Existing First Lien Notes Indenture.

"Existing First Lien Notes Secured Parties" means the "First Priority Notes Secured Parties" as defined in the Existing First Lien Notes Indenture.

"Existing First Lien Trustee" has the meaning assigned to such term in the introductory paragraph of this Agreement.

"Federal Securities Laws" has the meaning assigned to such term in Section 4.03.

"First Lien Notes Secured Obligations" means the Existing First Lien Notes Secured Obligations and the New First Lien Notes Secured Obligations.

"General Intangibles" means all "general intangibles" as defined in the Uniform Commercial Code, including all choses in action and causes of action and all other intangible personal property of any Pledgor of every kind and nature (other than Accounts) now owned or hereafter acquired by any Pledgor, including corporate or other business records, indemnification claims, contract rights (including rights under leases, whether entered into as lessor or lessee, swap agreements and other agreements), Intellectual Property, goodwill, registrations, franchises,

tax refund claims and any guarantee, claim, security interest or other security held by or granted to any Pledgor to secure payment by an Account Debtor of any of the Accounts.

“Governmental Authority” means any federal, state, local or foreign court or governmental agency, authority, instrumentality or regulatory or legislative body.

“Intellectual Property” means all intellectual property of every kind and nature of any Pledgor, whether now owned or hereafter acquired by any Pledgor, including, inventions, designs, Patents, Copyrights, Trademarks, Patent Licenses, Copyright Licenses, Trademark Licenses, trade secrets, domain names, confidential or proprietary technical and business information, know-how, show-how or other data or information and all related documentation.

“Intellectual Property Collateral” has the meaning assigned to such term in Section 3.02.

“Intercreditor Agreements” means (a) a Permitted First Lien Intercreditor Agreement (upon and during the effectiveness thereof) with respect to any Specified Other First Lien Obligations and (b) any other intercreditor agreement (upon and during the effectiveness thereof) with respect to any other Indebtedness permitted under the Credit Agreement, New First Lien Notes Indenture, Existing First Lien Notes Indenture and any Specified Other First Lien Agreement that is entered into (including by the Collateral Agent) in compliance with the Credit Agreement, New First Lien Notes Indenture, Existing First Lien Notes Indenture and any Specified Other First Lien Agreement. The First Priority Intercreditor Agreement and the First Priority/Second Priority Intercreditor Agreement (each as defined in the New First Lien Notes Indenture) shall each constitute an Intercreditor Agreement.

“IP Agreements” means all material Copyright Licenses, Patent Licenses and Trademark Licenses, including, without limitation, the agreements set forth on *Schedule III* hereto.

“Material Adverse Effect” means a material adverse effect on (a) the business, property, operations or financial condition of the Parent and its Subsidiaries, taken as a whole, or (b) the validity or enforceability of (i) any of the Credit Agreement Documents or the rights and remedies of the Secured Parties thereunder, (ii) any of the New First Lien Notes Documents or the rights and remedies of the Secured Parties thereunder (iii) any of the Existing First Lien Notes Documents or the rights and remedies of the Secured Parties thereunder or (iv) solely with respect to any Series of Specified Other First Lien Obligations, any Specified Other First Lien Agreements applicable thereto or the rights and remedies of the Secured Parties thereunder.

“New First Lien Notes Indenture” has the meaning assigned to such term in the preliminary statement of this Agreement.

“New First Lien Notes” has the meaning assigned to such term in the preliminary statement of this Agreement.

“New First Lien Notes Documents” means the “Note Documents” as defined in the New First Lien Notes Indenture, as such documents or instruments may be amended, restated, supplemented or otherwise modified from time to time.

“New First Lien Notes Secured Obligations” means the “First Priority Notes Obligations” as defined in the New First Lien Notes Indenture.

“New First Lien Notes Secured Parties” means the “First Priority Notes Secured Parties” as defined in the New First Lien Notes Indenture.

“New First Lien Trustee” has the meaning assigned to such term in the introductory paragraph of this Agreement.

“Notices of Grant of Security Interest in Intellectual Property” means the notices of grant of security interest substantially in the form attached hereto as *Exhibit II* or such other form as shall be reasonably acceptable to the Collateral Agent.

“Patent License” means any written agreement, now or hereafter in effect, granting to any Pledgor any right to make, use or sell any invention covered by a Patent, now or hereafter owned by any third party (including any such rights that such Pledgor has the right to license).

“Patents” means all of the following now directly owned or hereafter directly acquired by any Pledgor: (a) all letters patent of the United States or the equivalent thereof in any other country or jurisdiction, including those listed on *Schedule III*, and all applications for letters patent of the United States or the equivalent thereof in any other country or jurisdiction, including those listed on *Schedule III*; (b) all provisionals, reissues, extensions, continuations, divisions, continuations-in-part, reexaminations or revisions thereof, and the inventions disclosed or claimed therein, including the right to make, use, import and/or sell the inventions disclosed or claimed therein; (c) all claims for, and rights to sue for, past or future infringements of any of the foregoing and (d) all income, royalties, damages and payments now or hereafter due and payable with respect to any of the foregoing, including damages and payments for past or future infringement thereof.

“Perfection Certificate” means the Perfection Certificate with respect to the Parent, each Borrower and the other Pledgors in form and substance reasonably satisfactory to the Collateral Agent and delivered to the Collateral Agent as of the Closing Date, as the same may be supplemented from time to time to the extent required by Section 5.04(f) of the Credit Agreement.

“Permitted Liens” means (i) with respect to the Credit Agreement Secured Obligations, Liens that are permitted pursuant to Section 6.02 of the Credit Agreement, (ii) with respect to the New First Lien Notes Secured Obligations, Liens that are permitted pursuant to the definition of “Permitted Liens” in the New First Lien Notes Indenture, (iii) with respect to the Existing First Lien Notes Secured Obligations, Liens that are permitted pursuant to the definition of “Permitted Liens” in the Existing First Lien Notes Indenture and (iv) solely with respect to

any Series of Specified Other First Lien Obligations, are also permitted by any Specified Other First Lien Agreement applicable thereto.

“Pledged Collateral” has the meaning assigned to such term in Section 2.01.

“Pledged Debt” has the meaning assigned to such term in Section 2.01.

“Pledged Securities” means any promissory notes, stock certificates or other certificated securities now or hereafter included in the Pledged Collateral, including all certificates, instruments or other documents representing or evidencing any Pledged Collateral.

“Pledged Stock” has the meaning assigned to such term in Section 2.01.

“Pledgor” means (i) with respect to the Credit Agreement Secured Obligations, the New First Lien Notes Secured Obligations and the Existing First Lien Notes Secured Obligations, the Borrowers and each other Subsidiary Loan Party set forth on *Schedule I* and any other Subsidiary Loan Party that becomes a party hereto pursuant to Section 5.16 and (ii) with respect to any Series of Specified Other First Lien Obligations, each person described in preceding clause (i), excluding any of the foregoing if such person or persons are not intended to provide collateral with respect to such Series pursuant to the terms of the Specified Other First Lien Agreement governing such Series. Notwithstanding anything to the contrary set forth herein, any entity that ceases to be a Guarantor in accordance with the terms of Section 9.18 of the Credit Agreement, Section 12.02 of the New First Lien Notes Indenture and Section 12.02 of the Existing First Lien Notes Indenture shall automatically cease to be a Pledgor with respect to such Series of Secured Obligations.

“Proceeds” means all proceeds of, and all other profits, products, rents or receipts, in whatever form, arising from the collection, sale, lease, exchange, assignment, licensing or other disposition of, or other realization upon, any Collateral, including all claims of the relevant Pledgor against third parties for loss of, damage to or destruction of, or for proceeds payable under, or unearned premiums with respect to, policies of insurance in respect of, any Collateral, and any condemnation or requisition payments with respect to any Collateral.

“Real Property” means, collectively, all right, title and interest (including any leasehold estate) in and to any and all parcels of or interests in real property owned in fee or leased by any Pledgor, whether by lease, license, or other means, together with, in each case, all easements, hereditaments and appurtenances relating thereto, all improvements and appurtenant fixtures and equipment, incidental to the ownership, lease or operation thereof.

“Regulation S-X Excluded Collateral” has the meaning assigned to such term in Section 2.01.

“Rule 3-10” has the meaning assigned to such term in Section 2.01.

“Rule 3-16” has the meaning assigned to such term in Section 2.01.

“SEC” has the meaning assigned to such term in Section 2.01.

“Secured Obligations” means, collectively, the Credit Agreement Secured Obligations, the New First Lien Notes Secured Obligations, the Existing First Lien Notes Secured Obligations and any Specified Other First Lien Obligations, or any of the foregoing. Notwithstanding the foregoing, for all purposes of the Credit Agreement Documents and any Specified Other First Lien Agreements, any Guarantee of, or grant of a Lien to secure, any obligations in respect of a Secured Hedge Agreement by a Pledgor shall not include any Excluded Swap Obligations. For the avoidance of doubt, the parties acknowledge and agree that the Secured Obligations of the Lux Borrower hereunder shall be subject to Sections 15, 16 and 17 of the Subsidiary Guarantee Agreement, Sections 12.09, 12.10 and 12.11 of the New First Lien Notes Indenture and Sections 12.09, 12.10 and 12.11 of the Existing First Lien Notes Indenture.

“Secured Parties” means the persons holding any Secured Obligations and in any event including (i) all Credit Agreement Secured Parties, (ii) all New First Lien Notes Secured Parties, (iii) all Existing First Lien Notes Secured Parties and (iv) all Specified Other First Lien Secured Parties.

“Security Documents” means, as applicable, (i) the meaning assigned to such term in the Credit Agreement, (ii) the “First Lien Collateral Documents” as defined in the New First Lien Notes Indenture, (iii) the “First Lien Collateral Documents” as defined in the Existing First Lien Notes Indenture and (iv) any analogous term in any Specified Other First Lien Agreement; *provided* that, with respect to the Secured Obligations of any Series, the term Security Documents shall not include any document which by its terms is solely for the benefit of the holders of one or more other Series of Secured Obligations and not such Series of Secured Obligations.

“Security Interest” has the meaning assigned to such term in Section 3.01.

“Series” means (a) with respect to any Secured Parties, each of (i) the Credit Agreement Secured Parties (in their capacities as such), (ii) the New First Lien Notes Secured Parties (in their capacities as such), (iii) the Existing First Lien Notes Secured Parties (in their capacities as such) and (iv) each group of Specified Other First Lien Secured Parties that become beneficiaries of this Agreement and becomes subject to any Permitted First Lien Intercreditor Agreement after the date hereof, which are to be represented hereunder by a common Authorized Representative (in its capacity as such for such Specified Other First Lien Secured Parties), each of which shall constitute a separate Series of Secured Parties for purposes of this Agreement and (b) with respect to any Secured Obligations, each of (i) the Credit Agreement Secured Obligations, (ii) the New First Lien Notes Secured Obligations, (iii) the Existing First Lien Notes Secured Obligations and (iv) each group of Specified Other First Lien Obligations incurred pursuant to any Specified Other First Lien Agreement, which are to be represented hereunder by a common Authorized Representative (in its capacity as such for such Specified Other First Lien Obligations), each of which shall constitute a separate Series of Secured Obligations for purposes of this Agreement.

“Specified Excluded Collateral” means, solely with respect to any Series of Specified Other First Lien Obligations, any asset (in addition to those specified in clause (A) of

the definition of “Excluded Property”) that is not intended to be collateral with respect to such Series pursuant to the terms of the Specified Other First Lien Agreement governing such Series (including the Regulation S-X Excluded Collateral to the extent applicable to such Series in accordance with the last paragraph of Section 2.01).

“***Specified Other First Lien Agreement***” means any credit agreement (other than the Credit Agreement), indenture (other than the New First Lien Notes Indenture and the Existing First Lien Notes Indenture) or other agreement, document or instrument pursuant to which any Pledgor has or will incur Specified Other First Lien Obligations; *provided* that, in each case, the indebtedness thereunder has been designated as Specified Other First Lien Obligations pursuant to and in accordance with Section 5.19 hereof.

“***Specified Other First Lien Obligations***” means (a) the due and punctual payment by any Pledgor of (i) the unpaid principal of and interest (including interest accruing during the pendency of any bankruptcy, insolvency, receivership or other similar proceeding) on indebtedness under any Specified Other First Lien Agreement, when and as due, whether at maturity, by acceleration, upon one or more dates set for prepayment or otherwise, and (ii) all other monetary obligations of such Pledgor to any Specified Other First Lien Secured Party under any Specified Other First Lien Agreement, including obligations to pay fees, expense reimbursement obligations and indemnification obligations, whether primary, secondary, direct, contingent, fixed or otherwise (including monetary obligations incurred during the pendency of any bankruptcy, insolvency, receivership or other similar proceeding), (b) the due and punctual performance of all other obligations of such Pledgor under or pursuant to any Specified Other First Lien Agreement, and (c) the due and punctual payment and performance of all the obligations of each other Pledgor under or pursuant to any Specified Other First Lien Agreement. Notwithstanding the foregoing, for all purposes of the Credit Agreement Documents and any Specified Other First Lien Agreements, any Guarantee of, or grant of a Lien to secure, any obligations in respect of any Swap Obligations by a Pledgor shall not include any Excluded Swap Obligations. For the avoidance of doubt, no such obligations shall constitute “Specified Other First Lien Obligations” unless so designated by the Lux Borrower pursuant to and in accordance with Section 5.19 hereof.

“***Specified Other First Lien Secured Parties***” means, collectively, the holders of Specified Other First Lien Obligations and any Authorized Representative with respect thereto.

“***Specified Other First Lien Secured Party Consent***” means a consent substantially in the form of *Exhibit III* to this Agreement (or such other form as the Collateral Agent may agree) executed by the Authorized Representative of any holders of Specified Other First Lien Obligations pursuant to Section 5.19 hereof.

“***Subsidiary Loan Party***” means any Subsidiary set forth on *Schedule I* and any Subsidiary that becomes a party hereto pursuant to Section 5.16 hereof (other than, with respect to any Series of Specified Other First Lien Obligations only, any Subsidiary excluded pursuant to clause (ii) of the definition of Pledgor with respect to the applicable Series of Specified Other First Lien Obligations).

“**Termination Date**” means any date on which there has occurred (i) the “Termination Date” as defined in the Credit Agreement, (ii)(A) payment in full of the principal of, accrued and unpaid interest and premium, if any, on the New First Lien Notes, (B) satisfaction and discharge of the New First Lien Notes Indenture in accordance with its terms or (C) legal defeasance or covenant defeasance of the New First Lien Notes Indenture under Article VIII thereof and (iii)(A) payment in full of the principal of, accrued and unpaid interest and premium, if any, on the Existing First Lien Notes, (B) satisfaction and discharge of the Existing First Lien Notes Indenture in accordance with its terms or (C) legal defeasance or covenant defeasance of the Existing First Lien Notes Indenture under Article VIII thereof.

“**Trademark License**” means any written agreement, now or hereafter in effect, granting to any Pledgor any right to use any Trademark now or hereafter owned by any third party (including any such rights that such Pledgor has the right to license).

“**Trademarks**” means all of the following now directly owned or hereafter directly acquired by any Pledgor: (a) all trademarks, service marks, corporate names, company names, business names, fictitious business names, trade styles, trade dress, logos, other source or business identifiers, designs and general intangibles of like nature, now existing or hereafter adopted or acquired, all registrations thereof (if any), and all registration and recording applications filed in connection therewith, including registrations and registration applications in the United States Patent and Trademark Office or any similar offices in any State of the United States or any other country or any political subdivision thereof, and all renewals thereof, including those listed on *Schedule III*; (b) all goodwill associated with or symbolized by the foregoing; (c) all claims for, and rights to sue for, past or future infringements, dilutions or other violations of any of the foregoing and (d) all income, royalties, damages and payments now or hereafter due and payable with respect to any of the foregoing, including damages and payments for past or future infringement, dilutions or other violations thereof.

“**ULC**” has the meaning assigned to such term in Section 2.07.

“**ULC Interests**” has the meaning assigned to such term in Section 2.07.

“**Uniform Commercial Code**” means the Uniform Commercial Code as the same may from time to time be in effect in the State of New York.

ARTICLE II

Pledge of Securities

SECTION 2.01. **Pledge.** As security for the payment or performance when due (whether at the stated maturity, by acceleration or otherwise), as the case may be, in full of its Secured Obligations, each Pledgor hereby assigns and pledges to the Collateral Agent, its successors and permitted assigns, for the benefit of the Secured Parties, and hereby grants to the Collateral Agent, its successors and permitted assigns, for the benefit of the Secured Parties, a security interest in all of such Pledgor’s right, title and interest in, to and under (whether now owned or hereafter acquired):

(a) all Equity Interests directly owned by it (including those listed on *Schedule II*) and any other Equity Interests obtained in the future by such Pledgor and any certificates representing all such Equity Interests (any such Equity Interests, the “**Pledged Stock**”); *provided* that the Pledged Stock shall not include any Excluded Securities or Excluded Property;

(b) (i) the debt obligations owed to such Pledgor listed opposite the name of such Pledgor on *Schedule II*, (ii) all other debt obligations existing on the Closing Date or in the future issued to such Pledgor, and (iii) the certificates, promissory notes and any other instruments, if any, evidencing such debt obligations (the property described in clauses (b)(i), (ii) and (iii) above, the “**Pledged Debt**”); *provided* that the Pledged Debt shall not include any Excluded Securities or Excluded Property;

(c) subject to Section 2.06, all payments of principal or interest, dividends, cash, instruments and other property from time to time received, receivable or otherwise distributed in respect of, in exchange for or upon the conversion of, and all other Proceeds received in respect of the Pledged Stock and the Pledged Debt;

(d) subject to Section 2.06, all rights and privileges of such Pledgor with respect to the Pledged Stock, Pledged Debt and other property referred to in clause (c) above; and

(e) all Proceeds of any of the foregoing (the Pledged Stock, Pledged Debt and other property referred to in this clause (e) and in clauses (c) through (d) above being collectively referred to as the “**Pledged Collateral**”); *provided* that the Pledged Collateral shall not include any Excluded Securities or Excluded Property.

TO HAVE AND TO HOLD the Pledged Collateral, together with all right, title, interest, powers, privileges and preferences pertaining or incidental thereto, unto the Collateral Agent, its successors and permitted assigns, for the benefit of the Secured Parties, forever; subject, however, to the terms, covenants and conditions hereinafter set forth.

Notwithstanding anything else contained in this Agreement, to the extent this paragraph is expressly made applicable with respect to any Specified Other First Lien Obligations pursuant to the terms of any Specified Other First Lien Agreement, with respect to such Specified Other First Lien Obligations, in the event that Rule 3-10 (“**Rule 3-10**”) or Rule 3-16 (“**Rule 3-16**”) of Regulation S-X under the Securities Act of 1933, as amended, as amended, modified or interpreted by the Securities Exchange Commission (“**SEC**”), would require (or is replaced with another rule or regulation, or any other law, rule or regulation is adopted, which would require) the filing with the SEC (or any other Governmental Authority) of separate financial statements of any Borrower or any Subsidiary of the Parent due to the fact that such Person’s Equity Interests or other securities secure such Specified Other First Lien Obligations, then the Equity Interests or other securities of such Person (the “**Regulation S-X Excluded Collateral**”) will automatically be deemed not to be part of the Collateral securing such Specified Other First Lien Obligations, but only to the extent necessary to not be subject to such requirement and only for so long as required to not be subject to such requirement. In such

event, this Agreement may be amended or modified, without the consent of any Secured Party, to the extent necessary to release the Lien on the Regulation S-X Excluded Collateral in favor of the Collateral Agent with respect only to the relevant Specified Other First Lien Obligations. In the event that Rule 3-10 or Rule 3-16 is amended, modified or interpreted by the SEC to permit (or is replaced with another rule or regulation, or any other law, rule or regulation is adopted, which would permit) any Regulation S-X Excluded Collateral to secure the Specified Other First Lien Obligations in excess of the amount then pledged without the filing with the SEC (or any other Governmental Authority) of separate financial statements of such Person, then the Equity Interests of such Person will automatically be deemed to be a part of the Collateral for the relevant Specified Other First Lien Obligations, but only to the extent permitted without the financial statement filing requirement described in the first sentence of this paragraph becoming applicable. For the avoidance of doubt and notwithstanding anything to the contrary in this Agreement, nothing in this paragraph shall limit the pledge of such Equity Interests and other securities from securing the applicable Pledgor's Secured Obligations (other than the Specified Other First Lien Obligations) at all relevant times. To the extent any Proceeds of any collection or sale of Equity Interests deemed by this paragraph to no longer constitute part of the Collateral for the relevant Specified Other First Lien Obligations are to be applied by the Collateral Agent in accordance with Section 4.02 hereof, such Proceeds shall, notwithstanding the terms of Section 4.02 and any Permitted First Lien Intercreditor Agreement (upon and during the effectiveness thereof), not be applied to the payment of such Specified Other First Lien Obligations (and shall be applied as otherwise provided in Section 4.02, as if the respective Specified Other First Lien Obligations had previously been paid in full in cash).

SECTION 2.02. *Delivery of the Pledged Collateral.* Subject in each case to the terms of any applicable Intercreditor Agreement:

(a) Each Pledgor agrees promptly to deliver or cause to be delivered to the Collateral Agent, for the benefit of the Secured Parties, any and all certificates or other instruments (if any) representing such Pledged Securities, to the extent such Pledged Securities are either (i) Pledged Stock or (ii) in the case of promissory notes or other instruments evidencing Pledged Debt, are required to be delivered pursuant to paragraph (b) of this Section 2.02, in each case to the extent not already in possession of the Collateral Agent.

(b) To the extent any Indebtedness for borrowed money constituting Pledged Collateral owed to any Pledgor (other than intercompany Indebtedness owed to such Pledgor by another Pledgor) is evidenced by a duly executed promissory note in an individual amount in excess of \$5,000,000, such Pledgor shall promptly cause such promissory note to be pledged and delivered to the Collateral Agent, for the benefit of the Secured Parties, pursuant to the terms hereof (except to the extent that a pledge or delivery of such promissory note would violate applicable law). To the extent any such promissory note is a demand note, each Pledgor party thereto agrees, if requested by the Collateral Agent, to immediately demand payment thereunder upon the occurrence and during the continuance of an Event of Default specified under Section 7.01(b), (c), (h) or (i) of the Credit Agreement, Section 6.01(a), (b), (f) or (g) of the New First Lien Notes Indenture, or Section 6.01(a), (b), (f) or (g) of the Existing First Lien Notes Indenture or any equivalent provision under any Specified Other First Lien Agreement, unless

such demand would not be commercially reasonable or would otherwise expose Pledgor to liability to the maker of such promissory note.

(c) Upon delivery to the Collateral Agent, (i) any Pledged Securities required to be delivered pursuant to the foregoing paragraphs (a) and (b) of this Section 2.02 shall be accompanied by stock powers or allonges, as applicable, duly executed in blank or other instruments of transfer reasonably satisfactory to the Collateral Agent, and by such other instruments and documents as the Collateral Agent may reasonably request and (ii) all other property comprising part of the Pledged Collateral delivered pursuant to the terms of this Agreement shall be accompanied to the extent necessary to perfect the security interest in or allow realization on the Pledged Collateral by proper instruments of assignment duly executed by the applicable Pledgor and such other instruments or documents (including issuer acknowledgments in respect of uncertificated securities that are created pursuant to Section 2.04(b)) as the Collateral Agent may reasonably request. Each delivery of Pledged Securities shall be accompanied by a schedule describing the securities, which schedule shall be deemed to be attached hereto as *Schedule II* (or a supplement to *Schedule II*, as applicable) and made a part hereof; *provided* that failure to attach any such schedule hereto shall not affect the validity of such pledge of such Pledged Securities. Each schedule so delivered shall supplement any prior schedules so delivered.

SECTION 2.03. ***Representations, Warranties and Covenants.*** The Pledgors, jointly and severally, represent, warrant and covenant to and with the Collateral Agent, for the benefit of the Secured Parties, that:

(a) *Schedule II* correctly sets forth (or, with respect to any Pledged Stock issued by an issuer that is not a subsidiary of the Borrower, correctly sets forth, to the knowledge of the relevant Pledgor), as of the Closing Date, the percentage of the issued and outstanding units of each class of the Equity Interests of the issuer thereof represented by the Pledged Stock and includes (i) all Equity Interests pledged hereunder and (ii) Pledged Debt pledged hereunder and in an individual principal amount in excess of \$5,000,000;

(b) the Pledged Stock and Pledged Debt (with respect to any Pledged Stock or Pledged Debt issued by an issuer that is not a subsidiary of the Borrower, to the knowledge of the relevant Pledgor), as of the Closing Date, (x) have been duly and validly authorized and issued by the issuers thereof and (y) (i) in the case of Pledged Stock, are fully paid and, with respect to Equity Interests constituting capital stock of a corporation, nonassessable and (ii) in the case of Pledged Debt, are legal, valid and binding obligations of the issuers thereof, subject to the effects of bankruptcy, insolvency, fraudulent conveyance, reorganization, moratorium and other similar laws relating to or affecting creditors' rights generally, general equitable principles (whether considered in a proceeding at law or in equity) and any implied covenant of good faith and fair dealing;

(c) except for the security interests granted hereunder (and other security interests not prohibited by the Credit Agreement Documents, New First Lien

Notes Documents, Existing First Lien Notes Documents or any Specified Other First Lien Agreement), each Pledgor (i) is and, subject to any transfers not in violation of the Credit Agreement, the New First Lien Notes Indenture, the Existing First Lien Notes Indenture or any Specified Other First Lien Agreement, will continue to be the direct owner, beneficially and of record, of the Pledged Securities indicated on *Schedule II* (as may be supplemented from time to time pursuant to Section 2.02(c)) as owned by such Pledgor, (ii) holds the same free and clear of all Liens, other than Permitted Liens, (iii) will make no assignment, pledge, hypothecation or transfer of, or create or permit to exist any security interest in or other Lien on, the Pledged Collateral, other than pursuant to a transaction not prohibited by the Credit Agreement, the New First Lien Notes Indenture, the Existing First Lien Notes Indenture or any Specified Other First Lien Agreement and other than Permitted Liens and (iv) subject to the rights of such Pledgor under the Credit Agreement Documents, the New First Lien Notes Documents, the Existing First Lien Notes Documents and any Specified Other First Lien Agreement to Dispose of Pledged Collateral, will use commercially reasonable efforts to defend its title or interest thereto or therein against any and all Liens (other than Permitted Liens), however arising, of all persons;

(d) other than as set forth in the Credit Agreement, the New First Lien Notes Indenture, the Existing First Lien Notes Indenture and any Specified Other First Lien Agreement, and except for restrictions and limitations imposed by the Credit Agreement Documents, the New First Lien Notes Documents, the Existing First Lien Notes Documents, any Specified Other First Lien Agreements or securities laws generally or otherwise not prohibited by the Credit Agreement, the New First Lien Notes Indenture, the Existing First Lien Notes Indenture or any Specified Other First Lien Agreement (or, in the case of shares of a ULC, any requirement that transfers of such shares be approved by the directors of the ULC), the Pledged Stock (other than partnership interests) is and will continue to be freely transferable and assignable, and none of the Pledged Stock is or will be subject to any option, right of first refusal, shareholders agreement, charter, by-law, memorandum of association or articles of association provisions or contractual restriction of any nature that might prohibit, impair, delay or otherwise affect the pledge of such Pledged Stock hereunder, the Disposition thereof pursuant hereto or the exercise by the Collateral Agent of rights and remedies hereunder other than under applicable Requirements of Law;

(e) each Pledgor has the power and authority to pledge the Pledged Collateral pledged by it hereunder in the manner hereby done or contemplated;

(f) other than as set forth in the Credit Agreement, the New First Lien Notes Indenture and the Existing First Lien Notes Indenture as of the Closing Date, no consent or approval of any Governmental Authority, any securities exchange or any other person was or is necessary to the validity of the pledge effected hereby other than such as have been obtained and are in full force and effect;

(g) by virtue of the execution and delivery by the respective Pledgors of this Agreement or any supplement hereto, when any Pledged Securities are delivered

to the Collateral Agent, for the benefit of the Secured Parties, in accordance with this Agreement (to the extent required hereunder) and a financing statement naming the Collateral Agent as the secured party and covering such Pledged Securities is filed in the appropriate filing office, the Collateral Agent will obtain, for the benefit of the Secured Parties, a legal, valid and perfected lien upon and security interest in such Pledged Securities under the Uniform Commercial Code, subject only to (x) Permitted Liens and (y) any requirement under Luxembourg law, including the foreign *lex rei sitae* referred to under Luxembourg international private law, with respect to any Collateral which (1) under Luxembourg law, would be located or deemed located in Luxembourg or (2) would be granted by the Lux Borrower, as security for the payment and performance of its Secured Obligations, to the extent such perfection is governed by the Uniform Commercial Code; and

(h) each Pledgor that is an issuer of the Pledged Collateral confirms that it has received notice of the security interest granted hereunder and consents to such security interest and, subject to the terms of any applicable Intercreditor Agreement, agrees to transfer record ownership of the securities issued by it in connection with any request by the Collateral Agent if an Event of Default has occurred and is continuing.

SECTION 2.04. *Certification of Limited Liability Company and Limited Partnership Interests.*

(a) As of the Closing Date, except as set forth on *Schedule II*, the Equity Interests in limited liability companies and limited partnerships that are pledged by the Pledgors hereunder and do not have a certificate described on *Schedule II* do not constitute a security under Section 8-103 of the Uniform Commercial Code or the corresponding code or statute of any other applicable jurisdiction.

(b) The Pledgors shall at no time elect to treat any interest in any limited liability company or limited partnership Controlled by a Pledgor and pledged hereunder as a “security” within the meaning of Article 8 of the Uniform Commercial Code or issue any certificate representing such interest, unless promptly thereafter (and in any event within 30 days or such longer period as the Collateral Agent may permit in its sole discretion) the applicable Pledgor provides notification to the Collateral Agent of such election and delivers, as applicable, any such certificate to the Collateral Agent pursuant to the terms hereof.

SECTION 2.05. *Registration in Nominee Name; Denominations.* Subject to any applicable Intercreditor Agreement, the Collateral Agent, on behalf of the Secured Parties, shall have the right (in its sole and absolute discretion) to hold the Pledged Securities (other than Pledged Securities that are ULC Interests) in the name of the applicable Pledgor, endorsed or assigned in blank or in favor of the Collateral Agent or, if an Event of Default shall have occurred and be continuing, in its own name as pledgee or the name of its nominee (as pledgee or as sub-agent). If an Event of Default shall have occurred and be continuing, each Pledgor will promptly give to the Collateral Agent copies of any notices or other communications received by it with respect to Pledged Securities registered in the name of such Pledgor. If an Event of Default shall have occurred and be continuing, the Collateral Agent shall have the right to

exchange the certificates representing Pledged Securities (other than Pledged Securities that are ULC Interests) held by it for certificates of smaller or larger denominations for any purpose consistent with this Agreement, subject to any applicable Intercreditor Agreement. Subject to any applicable Intercreditor Agreement, with respect to Pledged Securities that are ULC Interests, at any time at which an Event of Default has occurred and is continuing and subject to any applicable Intercreditor Agreement, the Collateral Agent shall have the right to require the Pledgors to cause (or, if the issuer of such ULC Interests is not a Subsidiary of a Pledgor, to use commercially reasonable efforts to cause) the ULC Interests to be transferred and registered as the Collateral Agent may direct and each applicable Pledgor covenants that, at the time of any such transfer, it will provide (or, if the issuer of such ULC Interests is not a Subsidiary of a Pledgor, use commercially reasonable efforts to provide) all required consents and approvals. Subject to any applicable Intercreditor Agreement, each Pledgor shall cause any Subsidiary that is not a party to this Agreement to comply with a request by the Collateral Agent, pursuant to this Section 2.05, to exchange certificates representing Pledged Securities of such Subsidiary for certificates of smaller or larger denominations.

SECTION 2.06. *Voting Rights; Dividends and Interest, Etc.* Subject in each case to the terms of any applicable Intercreditor Agreement:

(a) Unless and until an Event of Default shall have occurred and be continuing and the Collateral Agent shall have given written notice to the relevant Pledgors of the Collateral Agent's intention to exercise its rights hereunder:

(i) Each Pledgor shall be entitled to exercise any and all voting and/or other consensual rights and powers inuring to an owner of Pledged Collateral or any part thereof for any purpose not prohibited by the terms of this Agreement, the Credit Agreement Documents, the New First Lien Notes Documents, the Existing First Lien Notes Documents or any Specified Other First Lien Agreement; *provided* that, except as not prohibited by the Credit Agreement, the New First Lien Notes Indenture, the Existing First Lien Notes Indentures or any Specified Other First Lien Agreement, such rights and powers shall not be exercised in any manner that would materially and adversely affect the rights and remedies of any of the Collateral Agent or any other Secured Parties under this Agreement, any Credit Agreement Document, any New First Lien Notes Document, any Existing First Lien Notes Document or any Specified Other First Lien Agreement or the ability of the Secured Parties to exercise the same.

(ii) The Collateral Agent shall promptly execute and deliver to each Pledgor, or cause to be executed and delivered to such Pledgor, all such proxies, powers of attorney and other instruments as such Pledgor may reasonably request for the purpose of enabling such Pledgor to exercise the voting and/or consensual rights and powers it is entitled to exercise pursuant to subparagraph (i) above.

(iii) Each Pledgor shall be entitled to receive and retain any and all dividends, interest, principal and other distributions paid on or distributed in

respect of the Pledged Collateral to the extent and only to the extent that such dividends, interest, principal and other distributions are not prohibited by, and otherwise paid or distributed in accordance with, the terms and conditions of the Credit Agreement Documents, the New First Lien Notes Documents, the Existing First Lien Notes Documents, any Specified Other First Lien Agreement and applicable laws; *provided that* (A) any noncash dividends, interest, principal or other distributions, payments or other consideration in respect thereof, including any rights to receive the same to the extent not so distributed or paid, that would constitute Pledged Securities, whether resulting from a subdivision, combination or reclassification of the outstanding Equity Interests of the issuer of any Pledged Securities, received in exchange for Pledged Securities or any part thereof, or in redemption thereof, as a result of any merger, consolidation, acquisition or other exchange of assets to which such issuer may be a party or otherwise or (B) any non-cash dividends and other distributions paid or payable in respect of any Pledged Securities that would constitute Pledged Securities, in connection with a partial or total liquidation or dissolution or in connection with a reduction of capital, capital surplus or paid in surplus, shall be and become part of the Pledged Collateral, and, if received by any Pledgor, shall not be commingled by such Pledgor with any of its other funds or property but shall be held separate and apart therefrom, shall be held in trust for the benefit of the Collateral Agent, for the benefit of the Secured Parties, and shall be promptly delivered to the Collateral Agent, for the benefit of the Secured Parties, in the same form as so received (endorsed in a manner reasonably satisfactory to the Collateral Agent).

(b) Upon the occurrence and during the continuance of an Event of Default and after written notice by the Collateral Agent to the relevant Pledgor or Pledgors of the Collateral Agent's intention to exercise its rights hereunder, all rights of any Pledgor to receive dividends, interest, principal or other distributions with respect to Pledged Securities that are not ULC Interests that such Pledgor is authorized to receive pursuant to paragraph (a)(iii) of this Section 2.06 shall cease, and all such rights shall thereupon become vested, for the benefit of the Secured Parties, in the Collateral Agent which shall have the sole and exclusive right and authority to receive and retain such dividends, interest, principal or other distributions. All dividends, interest, principal or other distributions received by any Pledgor contrary to the provisions of this Section 2.06 shall not be commingled by such Pledgor with any of its other funds or property but shall be held separate and apart therefrom, shall be held in trust for the benefit of the Collateral Agent, for the benefit of the Secured Parties, and shall be forthwith delivered to the Collateral Agent, for the benefit of the Secured Parties, in the same form as so received (endorsed in a manner reasonably satisfactory to the Collateral Agent). Any and all money and other property paid over to or received by the Collateral Agent pursuant to the provisions of this paragraph (b) shall be retained by the Collateral Agent in an account to be established by the Collateral Agent upon receipt of such money or other property and shall be applied in accordance with the provisions of Section 4.02. After all Events of Default have been cured or waived and the Lux Borrower has delivered to the Collateral Agent a certificate of a Responsible Officer to that effect, the Collateral Agent shall promptly repay to each Pledgor (without interest) all dividends, interest, principal or

other distributions that such Pledgor would otherwise be permitted to retain pursuant to the terms of paragraph (a)(iii) of this Section 2.06 and that remain in such account. With respect to Pledged Securities that are ULC Interests, all rights of any Pledgor to receive dividends, interest, principal or other distributions that such Pledgor is authorized to receive pursuant to paragraph (a)(iii) of this Section 2.06 shall continue and not become vested or held in trust for or on behalf of the Collateral Agent.

(c) Upon the occurrence and during the continuance of an Event of Default and after written notice by the Collateral Agent to the Borrowers of the Collateral Agent's intention to exercise its rights hereunder, all rights of any Pledgor to exercise the voting and/or consensual rights and powers it is entitled to exercise pursuant to paragraph (a)(i) of this Section 2.06 with respect to Pledged Securities that are not ULC Interests, and the obligations of the Collateral Agent under paragraph (a)(ii) of this Section 2.06, shall cease, and all such rights shall thereupon become vested in the Collateral Agent, for the benefit of the Secured Parties, which shall have the sole and exclusive right and authority to exercise such voting and consensual rights and powers; *provided* that the Collateral Agent shall have the right from time to time following and during the continuance of an Event of Default to permit the Pledgors to exercise such rights. After all Events of Default have been cured or waived and the Lux Borrower has delivered to the Collateral Agent a certificate of a Responsible Officer to that effect, each Pledgor shall have the right to exercise the voting and/or consensual rights and powers that such Pledgor would otherwise be entitled to exercise pursuant to the terms of paragraph (a)(i) above and the obligations of the Collateral Agent under paragraph (a)(ii) shall be in effect. With respect to Pledged Securities that are ULC Interests, all rights of any Pledgor to exercise the voting and/or other consensual rights and powers that such Pledgor is authorized to exercise pursuant to paragraph (a)(i) of this Section 2.06 shall continue and all such rights shall not become vested in the Collateral Agent or the Collateral Agent for the benefit of the Secured Parties.

SECTION 2.07. ***Unlimited Liability Corporations.*** Notwithstanding the grant of security interest made by a Pledgor in favor of the Collateral Agent, its successor and assigns, for the benefit of the Secured Parties, of all of its Pledged Securities, any Pledgor that controls any interest (for the purposes of this Article II, "***ULC Interests***") in any unlimited liability corporation (for the purposes of this Article II, a "***ULC***") pledged hereunder shall remain registered as the sole registered and beneficial owner of such ULC Interests and will remain as registered and beneficial owner until such time as, subject to the terms of any applicable Intercreditor Agreement, such ULC Interests are effectively transferred into the name of the Collateral Agent or any other person on the books and records of such ULC. Nothing in this Agreement is intended to or shall constitute the Collateral Agent or any person as a shareholder of any ULC until such time as notice is given to such ULC and further steps are taken thereunder so as to register the Collateral Agent or any other person as the holder of the ULC Interests of such ULC. To the extent any provision hereof would have the effect of constituting the Collateral Agent or any other person as a shareholder of a ULC prior to such time, such provision shall be severed therefrom and ineffective with respect to the ULC Interests of such ULC without otherwise invalidating or rendering unenforceable this Agreement or invalidating or rendering unenforceable such provision insofar as it relates to Pledged Stock which are not

ULC Interests. Except upon the exercise of rights to sell or otherwise dispose of ULC Interests following the occurrence and during the continuance of an Event of Default hereunder, no Pledgor shall cause or permit, or enable any ULC in which it holds ULC Interests to cause or permit, the Collateral Agent to: (a) be registered as shareholders of such ULC; (b) have any notation entered in its favor in the share register of such ULC; (c) be held out as a shareholder of such ULC; (d) receive, directly or indirectly, any dividends, property or other distributions from such ULC by reason of the Collateral Agent holding a security interest in such ULC; or (e) act as a shareholder of such ULC, or exercise any rights of a shareholder of such ULC including the right to attend a meeting of, or to vote the shares of, such ULC.

ARTICLE III

Security Interests in Other Personal Property

SECTION 3.01. *Security Interest.* (a) As security for the payment or performance when due (whether at the stated maturity, by acceleration or otherwise), as the case may be, in full of its Secured Obligations, each Pledgor hereby assigns and pledges to the Collateral Agent, its successors and permitted assigns, for the benefit of the Secured Parties, and hereby grants to the Collateral Agent, its successors and permitted assigns, for the benefit of the Secured Parties, a security interest (the “*Security Interest*”) in all right, title and interest in or to any and all of the following assets and properties now owned or at any time hereafter acquired by such Pledgor or in which such Pledgor now has or at any time in the future may acquire any right, title or interest (collectively, the “*Article 9 Collateral*”):

- (i) all Accounts;
- (ii) all Chattel Paper;
- (iii) all cash and Deposit Accounts;
- (iv) all Documents;
- (v) all Equipment;
- (vi) all Fixtures;
- (vii) all General Intangibles (including, without limitation, all Intellectual Property);
- (viii) all Instruments (other than Pledged Debt, which is governed by Article II);
- (ix) all Inventory and all other Goods not otherwise described above;
- (x) all Investment Property (other than the Pledged Collateral and Pledged Debt, which are governed by Article II);

- (xi) all Letters of Credit and Letter of Credit Rights;
- (xii) all Commercial Tort Claims individually in excess of \$5,000,000, as described on *Schedule IV* (as may be supplemented from time to time pursuant to Section 3.04);
- (xiii) all books and records, customer lists, credit files, programs, printouts and other computer materials and records pertaining to the Article 9 Collateral; and
- (xiv) to the extent not otherwise included, all Proceeds, Supporting Obligations and products of any and all of the foregoing and all collateral security and guarantees given by any person with respect to any of the foregoing.

Notwithstanding anything to the contrary in this Agreement, the other Credit Agreement Documents, the other New First Lien Notes Documents, the other Existing First Lien Notes Documents or any Specified Other First Lien Agreement, this Agreement shall not constitute a grant of a security interest in (and the Article 9 Collateral shall not include), and the other provisions of the Credit Agreement Documents, the New First Lien Notes Documents, the Existing First Lien Notes Documents and any Specified Other First Lien Agreement with respect to Collateral need not be satisfied with respect to, the Excluded Property or the Excluded Securities.

(b) Each Pledgor hereby irrevocably authorizes the Collateral Agent at any time and from time to time to file in any relevant United States jurisdiction any initial financing statements (including fixture filings) with respect to the Article 9 Collateral or any part thereof and amendments thereto that contain the information required by Article 9 of the Uniform Commercial Code of each applicable jurisdiction for the filing of any financing statement or amendment, including (i) whether such Pledgor is an organization, the type of organization and any organizational identification number issued to such Pledgor, (ii) in the case of a financing statement filed as a fixture filing, a sufficient description of the real property to which such Article 9 Collateral relates and (iii) a description of collateral that describes such property in any other manner as the Collateral Agent may reasonably determine is necessary or advisable to ensure the perfection of the Security Interest in the Collateral granted under this Agreement, including describing such property as “all assets” or “all personal property”. Each Pledgor agrees to provide such information to the Collateral Agent promptly upon request.

The Collateral Agent is further authorized to file with the United States Patent and Trademark Office or United States Copyright Office (or any successor office) such documents as may be reasonably necessary or advisable for the purpose of perfecting, confirming, continuing, enforcing or protecting the Security Interest granted by each Pledgor in such Pledgor’s Patents, Trademarks and Copyrights, without the signature of such Pledgor, and naming such Pledgor or the Pledgors as debtors and the Collateral Agent as secured party.

(c) The Security Interest is granted as security only and shall not subject the Collateral Agent or any other Secured Party to, or in any way alter or modify, any obligation or liability of any Pledgor with respect to or arising out of the Article 9 Collateral.

(d) Notwithstanding anything to the contrary in this Agreement, in no event shall (A) any control agreements or control, lockbox or similar agreements or arrangements be required with respect to any Deposit Accounts, Securities Accounts, Commodities Accounts or any other assets (other than the delivery of Pledged Securities to the Collateral Agent to the extent required by Article II) except as expressly provided in Section 5.13 of the Credit Agreement, Section 4.20 of the New First Lien Notes Indenture and Section 13.01(a)(i) of the Existing First Lien Notes Indenture, (B) any landlord, mortgagee and bailee waivers be required or (C) notices be sent to account debtors or other contractual third parties, except, subject to the terms of any applicable Intercreditor Agreement, in connection with a permitted exercise of remedies under this Agreement, any other Credit Agreement Document, any other New First Lien Notes Document, any other Existing First Lien Notes Document or any Specified Other First Lien Agreement.

SECTION 3.02. *Representations and Warranties.* The Pledgors jointly and severally represent and warrant to the Collateral Agent, for the benefit of the Secured Parties, that:

(a) Each Pledgor has good and valid rights in and title to the Article 9 Collateral with respect to which it has purported to grant the Security Interest hereunder, except where the failure to have such rights and title would not reasonably be expected to have individually or in the aggregate, a Material Adverse Effect, and has full power and authority to grant to the Collateral Agent the Security Interest in such Article 9 Collateral pursuant hereto, and to execute, deliver and perform its obligations in accordance with the terms of this Agreement (or any supplement hereto, as applicable), without the consent or approval of any other person as of the Closing Date other than any consent or approval that has been obtained and is in full force and effect or has otherwise been disclosed herein or in the Credit Agreement, the New First Lien Notes Indenture, the Existing First Lien Notes Indenture, any Specified Other First Lien Agreement or any offering circular related thereto, as applicable.

(b) The Perfection Certificate has been duly prepared, completed and executed and the information set forth therein, including the exact legal name of each Pledgor, is correct and complete, in all material respects, as of the Closing Date. Except as provided in Section 5.10 of the Credit Agreement, Sections 4.18 and 4.19 of the New First Lien Notes Indenture or Sections 4.18 and 4.19 of the Existing First Lien Notes Indenture or in the definition of “Collateral and Guarantee Requirement” contained in the Credit Agreement, the New First Lien Notes Indenture or the Existing First Lien Notes Indenture, the Uniform Commercial Code financing statements or other appropriate filings, recordings or registrations containing a description of the Article 9 Collateral that have been prepared for filing in each governmental, municipal or other office specified in the Perfection Certificate constitute all the filings, recordings and registrations (other than filings required to be made in the United States Patent and Trademark Office and the United States Copyright Office in order to perfect the Security Interest in Article 9 Collateral consisting of United States Patents, United States registered

Trademarks and United States registered Copyrights) that are necessary as of the Closing Date to publish notice of and protect the validity of and to establish a legal, valid and perfected security interest in favor of the Collateral Agent (for the benefit of the Secured Parties) in respect of all Article 9 Collateral in which the Security Interest may be perfected by filing, recording or registration in the United States (or any political subdivision thereof), and no further or subsequent filing, refiling, recording, rerecording, registration or reregistration is necessary in any such jurisdiction, except as provided under applicable law with respect to the filing of continuation statements or amendments. Except as provided in Section 5.10 of the Credit Agreement, Sections 4.18 and 4.19 of the New First Lien Notes Indenture or Sections 4.18 and 4.19 of the Existing First Lien Notes Indenture, each Pledgor represents and warrants that the Notices of Grant of Security Interest in Intellectual Property executed by the applicable Pledgors containing descriptions of all Article 9 Collateral that consists of United States federally issued Patents (and Patents for which United States federal registration applications are pending), United States federally registered Trademarks (and Trademarks for which United States federal registration applications are pending) and United States federally registered Copyrights (and Copyrights for which United States federal registration applications are pending) have been delivered to the Collateral Agent for recording with the United States Patent and Trademark Office and the United States Copyright Office pursuant to 35 U.S.C. § 261, 15 U.S.C. § 1060 or 17 U.S.C. § 205 and the regulations thereunder, as applicable, and reasonably requested by the Collateral Agent, to protect the validity of and to establish a legal, valid and perfected security interest (or, in the case of Patents and Trademarks, notice thereof) in favor of the Collateral Agent, for the benefit of the Secured Parties, in respect of all Article 9 Collateral consisting of such Intellectual Property described in such Notices of Grant of Security Interest in Intellectual Property as of the Closing Date in which a security interest may be perfected by recording with the United States Patent and Trademark Office and the United States Copyright Office, and no further or subsequent filing, refiling, recording, rerecording, registration or reregistration is necessary (other than such actions as are necessary to perfect the Security Interest with respect to any Article 9 Collateral consisting of United States federally issued, registered or pending Patents, Trademarks and Copyrights acquired or developed after the Closing Date).

(c) The Security Interest constitutes (i) a legal and valid security interest in all the Article 9 Collateral securing the payment and performance of the Secured Obligations, as applicable, (ii) subject to the filings described in Section 3.02(b), as of the Closing Date a perfected security interest in all Article 9 Collateral in which a security interest may be perfected by filing, recording or registering a financing statement or analogous document in the United States (or any political subdivision thereof) pursuant to the Uniform Commercial Code or other applicable law in such jurisdictions and (iii) a security interest that shall be perfected in all Article 9 Collateral in which a security interest may be perfected upon the receipt and recording of the Notices of Grant of Security Interest in Intellectual Property with the United States Patent and Trademark Office and the United States Copyright Office, as applicable, upon the making of such filings with such offices. The Security Interest is and shall be prior to any other Lien on any of the Article 9 Collateral other than Permitted Liens.

(d) The Article 9 Collateral is owned by the Pledgors free and clear of any Lien, other than Permitted Liens. None of the Pledgors has filed or consented to the filing of (i) any financing statement or analogous document under the Uniform Commercial Code or any

other applicable laws covering any Article 9 Collateral, (ii) any assignment in which any Pledgor assigns any Article 9 Collateral or any security agreement or similar instrument covering any Article 9 Collateral with the United States Patent and Trademark Office or the United States Copyright Office for the benefit of a third party or (iii) any assignment in which any Pledgor assigns any Article 9 Collateral or any security agreement or similar instrument covering any Article 9 Collateral with any foreign governmental, municipal or other office, which financing statement or analogous document, assignment, security agreement or similar instrument is still in effect, except, in each case, for Permitted Liens.

(e) No Pledgor holds any Commercial Tort Claim individually reasonably estimated to exceed \$5,000,000 as of the Closing Date except as indicated on *Schedule IV*.

(f) As to itself and its Article 9 Collateral consisting of Intellectual Property (the “*Intellectual Property Collateral*”), to each Pledgor’s knowledge:

(i) The Intellectual Property Collateral set forth on *Schedule III* includes a true and complete list of all of the issued and applied for United States federal Patents, registered and applied for United States federal Trademarks and material United States federal registered Copyrights owned by such Pledgor as of the date hereof.

(ii) The Intellectual Property Collateral is subsisting and has not been adjudged invalid or unenforceable in whole or in part and, to the best of such Pledgor’s knowledge, is valid and enforceable, except as would not reasonably be expected to have a Material Adverse Effect. Such Pledgor is not aware of any current uses of any item of Intellectual Property Collateral that would be expected to lead to such item becoming invalid or unenforceable, except as would not reasonably be expected to have a Material Adverse Effect.

(iii) Except as would not reasonably be expected to have a Material Adverse Effect, (A) such Pledgor has made or performed all commercially reasonable acts, including without limitation filings, recordings and payment of all required fees and taxes, required to maintain and protect its interest in each and every item of Intellectual Property Collateral in full force and effect in the United States, and (B) such Pledgor has used proper statutory notice in connection with its use of each Patent, Trademark and Copyright in the Intellectual Property Collateral.

(iv) With respect to each IP Agreement, the absence, termination or violation of which would reasonably be expected to have a Material Adverse Effect: (A) such Pledgor has not received any notice of termination or cancellation under such IP Agreement; (B) such Pledgor has not received a notice of a breach or default under such IP Agreement, which breach or default has not been cured or waived; and (C) such Pledgor is not in breach or default thereof in any material respect, and no event has occurred that, with notice or lapse of time

or both, would constitute such a breach or default or permit termination, modification or acceleration under such IP Agreement.

(v) Except as would not reasonably be expected to have a Material Adverse Effect, no Intellectual Property Collateral is subject to any outstanding consent, settlement, decree, order, injunction, judgment or ruling restricting the use of any Intellectual Property Collateral or that would impair the validity or enforceability of such Intellectual Property Collateral.

SECTION 3.03. **Covenants.** (a) Each Pledgor agrees promptly to notify the Collateral Agent of any change in (i) its corporate or organization name, (ii) its identity or type of organization, (iii) its organizational identification number or (iv) its jurisdiction of organization. Each Pledgor agrees not to effect or permit any change referred to in the first sentence of this paragraph (a) unless all filings have been made, or will have been made within any applicable statutory period, under the Uniform Commercial Code that are required in order for the Collateral Agent to continue at all times following such change to have a valid, legal and perfected security interest in all the Article 9 Collateral in which a security interest may be perfected by such filing, for the benefit of the Secured Parties.

(b) Subject to any rights of such Pledgor to Dispose of Collateral provided for in the Credit Agreement Documents, the New First Lien Notes Documents, the Existing First Lien Notes Documents and each Specified Other First Lien Agreement, each Pledgor shall, at its own expense, use commercially reasonable efforts to defend title to the Article 9 Collateral against all persons and to defend the Security Interest of the Collateral Agent, for the benefit of the Secured Parties, in the Article 9 Collateral and the priority thereof against any Lien that is not a Permitted Lien.

(c) Each Pledgor agrees, at its own expense, to execute, acknowledge, deliver and cause to be duly filed all such further instruments and documents and take all such actions as the Collateral Agent may from time to time reasonably request to better assure, preserve, protect, defend and perfect the Security Interest and the rights and remedies created hereby, including the payment of any fees and taxes together with any interest and penalties, if any, required in connection with the execution and delivery of this Agreement and the granting of the Security Interest (except Luxembourg registration duties (*droits d'enregistrement*) payable due to a registration, submission or filing by the Collateral Agent, the Credit Agreement Agent, the New First Lien Trustee, the Existing First Lien Trustee, any other Authorized Representative, a Lender or any other Secured Party of this Agreement except if such registration, submission or filing is required to maintain, establish, enforce or preserve the rights of such person under this Agreement) and the filing of any financing statements (including fixture filings) or other documents in connection herewith or therewith, all in accordance with the terms hereof and the terms of the Credit Agreement, the New First Lien Notes Indenture and the Existing First Lien Notes Indenture and subject to the applicable Agreed Guarantee and Security Principles (to the extent applicable). Without limiting the generality of the foregoing, each Pledgor hereby authorizes the Collateral Agent, with prompt notice thereof to the Pledgors, to supplement this Agreement by supplementing *Schedule III* or adding additional schedules hereto to specifically identify any asset or item that may constitute a material issued or applied for United States

federal Patent, material registered or applied for United States Trademark or material registered United States federal Copyright; *provided* that any Pledgor shall have the right, exercisable within 90 days after the Lux Borrower has been notified by the Collateral Agent of the specific identification of such Article 9 Collateral (or such later date as the Collateral Agent may agree in its sole discretion), to advise the Collateral Agent in writing of any inaccuracy of the representations and warranties made by such Pledgor hereunder with respect to such Article 9 Collateral. Each Pledgor agrees that it will use its commercially reasonable efforts to take such action as shall be necessary in order that all representations and warranties hereunder shall be true and correct with respect to such Article 9 Collateral within 45 days after the date it has been notified by the Collateral Agent of the specific identification of such Article 9 Collateral (or such later date as the Collateral Agent may agree in its sole discretion).

(d) After the occurrence and during the continuance of an Event of Default and subject to the terms of any applicable Intercreditor Agreement, each Pledgor will permit any representatives designated by the Collateral Agent or any Secured Party (pursuant to a request made through the Collateral Agent), at reasonable times upon reasonable prior notice, (i) to inspect the Article 9 Collateral (including to verify under reasonable procedures the validity, amount, quality, quantity, value, condition and status of, or any other matter relating to, the Article 9 Collateral), and including, in the case of Accounts or Article 9 Collateral in the possession of any third person, by contacting Account Debtors or the third person possessing such Article 9 Collateral for the purpose of making such a verification, (ii) to examine and make copies of the records of such Pledgor relating to the Article 9 Collateral and (iii) to discuss the Article 9 Collateral and related records of such Pledgor with, and to be advised as to the same by, such Pledgor's officers and employees. The Collateral Agent shall have the right to share any information it gains from such inspection or verification with any Secured Party, subject to Section 9.16 of the Credit Agreement and any equivalent provision of any Specified Other First Lien Agreement.

(e) The Collateral Agent may discharge past due taxes, assessments, charges, fees, Liens, security interests or other encumbrances at any time levied or placed on the Article 9 Collateral and not a Permitted Lien, and may pay for the maintenance and preservation of the Article 9 Collateral to the extent any Pledgor fails to do so as required by the Credit Agreement, the New First Lien Notes Indenture, the Existing First Lien Notes Indenture, this Agreement or any Specified Other First Lien Agreement, and each Pledgor jointly and severally agrees to reimburse the Collateral Agent on demand for any reasonable and documented payment made or any reasonable and documented out-of-pocket expense incurred by the Collateral Agent pursuant to the foregoing authorization; *provided, however*, that nothing in this Section 3.03(e) shall be interpreted as excusing any Pledgor from the performance of, or imposing any obligation on the Collateral Agent or any Secured Party to cure or perform, any covenants or other promises of any Pledgor with respect to taxes, assessments, charges, fees, Liens, security interests or other encumbrances and maintenance as set forth herein, in the other Credit Agreement Documents, the other New First Lien Notes Documents, the other Existing First Lien Notes Documents or any Specified Other First Lien Agreement.

(f) Each Pledgor (rather than the Collateral Agent or any Secured Party) shall remain liable for the observance and performance of all the conditions and obligations to be

observed and performed by it under each contract, agreement or instrument relating to the Article 9 Collateral and each Pledgor jointly and severally agrees to indemnify and hold harmless the Collateral Agent and the Secured Parties from and against any and all liability for such performance.

(g) None of the Pledgors shall make or permit to be made an assignment, pledge or hypothecation of the Article 9 Collateral owned by it or in which it has an interest or shall grant any other Lien in respect of the Article 9 Collateral owned by it or in which it has an interest, except as not prohibited by the Credit Agreement, the New First Lien Notes Indenture, the Existing First Lien Notes Indenture or any Specified Other First Lien Agreement. None of the Pledgors shall make or permit to be made any transfer of the Article 9 Collateral owned by it or in which it has an interest, except as not prohibited by the Credit Agreement, the New First Lien Notes Indenture, the Existing first Lien Notes Indenture, any Specified Other First Lien Agreement or any Intercreditor Agreement.

(h) Each Pledgor irrevocably makes, constitutes and appoints the Collateral Agent (and all officers, employees or agents designated by the Collateral Agent) as such Pledgor's true and lawful agent (and attorney-in-fact) for the purpose, during the continuance of an Event of Default of making, settling and adjusting claims in respect of Article 9 Collateral under policies of insurance, endorsing the name of such Pledgor on any check, draft, instrument or other item of payment for the proceeds of such policies of insurance and for making all determinations and decisions with respect thereto. In the event that any Pledgor at any time or times shall fail to obtain or maintain any of the policies of insurance required by the Credit Agreement Documents, the New First Lien Notes Documents, the Existing First Lien Notes Documents or any Specified Other First Lien Agreement or to pay any premium in whole or part relating thereto, the Collateral Agent may, without waiving or releasing any obligation or liability of the Pledgors hereunder or any Event of Default, in its sole discretion, subject to the terms of any applicable Intercreditor Agreement, obtain and maintain such policies of insurance and pay such premium and take any other actions with respect thereto as the Collateral Agent reasonably deems advisable. All sums disbursed by the Collateral Agent in connection with this Section 3.03(h), including reasonable and documented attorneys' fees, court costs, expenses and other charges relating thereto, shall be payable, upon demand, by the Pledgors to the Collateral Agent and shall be additional Secured Obligations secured hereby.

(i) Each Pledgor shall keep and maintain, in all material respects, complete, accurate and proper books and records with respect to the Article 9 Collateral owned by such Pledgor, and, after the occurrence and during the continuance of an Event of Default, furnish to the Collateral Agent, such reports relating to the Article 9 Collateral as the Collateral Agent shall from time to time reasonably request.

SECTION 3.04. *Other Actions.* In order to further ensure the attachment, perfection and priority of, and the ability of the Collateral Agent to enforce, for the benefit of the Secured Parties, the Security Interest in the Article 9 Collateral, each Pledgor agrees, in each case at such Pledgor's own expense, to take the following actions with respect to the following Article 9 Collateral:

(a) *Instruments and Tangible Chattel Paper.* If any Pledgor shall at any time own or acquire any Instruments (other than debt obligations which constitute Pledged Debt and checks received and processed in the ordinary course of business) or Tangible Chattel Paper, in each case evidencing an individual amount in excess of \$5,000,000, such Pledgor shall promptly (and in any event within 50 days of its acquisition or such longer period as the Collateral Agent may permit in its sole discretion) endorse, assign and deliver the same to the Collateral Agent, accompanied by such instruments of transfer or assignment duly executed in blank as the Collateral Agent may from time to time reasonably request.

(b) *Commercial Tort Claims.* If any Pledgor shall at any time hold or acquire a Commercial Tort Claim in an amount reasonably estimated to exceed \$5,000,000, such Pledgor shall promptly notify the Collateral Agent thereof in a writing signed by such Pledgor, including a summary description of such claim, and deliver to the Collateral Agent in writing a supplement to *Schedule IV* including such description.

(c) *Letter-of-Credit Rights.* Each Pledgor will, upon the Collateral Agent's request, use commercially reasonable efforts to cause each issuer of a letter of credit in an amount in excess of \$5,000,000, to consent to the assignment of proceeds of the letter of credit in order to give the Collateral Agent control of the letter-of-credit rights to such letter of credit.

SECTION 3.05. *Covenants Regarding Patent, Trademark and Copyright Collateral.* Except as not prohibited by the Credit Agreement, the New First Lien Notes Indenture, the Existing First Lien Notes Indenture or any Specified Other First Lien Agreement:

(a) Each Pledgor agrees that it will not knowingly do any act or omit to do any act (and will exercise commercially reasonable efforts to prevent its licensees from doing any act or omitting to do any act) whereby any Patent that is material to the normal conduct of such Pledgor's business may become prematurely invalidated, abandoned, lapsed or dedicated to the public.

(b) Each Pledgor will, and will use its commercially reasonable efforts to cause its licensees or its sublicensees to, for each material Trademark necessary to the normal conduct of such Pledgor's business, (i) maintain such Trademark in full force free from any adjudication of abandonment or invalidity for non-use and (ii) maintain the quality of products and services offered under such Trademark in a manner consistent with the operation of such Pledgor's business.

(c) Each Pledgor shall notify the Collateral Agent promptly if it knows that any United States federally issued or applied for Patent, United States federally registered or applied for Trademark or United States federally registered Copyright material to the normal conduct of such Pledgor's business may imminently become abandoned, lapsed or dedicated to the public, or of any materially adverse determination or development, excluding office actions and similar determinations or developments in the United States Patent and Trademark Office, United States Copyright Office, any court or any similar office of any country, regarding such Pledgor's ownership of any such material Patent, Trademark or Copyright or its right to register or to maintain the same.

(d) Each Pledgor, either by itself or through any agent, employee, licensee or designee, shall (i) inform the Collateral Agent on an annual basis (with any such notification to be included in an updated Perfection Certificate required pursuant to Section 5.04(f) of the Credit Agreement) of each application for, or registration or issuance of, any Patent or Trademark with the United States Patent and Trademark Office and each registration of any Copyright with the United States Copyright Office filed by or on behalf of, or issued to, or acquired by, any Pledgor during the preceding 12-month period and (ii) upon the reasonable request of the Collateral Agent, execute and deliver any and all agreements, instruments, documents and papers necessary, or as reasonably requested by the Collateral Agent, to evidence the Collateral Agent's Security Interest in such Patent, Trademark or Copyright and the perfection thereof, *provided* that any such Patent, Trademark or Copyright created or acquired after the Closing Date shall automatically become subject to the Security Interest and constitute Collateral to the extent such would have constituted Collateral if owned at Closing Date without further action by any party.

(e) Each Pledgor shall exercise its reasonable business judgment consistent with its past practice in any proceeding before the United States Patent and Trademark Office or the United States Copyright Office with respect to maintaining and pursuing each application relating to any Patent, Trademark and/or Copyright (and obtaining the relevant grant or registration) material to the normal conduct of such Pledgor's business and to maintain (i) each United States federally issued Patent that is material to the normal conduct of such Pledgor's business and (ii) the registrations of each United States federally registered Trademark and each United States federally registered Copyright, in each case that is material to the normal conduct of such Pledgor's business, including, when applicable and necessary in such Pledgor's reasonable business judgment, timely filings of applications for renewal, affidavits of use, affidavits of incontestability and payment of maintenance fees, and, if any Pledgor believes necessary in its reasonable business judgment, to initiate opposition, interference and cancellation proceedings against third parties.

(f) In the event that any Pledgor knows or has reason to know that any Article 9 Collateral consisting of a Patent, Trademark or Copyright material to the normal conduct of its business has been materially infringed, misappropriated or diluted by a third party, such Pledgor shall promptly notify the Collateral Agent and shall, if such Pledgor deems it necessary in its reasonable business judgment, promptly sue and recover any and all damages, and take such other actions as are reasonably appropriate under the circumstances.

(g) Upon and during the continuance of an Event of Default, at the request of the Applicable Agent, each Pledgor shall use commercially reasonable efforts to obtain all requisite consents or approvals from each licensor under each Copyright License, Patent License or Trademark License to effect the assignment of all such Pledgor's right, title and interest thereunder to (in the Applicable Agent's sole discretion) the designee of the Applicable Agent or the Applicable Agent; *provided, however*, that nothing contained in this Section 3.05(g) should be construed as an obligation of any Pledgor to incur any costs or expenses in connection with obtaining such approval.

ARTICLE IV

Remedies

SECTION 4.01. *Remedies Upon Default.* In accordance with, and to the extent consistent with, the terms of any applicable Intercreditor Agreement, the Collateral Agent may take any action specified in this Section 4.01. Upon the occurrence and during the continuance of an Event of Default, each Pledgor agrees to deliver each item of Collateral to the Collateral Agent on demand, subject to the terms of any applicable Intercreditor Agreement. Subject to the terms of any applicable Intercreditor Agreement, it is agreed that the Collateral Agent shall have the right to take any of or all the following actions at the same or different times upon the occurrence and during the continuance of an Event of Default: (a) those rights and remedies provided in this Agreement, the Credit Agreement, any other Credit Agreement Document, the New First Lien Notes Indenture, any other New First Lien Notes Document, the Existing First Lien Notes Indenture, any other Existing First Lien Notes Document or Specified Other First Lien Agreement (as applicable), (b) with respect to any Article 9 Collateral consisting of Intellectual Property, on demand, to cause the Security Interest to become an assignment, transfer and conveyance of any of or all such Article 9 Collateral by the applicable Pledgors to the Collateral Agent or to license or sublicense (subject to any such licensee's obligation to maintain the quality of the goods and/or services provided under any Trademark consistent with the quality of such goods and/or services provided by the Pledgors immediately prior to the Event of Default), whether general, special or otherwise, and whether on an exclusive or a nonexclusive basis, any such Article 9 Collateral throughout the world on such terms and conditions and in such manner as the Collateral Agent shall determine (other than in violation of any then-existing licensing or trademark co-existence arrangements to the extent that waivers thereunder cannot be obtained with the use of commercially reasonable efforts, which each Pledgor hereby agrees to use) and (c) with or without legal process and with or without prior notice or demand for performance, to take possession of the Article 9 Collateral and without liability for trespass to the applicable Pledgor to enter any premises where the Article 9 Collateral or any records relating to the Article 9 Collateral may be located for the purpose of taking possession of or removing the Article 9 Collateral and, generally, to exercise any and all rights afforded to a secured party under the Uniform Commercial Code or other applicable law (including, without limitation, any law governing the exercise of a bank's right of setoff or bankers' lien) or in equity. The Collateral Agent agrees and covenants not to exercise any of the rights or remedies set forth in the preceding sentence unless and until the occurrence and during the continuance of an Event of Default and subject to the terms of any applicable Intercreditor Agreement. Without limiting the generality of the foregoing, each Pledgor agrees that the Collateral Agent shall have the right, subject to the mandatory requirements of applicable law and subject to the terms of any applicable Intercreditor Agreement, to sell or otherwise Dispose of all or any part of the Collateral at a public or private sale or at any broker's board or on any securities exchange, for cash, upon credit or for future delivery, as the Collateral Agent shall deem appropriate. The Collateral Agent shall be authorized in connection with any sale of a security (if it deems it advisable to do so) pursuant to the foregoing to restrict the prospective bidders or purchasers to persons who represent and agree that they are purchasing such security for their own account, for investment, and not with a view to the distribution or sale thereof. Upon consummation of any such Disposition of Collateral pursuant to this Section 4.01 the

Collateral Agent shall have the right to assign, transfer and deliver to the purchaser or purchasers thereof the Collateral so sold (other than in violation of any then-existing licensing or trademark co-existence arrangements to the extent that waivers thereunder cannot be obtained with the use of commercially reasonable efforts, which each Pledgor hereby agrees to use). Each such purchaser at any such Disposition shall hold the property sold absolutely, free from any claim or right on the part of any Pledgor, and each Pledgor hereby waives and releases (to the extent permitted by law) all rights of redemption, stay, valuation and appraisal that such Pledgor now has or may at any time in the future have under any rule of law or statute now existing or hereafter enacted.

The Collateral Agent shall give the applicable Pledgors 10 Business Days' written notice (which each Pledgor agrees is reasonable notice within the meaning of Section 9-611 of the Uniform Commercial Code or its equivalent in other jurisdictions) of the Collateral Agent's intention to make any sale of Collateral. Such notice, in the case of a public sale, shall state the time and place for such sale and, in the case of a sale at a broker's board or on a securities exchange, shall state the board or exchange at which such sale is to be made and the day on which the Collateral, or portion thereof, will first be offered for sale at such board or exchange. Any such public sale shall be held at such time or times within ordinary business hours and at such place or places as the Collateral Agent may fix and state in the notice (if any) of such sale, and each Pledgor agrees that the internet shall constitute a "place" for purposes of Section 9-610(b) of the Uniform Commercial Code. At any such sale, the Collateral, or the portion thereof, to be sold may be sold in one lot as an entirety or in separate parcels, as the Collateral Agent may (in its sole and absolute discretion) determine. The Collateral Agent shall not be obligated to make any sale of any Collateral if it shall determine not to do so, regardless of the fact that notice of sale of such Collateral shall have been given. The Collateral Agent may, without notice or publication, adjourn any public or private sale or cause the same to be adjourned from time to time by announcement at the time and place fixed for sale, and such sale may, without further notice, be made at the time and place to which the same was so adjourned. In the case of any sale of all or any part of the Collateral made on credit or for future delivery, the Collateral so sold may be retained by the Collateral Agent, subject to the terms of any applicable Intercreditor Agreement, until the sale price is paid by the purchaser or purchasers thereof, but the Collateral Agent shall not incur any liability in the event that any such purchaser or purchasers shall fail to take up and pay for the Collateral so sold and, in the case of any such failure, such Collateral may be sold again upon notice given in accordance with provisions above. At any public (or, to the extent permitted by law, private) sale made pursuant to this Section 4.01, subject to the terms of any applicable Intercreditor Agreement, any Secured Party may bid for or purchase for cash, free (to the extent permitted by law) from any right of redemption, stay, valuation or appraisal on the part of any Pledgor (all such rights being also hereby waived and released to the extent permitted by law), the Collateral or any part thereof offered for sale and such Secured Party may, upon compliance with the terms of sale, hold, retain and Dispose of such property in accordance with Section 4.02 without further accountability to any Pledgor therefor. For purposes hereof, a written agreement to purchase the Collateral or any portion thereof shall be treated as a sale thereof; the Collateral Agent shall be free to carry out such sale pursuant to such agreement and no Pledgor shall be entitled to the return of the Collateral or any portion thereof subject thereto, notwithstanding the fact that after the Collateral Agent shall have entered into such an agreement all Events of Default shall have been remedied and the Secured Obligations paid in full. As an

alternative to exercising the power of sale herein conferred upon it, the Collateral Agent may, subject to the terms of any applicable Intercreditor Agreement, proceed by a suit or suits at law or in equity to foreclose this Agreement and to sell the Collateral or any portion thereof pursuant to a judgment or decree of a court or courts having competent jurisdiction or pursuant to a proceeding by a court-appointed receiver. Any sale pursuant to the provisions of this Section 4.01 shall be deemed to conform to the commercially reasonable standards as provided in Section 9-610(b) of the Uniform Commercial Code or its equivalent in other jurisdictions.

SECTION 4.02. *Application of Proceeds.* The Collateral Agent shall, subject to any applicable Intercreditor Agreement, promptly apply the proceeds, moneys or balances of any collection or sale of Collateral realized through the exercise by the Collateral Agent of its remedies hereunder, as well as any Collateral consisting of cash at any time when remedies are being exercised hereunder, as follows:

FIRST, to the payment of all costs and expenses incurred by the Collateral Agent in connection with such collection or sale or otherwise in connection with any Credit Agreement Document, any New First Lien Notes Document, any Existing First Lien Notes Document, any Specified Other First Lien Agreement or any of the Secured Obligations secured by such Collateral, including without limitation all court costs and the fees and expenses of its agents and legal counsel, the repayment of all advances made by the Collateral Agent under any Credit Agreement Document, any New First Lien Notes Document, any Existing First Lien Notes Document or any Specified Other First Lien Agreement on behalf of any Pledgor, any other costs or expenses incurred in connection with the exercise of any right or remedy hereunder or under any other Credit Agreement Document, or New First Lien Notes Document or Existing First Lien Notes Document or any Specified Other First Lien Agreement, and all other fees, indemnities and other amounts, in each case owing or reimbursable to the Collateral Agent under any Credit Agreement Document, New First Lien Notes Documents, Existing First Lien Notes Documents or any Specified Other First Lien Agreement in its capacity as such;

SECOND, to the payment in full of the Secured Obligations secured by such Collateral (the amounts so applied to be distributed between the Credit Agreement Secured Parties, New First Lien Notes Secured Parties, Existing First Lien Notes Secured Parties and any Specified Other First Lien Secured Parties *pro rata* based on the respective amounts of such Secured Obligations owed to them on the date of any such distribution (or in accordance with such other method of distribution as may be set forth in any applicable Intercreditor Agreement)), with (w) the portion thereof distributed to the Credit Agreement Secured Parties to be further distributed in accordance with the order of priority set forth in Section 2.16(b) of the Credit Agreement, (x) the portion thereof distributed to the New First Lien Notes Secured Parties to be further distributed in accordance with the order of priority set forth in Section 6.10 of the New First Lien Notes Indenture, (y) the portion thereof distributed to the Existing First Lien Notes Secured Parties to be further distributed in accordance with the order of priority set forth in Section 6.10 of the Existing First Lien Notes Indenture and (z) the portion thereof distributed to the Secured Parties of any other Series to be further distributed in

accordance with the applicable provisions of the Specified Other First Lien Agreements governing such Series; and

THIRD, to the Pledgors, their successors or assigns, or as a court of competent jurisdiction may otherwise direct;

provided that in no event shall the proceeds of any collection or sale of any Specified Excluded Collateral be applied to the relevant Series of Secured Obligations.

Subject to the terms of any applicable Intercreditor Agreement, the Collateral Agent shall have absolute discretion as to the time of application of any such proceeds, moneys or balances in accordance with this Agreement. Upon the request of the Collateral Agent prior to any distribution under this Section 4.02, each Authorized Representative shall provide to the Collateral Agent certificates, in form and substance reasonably satisfactory to the Collateral Agent, setting forth the respective amounts referred to in this Section 4.02 that each applicable Secured Party or its Authorized Representative believes it is entitled to receive, and the Collateral Agent shall be fully entitled to rely on such certificates. Upon any sale of Collateral by the Collateral Agent (including pursuant to a power of sale granted by statute or under a judicial proceeding), the receipt of the purchase money by the Collateral Agent or of the officer making the sale shall be a sufficient discharge to the purchaser or purchasers of the Collateral so sold and such purchaser or purchasers shall not be obligated to see to the application of any part of the purchase money paid over to the Collateral Agent or such officer or be answerable in any way for the misapplication thereof.

SECTION 4.03. *Securities Act, Etc.* In view of the position of the Pledgors in relation to the Pledged Collateral, or because of other current or future circumstances, a question may arise under the Securities Act of 1933, as amended, or any similar federal statute hereafter enacted analogous in purpose or effect (such Act and any such similar statute as from time to time in effect being called the “*Federal Securities Laws*”) with respect to any Disposition of the Pledged Collateral permitted hereunder. Each Pledgor understands that compliance with the Federal Securities Laws might very strictly limit the course of conduct of the Collateral Agent if the Collateral Agent were to attempt to Dispose of all or any part of the Pledged Collateral, and might also limit the extent to which or the manner in which any subsequent transferee of any Pledged Collateral could Dispose of the same. Similarly, there may be other legal restrictions or limitations affecting the Collateral Agent in any attempt to Dispose of all or part of the Pledged Collateral under applicable Blue Sky or other state securities laws or similar laws analogous in purpose or effect. Each Pledgor acknowledges and agrees that in light of such restrictions and limitations, the Collateral Agent, subject to the terms of any applicable Intercreditor Agreement, in its sole and absolute discretion, (a) may proceed to make such a sale whether or not a registration statement for the purpose of registering such Pledged Collateral or part thereof shall have been filed under the Federal Securities Laws or, to the extent applicable, Blue Sky or other state securities laws and (b) may approach and negotiate with a single potential purchaser to effect such sale. Each Pledgor acknowledges and agrees that any such sale might result in prices and other terms less favorable to the seller than if such sale were a public sale without such restrictions. In the event of any such sale, the Collateral Agent shall incur no responsibility or liability for selling all or any part of the Pledged Collateral at a price that the Collateral Agent,

subject to the terms of any applicable Intercreditor Agreement, in its sole and absolute discretion, may in good faith deem reasonable under the circumstances, notwithstanding the possibility that a substantially higher price might have been realized if the sale were deferred until after registration as aforesaid or if more than a single purchaser were approached. The provisions of this Section 4.03 will apply notwithstanding the existence of a public or private market upon which the quotations or sales prices may exceed substantially the price at which the Collateral Agent sells.

SECTION 4.04. *Collection of Receivables Assets.* Subject to any Intercreditor Agreement, the Collateral Agent may at any time after the occurrence and during the continuance of an Event of Default, by giving each Pledgor written notice, elect to require that the any Accounts of any Pledgor be paid directly to the Collateral Agent for the benefit of the Secured Parties. In such event, each such Pledgor shall, and shall permit the Collateral Agent to, promptly notify the account debtors or obligors under the Accounts owned by such Pledgor of the Collateral Agent's interest therein and direct such account debtors or obligors to make payment of all amounts then or thereafter due under such Accounts directly to the Collateral Agent. Upon receipt of any such notice from the Collateral Agent, each Pledgor shall, so long as an Event of Default is continuing, thereafter hold in trust for the Collateral Agent, on behalf of the Secured Parties, all amounts and proceeds received by it with respect to the Accounts and other Collateral and promptly deliver to the Collateral Agent all such amounts and proceeds in the same form as so received, whether by cash, check, draft or otherwise, with any necessary endorsements. The Collateral Agent shall hold and apply funds so received as provided by the terms of Sections 4.02 and 4.05 hereof.

SECTION 4.05. *Special Collateral Account.* Subject to any Intercreditor Agreement, the Collateral Agent may, at any time after the occurrence and during the continuation of an Event of Default, require all cash proceeds of the Collateral to be deposited in a special non-interest bearing cash collateral account with the Collateral Agent promptly after receipt thereof by a Pledgor and held in such cash collateral account as security for its Secured Obligations. No Pledgor shall have any control whatsoever over such cash collateral account; *provided* that the Collateral Agent shall release all funds in such cash collateral account (less any amounts that have been applied in accordance with the immediately following sentence) to the applicable Pledgor immediately upon the cure or waiver of the applicable Event of Default. Subject to any Intercreditor Agreement, the Collateral Agent may (and shall, at the direction of the Required Lenders, the holders of a majority in principal amount of outstanding New First Lien Notes or Existing First Lien Notes and/or such proportion of the Specified Other First Lien Secured Parties as may be required under any applicable Specified Other First Lien Agreements), from time to time, apply the collected balances in said cash collateral account to the payment of the Secured Obligations then due in accordance with the terms of Section 4.02 hereof and the terms of any applicable Intercreditor Agreement.

SECTION 4.06. *Pledgors' Obligations Upon Event of Default.* Upon the request of the Collateral Agent after the occurrence and during the continuance of an Event of Default, each Pledgor will:

(a) Assembly of Collateral. Assemble and make available to the Collateral Agent the Collateral at a place or places specified by the Collateral Agent that is reasonably convenient to the Collateral Agent and such Pledgor.

(b) Secured Party Access. Permit the Collateral Agent, by the Collateral Agent's representatives and agents, to enter, occupy and use any premises owned or, to the extent lawful and permitted, leased by any of the Pledgors where all or any part of the Collateral is located, to take possession of all or any part of the Collateral, to remove all or any part of the Collateral, and to conduct sales of the Collateral, without any obligation to pay the Pledgor for such use and occupancy; *provided* that the Collateral Agent shall provide the applicable Pledgor with notice thereof prior to such occupancy or use.

ARTICLE V

Miscellaneous

SECTION 5.01. **Notices.** All communications and notices hereunder shall (except as otherwise expressly permitted herein) be in writing and given as provided in Section 9.01 of the Credit Agreement, Section 14.01 of the New First Lien Notes Indenture and Section 14.01 of the Existing First Lien Notes Indenture. All communications and notices to any holders of obligations under any Specified Other First Lien Agreement shall be addressed to the Authorized Representative of such holders at its address set forth in the Specified Other First Lien Secured Party Consent, as such address may be changed by written notice to the Collateral Agent.

SECTION 5.02. **Security Interest Absolute.** To the extent permitted by law, all rights of the Collateral Agent hereunder, the Security Interest in the Article 9 Collateral, the security interest in the Pledged Collateral and all obligations of each Pledgor hereunder shall be absolute and unconditional irrespective of (a) any lack of validity or enforceability of any Credit Agreement Document, any New First Lien Notes Document, any Existing First Lien Notes Document, any Specified Other First Lien Agreement, any other agreement with respect to any of the Secured Obligations or any other agreement or instrument relating to any of the foregoing, (b) any change in the time, manner or place of payment of, or in any other term of, all or any of the Secured Obligations, or any other amendment or waiver of or any consent to any departure from any Credit Agreement Document, any New First Lien Notes Document, any Existing First Lien Notes Document, any Specified Other First Lien Agreement, any Intercreditor Agreement or any other agreement or instrument, (c) any exchange, release or non-perfection of any Lien on other collateral, or any release or amendment or waiver of or consent under or departure from any guarantee, securing or guaranteeing all or any of the Secured Obligations or (d) any other circumstance that might otherwise constitute a defense available to, or a discharge of, any Pledgor in respect of the Secured Obligations or this Agreement (other than a defense of payment or performance of the Secured Obligations (other than contingent indemnification and reimbursement obligations for which no claim has been made)).

SECTION 5.03. **Limitation By Law.** All rights, remedies and powers provided in this Agreement may be exercised only to the extent that the exercise thereof does not violate

any applicable provision of law, and all the provisions of this Agreement are intended to be subject to all applicable mandatory provisions of law that may be controlling and to be limited to the extent necessary so that they shall not render this Agreement invalid, unenforceable, in whole or in part, or not entitled to be recorded, registered or filed under the provisions of any applicable law.

SECTION 5.04. ***Binding Effect; Several Agreements.*** This Agreement shall become effective as to any party to this Agreement when a counterpart hereof executed on behalf of such party shall have been delivered to the Collateral Agent and a counterpart hereof shall have been executed on behalf of the Collateral Agent, and thereafter shall be binding upon such party and the Collateral Agent and their respective permitted successors and assigns, and shall inure to the benefit of such party, the Collateral Agent and the other Secured Parties and their respective permitted successors and assigns, except that no party shall have the right to assign or transfer its rights or obligations hereunder or any interest herein or in the Collateral (and any such assignment or transfer shall be void) except as permitted under this Agreement, the Credit Agreement, the New First Lien Notes Indenture, the Existing First Lien Notes Indenture or any Specified Other First Lien Agreement. This Agreement shall be construed as a separate agreement with respect to each party and may be amended, modified, supplemented, waived or released in accordance with Section 5.09, 5.15 or 5.16, as applicable.

SECTION 5.05. ***Successors and Assigns.*** Whenever in this Agreement any of the parties hereto is referred to, such reference shall be deemed to include the permitted successors and assigns of such party and all covenants, promises and agreements by or on behalf of any Pledgor or the Collateral Agent that are contained in this Agreement shall bind and inure to the benefit of their respective permitted successors and assigns, *provided* that no Pledgor may assign, transfer or delegate any of its rights or obligations under this Agreement except as permitted by Section 5.04.

SECTION 5.06. ***Collateral Agent's Fees and Expenses; Indemnification.***

(a) The parties hereto agree that the Collateral Agent shall be entitled to reimbursement of its reasonable and documented out-of-pocket expenses incurred hereunder by the Pledgors, and the Collateral Agent and other Indemnitees shall be indemnified by the Pledgors, in each case of this clause (a), *mutatis mutandis*, as provided in Section 9.05 of the Credit Agreement, Sections 7.07 and 13.08 of the New First Lien Notes Indenture, Sections 7.07 and 13.08 of the Existing First Lien Notes Indenture and any equivalent provision of any Specified Other First Lien Agreement.

(b) Any such amounts payable as provided hereunder shall be additional Secured Obligations secured hereby and by the other Security Documents. The provisions of this Section 5.06 shall remain operative and in full force and effect regardless of the resignation of the Collateral Agent, the termination of this Agreement, any other Credit Agreement Document, any other New First Lien Notes Document, any other Existing First Lien Notes Document or any Specified Other First Lien Agreement, the consummation of the transactions contemplated hereby, the repayment of any of the Secured Obligations, the invalidity or unenforceability of any term or provision of this Agreement, any other Credit Agreement

Document, any other New First Lien Notes Document, any other Existing First Lien Notes Document or any Specified Other First Lien Agreement, or any investigation made by or on behalf of the Collateral Agent or any other Secured Party.

SECTION 5.07. *Collateral Agent Appointed Attorney-in-Fact.* Subject to the Intercreditor Agreements, each Pledgor hereby appoints the Collateral Agent as the attorney-in-fact of such Pledgor for the purpose of carrying out the provisions of this Agreement and taking any action and executing any instrument that the Collateral Agent may deem necessary or advisable to accomplish the purposes hereof, in each case upon the occurrence and during the continuance of an Event of Default, which appointment is irrevocable and coupled with an interest. Without limiting the generality of the foregoing, subject to applicable Requirements of Law and any Intercreditor Agreements, the Collateral Agent shall have the right, upon the occurrence and during the continuance of an Event of Default and reasonable notice by the Collateral Agent to the Lux Borrower of its intent to exercise such rights, with full power of substitution either in the Collateral Agent's name or in the name of such Pledgor, (a) to receive, endorse, assign or deliver any and all notes, acceptances, checks, drafts, money orders or other evidences of payment relating to the Collateral or any part thereof; (b) to demand, collect, receive payment of, give receipt for and give discharges and releases of all or any of the Collateral; (c) to ask for, demand, sue for, collect, receive and give acquittance for any and all moneys due or to become due under and by virtue of any Collateral; (d) to sign the name of any Pledgor on any invoice or bill of lading relating to any of the Collateral; (e) to send verifications of Accounts to any Account Debtor; (f) to commence and prosecute any and all suits, actions or proceedings at law or in equity in any court of competent jurisdiction to collect or otherwise, realize on all or any of the Collateral or to enforce any rights in respect of any Collateral; (g) to settle, compromise, compound, adjust or defend any actions, suits or proceedings relating to all or any of the Collateral; (h) to notify, or to require any Pledgor to notify, Account Debtors to make payment directly to the Collateral Agent as contemplated by Section 4.04; and (i) to use, sell, assign, transfer, pledge, make any agreement with respect to or otherwise deal with all or any of the Collateral, and to do all other acts and things necessary to carry out the purposes of this Agreement, as fully and completely as though the Collateral Agent were the absolute owner of the Collateral for all purposes; *provided* that nothing herein contained shall be construed as requiring or obligating the Collateral Agent to make any commitment or to make any inquiry as to the nature or sufficiency of any payment received by the Collateral Agent, or to present or file any claim or notice, or to take any action with respect to the Collateral or any part thereof or the moneys due or to become due in respect thereof or any property covered thereby. Notwithstanding anything in this Section 5.07 to the contrary, the Collateral Agent agrees that it will not exercise any rights under the power of attorney provided for in this Section 5.07 unless an Event of Default shall have occurred and be continuing and subject to the terms of any applicable Intercreditor Agreement. The Collateral Agent and the other Secured Parties shall be accountable only for amounts actually received as a result of the exercise of the powers granted to them herein, and neither they nor their officers, directors, employees or agents shall be responsible to any Pledgor for any act or failure to act hereunder, except for their own or their Related Parties' gross negligence or willful misconduct, as determined by a court of competent jurisdiction in a final and non-appealable judgment. For the avoidance of doubt, Section 8.03 of the Credit Agreement, Section 13.08 of the New First Lien Notes Indenture and Section 13.08 of

the Existing First Lien Notes Indenture (or the equivalent provision of any Specified Other First Lien Agreement) shall apply to the Collateral Agent as agent for the Secured Parties hereunder.

SECTION 5.08. *Governing Law.* THIS AGREEMENT AND ANY CLAIMS, CONTROVERSY, DISPUTE OR CAUSES OF ACTION (WHETHER IN CONTRACT OR TORT OR OTHERWISE) BASED UPON, ARISING OUT OF OR RELATING TO THIS AGREEMENT SHALL BE CONSTRUED IN ACCORDANCE WITH AND GOVERNED BY THE LAWS OF THE STATE OF NEW YORK.

SECTION 5.09. *Waivers; Amendment.* (a) No failure or delay by the Collateral Agent or any other Secured Party in exercising any right, power or remedy hereunder or under any other Credit Agreement Document, any other New First Lien Notes Document, any other Existing First Lien Notes Document or any Specified Other First Lien Agreement shall operate as a waiver thereof, nor shall any single or partial exercise of any such right, power or remedy, or any abandonment or discontinuance of steps to enforce such a right, power or remedy, preclude any other or further exercise thereof or the exercise of any other right, power or remedy. The rights, powers and remedies of the Collateral Agent and the other Secured Parties hereunder and under the other Credit Agreement Documents, the other New First Lien Notes Documents, the other Existing First Lien Notes Documents and any Specified Other First Lien Agreements are cumulative and are not exclusive of any rights, powers or remedies that they would otherwise have. No waiver of any provision of this Agreement or consent to any departure by any Pledgor therefrom shall in any event be effective unless the same shall be permitted by paragraph (b) of this Section 5.09, and then such waiver or consent shall be effective only in the specific instance and for the purpose for which given. Without limiting the generality of the foregoing, the making of a Loan or the issuance of a Letter of Credit or the incurrence of any Specified Other First Lien Obligation shall not be construed as a waiver of any Default or Event of Default, regardless of whether the Collateral Agent or any other Secured Party may have had notice or knowledge of such Default or Event of Default at the time. No notice or demand on any Pledgor in any case shall entitle any Pledgor to any other or further notice or demand in similar or other circumstances.

(b) Neither this Agreement nor any provision hereof may be waived, amended or modified except pursuant to an agreement or agreements in writing entered into by the Collateral Agent and the Pledgor or Pledgors with respect to which such waiver, amendment or modification is to apply, subject to (i) any consent required in accordance with Section 9.08 of the Credit Agreement, (ii) any consent required in accordance with Section 9.02 of the New First Lien Notes Indenture, (iii) any consent required in accordance with Section 9.02 of the Existing First Lien Notes Indenture and (iv) the consent of each other Authorized Representative if and to the extent required by (and in accordance with) the applicable Specified Other First Lien Agreement, and except as otherwise provided in any applicable Intercreditor Agreement. For the avoidance of doubt, the Collateral Agent is authorized to amend, supplement or otherwise modify any this Agreement without further consent of any Lender, holder of New First Lien Notes or holder of Existing First Lien Notes in the circumstances expressly contemplated by (i) the definitions of "Junior Liens" or "Other First Liens" in the Credit Agreement or as otherwise permitted by Section 9.08 of the Credit Agreement, (ii) Section 9.01 of the New First Lien Notes Indenture or (iii) Section 9.01 of the Existing First Lien Notes Indenture. The Collateral Agent

may conclusively rely on a certificate of an officer of the Lux Borrower as to whether any amendment contemplated by this Section 5.09(b)(ii) is permitted.

(c) Notwithstanding anything to the contrary contained herein, the Collateral Agent may (in its sole discretion) grant extensions of time or waivers of the requirement for the creation or perfection of security interests in or the obtaining of insurance (including title insurance) or surveys with respect to particular assets or the taking of any other action contemplated by this Agreement, the other Credit Agreement Documents, the New First Lien Notes Documents, the Existing First Lien Notes Documents or any Specified Other First Lien Agreement (including extensions beyond the Closing Date for the perfection of security interests in the assets of the Pledgors on such date) where it reasonably determines, in consultation with the Lux Borrower, that creation or perfection or obtaining of such items or taking of such actions cannot be accomplished without undue effort or expense by the time or times at which it would otherwise be required by this Agreement, the other Credit Agreement Documents, the New First Lien Notes Documents, the Existing First Lien Notes Documents or any Specified Other First Lien Agreement.

SECTION 5.10. *WAIVER OF JURY TRIAL.* EACH PARTY HERETO HEREBY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY IN ANY LEGAL PROCEEDING DIRECTLY OR INDIRECTLY ARISING OUT OF, UNDER OR IN CONNECTION WITH THIS AGREEMENT, ANY OTHER CREDIT AGREEMENT DOCUMENT, ANY OTHER NEW FIRST LIEN NOTES DOCUMENT, ANY OTHER EXISTING FIRST LIEN NOTES DOCUMENT OR ANY SPECIFIED OTHER FIRST LIEN AGREEMENT (WHETHER BASED ON CONTRACT, TORT OR ANY OTHER THEORY). EACH PARTY HERETO (A) CERTIFIES THAT NO REPRESENTATIVE, AGENT OR ATTORNEY OF ANY OTHER PARTY HAS REPRESENTED, EXPRESSLY OR OTHERWISE, THAT SUCH OTHER PARTY WOULD NOT, IN THE EVENT OF LITIGATION, SEEK TO ENFORCE THE FOREGOING WAIVER AND (B) ACKNOWLEDGES THAT IT AND THE OTHER PARTIES HERETO HAVE BEEN INDUCED TO ENTER INTO THIS AGREEMENT BY, AMONG OTHER THINGS, THE MUTUAL WAIVERS AND CERTIFICATIONS IN THIS SECTION 5.10.

SECTION 5.11. *Severability.* In the event any one or more of the provisions contained in this Agreement or any other Credit Agreement Document, any other New First Lien Notes Document, any other Existing First Lien Notes Document or any Specified Other First Lien Agreement should be held invalid, illegal or unenforceable in any respect in any jurisdiction, the validity, legality and enforceability of the remaining provisions contained herein and therein shall not in any way be affected or impaired thereby as to such jurisdiction, and the invalidity of a particular provision in a particular jurisdiction shall not invalidate such provision in any other jurisdiction. The parties shall endeavor in good-faith negotiations to replace the invalid, illegal or unenforceable provisions with valid provisions the economic effect of which comes as close as possible to that of the invalid, illegal or unenforceable provisions.

SECTION 5.12. *Counterparts.* This Agreement may be executed in two or more counterparts, each of which shall constitute an original but all of which when taken

together shall constitute but one contract, and shall become effective as provided in Section 5.04. Delivery of an executed counterpart to this Agreement by facsimile or other electronic transmission shall be as effective as delivery of a manually signed original.

SECTION 5.13. *Headings.* Article and Section headings and the Table of Contents used herein are for convenience of reference only, are not part of this Agreement and are not to affect the construction of, or to be taken into consideration in interpreting, this Agreement.

SECTION 5.14. *Jurisdiction; Consent to Service of Process.*
(a) Each Pledgor hereby irrevocably and unconditionally agrees that it will not commence any action, litigation or proceeding of any kind or description, whether in law or equity, whether in contract or in tort or otherwise, against any other party to this Agreement or any Affiliate thereof, in any way relating to this Agreement, any other Credit Agreement Document, any other New First Lien Notes Document, any other Existing First Lien Notes Document or any Specified Other First Lien Agreement or the transactions relating hereto or thereto, in any forum other than the courts of the State of New York sitting in New York County, Borough of Manhattan, and of the United States District Court of the Southern District of New York, sitting in New York County, Borough of Manhattan, and any appellate court from any thereof, and each of the parties hereto irrevocably and unconditionally submits to the jurisdiction of such courts and agrees that all claims in respect of any such action, litigation or proceeding may be heard and determined in such New York State court or, to the fullest extent permitted by applicable law, in such federal court. Each of the parties hereto agrees that a final judgment in any such action, litigation or proceeding shall be conclusive and may be enforced in other jurisdictions by suit on the judgment or in any other manner provided by law. Nothing in this Agreement, any other Credit Agreement Document, any other New First Lien Notes Document, any other Existing First Lien Notes Document or any Specified Other First Lien Agreement shall affect any right that the Collateral Agent or any other Secured Party may otherwise have to bring any action or proceeding relating to this Agreement, any other Credit Agreement Document, any other New First Lien Notes Document, any other Existing First Lien Notes Document or any Specified Other First Lien Agreement against any Pledgor or its properties in the courts of any jurisdiction.

(b) Each party to this Agreement hereby irrevocably and unconditionally waives, to the fullest extent it may legally and effectively do so, any objection which it may now or hereafter have to the laying of venue of any suit, action or proceeding arising out of or relating to this Agreement, any other Credit Agreement Document, any other New First Lien Notes Document, any other Existing First Lien Notes Document or any Specified Other First Lien Agreement in any court referred to in paragraph (a) of this Section 5.14. Each of the parties hereto hereby irrevocably waives, to the fullest extent permitted by law, the defense of an inconvenient forum to the maintenance of such action or proceeding in any such court.

(c) Each party to this Agreement irrevocably consents to service of process in the manner provided for notices in Section 5.01. Nothing in this Agreement, any other Credit Agreement Document, any other New First Lien Notes Document, any other Existing First Lien Notes Document or any Specified Other First Lien Agreement will affect the right of any party to this Agreement, any other Credit Agreement Document, any other New First Lien Notes

Document, any other Existing First Lien Notes Document or any Specified Other First Lien Agreement to serve process in any other manner permitted by law.

SECTION 5.15. *Termination or Release.* In each case subject to the terms of any applicable Intercreditor Agreement:

(a) This Agreement and the pledges made by the Pledgors herein and all other security interests granted by the Pledgors hereby shall automatically terminate and be released upon the occurrence of the Termination Date and, if any Specified Other First Lien Obligations are outstanding on the Termination Date, the date when any Specified Other First Lien Obligations (other than contingent or unliquidated obligations or liabilities not then due and any other obligations that, by the terms of any applicable Specified Other First Lien Agreements, are not required to be paid in full in cash prior to termination and release of the Collateral) have been paid in full in cash and the Secured Parties have no further commitment to extend credit under any Specified Other First Lien Agreement.

(b) Solely with respect to the Credit Agreement Secured Obligations, (i) a Pledgor shall automatically be released from its obligations hereunder if such Pledgor is released from its obligations under the Subsidiary Guarantee Agreement in accordance with Section 9.18(a)(v) of the Credit Agreement and/or (ii) the Security Interest in any portion of the Collateral shall be automatically released upon the occurrence of any of the circumstances set forth in Section 9.18(a) of the Credit Agreement (other than Section 9.18(a)(v) thereof) with respect to such portion of the Collateral, in the case of each of preceding clauses (i) and (ii), in accordance with the requirements of such Section (or clause thereof, as applicable), and all rights to the applicable Collateral shall revert to any applicable Pledgor.

(c) Solely with respect to the New First Lien Notes Secured Obligations, (i) a Pledgor shall automatically be released from its obligations hereunder if such Pledgor is released from its obligations from its Guarantee in accordance with Section 13.02(a)(ii)(b) of the New First Lien Notes Indenture and/or (ii) the Security Interest in any portion of the Collateral shall be automatically released upon the occurrence of any of the circumstances set forth in Section 13.02(a) of the New First Lien Notes Indenture with respect to such portion of the Collateral, in the case of each of preceding clauses (i) and (ii), in accordance with the requirements of such Section (or clause thereof, as applicable), and all rights to the applicable Collateral shall revert to any applicable Pledgor.

(d) Solely with respect to the Existing First Lien Notes Secured Obligations, (i) a Pledgor shall automatically be released from its obligations hereunder if such Pledgor is released from its obligations from its Guarantee in accordance with Section 13.02(a)(ii)(b) of the Existing First Lien Notes Indenture and/or (ii) the Security Interest in any portion of the Collateral shall be automatically released upon the occurrence of any of the circumstances set forth in Section 13.02(a) of the Existing First Lien Notes Indenture with respect to such portion of the Collateral, in the case of each of preceding clauses (i) and (ii), in accordance with the requirements of such Section (or clause thereof, as applicable), and all rights to the applicable Collateral shall revert to any applicable Pledgor.

(e) Solely with respect to any Specified Other First Lien Obligations, a Pledgor shall automatically be released from its obligations hereunder and/or the Security Interest in any Collateral shall in each case be automatically released upon the occurrence of any of the circumstances set forth in any section governing release of collateral in the applicable Specified Other First Lien Agreement in accordance with the requirements of any such section, and all rights (but only to the extent granted to holders of Specified Other First Lien Obligations) to the Collateral shall revert to any applicable Pledgor.

(f) The Security Interest in any portion of the Collateral shall be automatically released upon such portion of the Collateral becoming Excluded Property, Excluded Securities or, solely with respect to the applicable Series of Specified Other First Lien Obligations, Specified Excluded Collateral (and the Collateral Agent may rely conclusively on a certificate to that effect provided to it by any Pledgor upon its reasonable request without any further inquiry).

(g) In connection with any termination or release pursuant to this Section 5.15, the Collateral Agent shall execute and deliver to any Pledgor all documents that such Pledgor shall reasonably request to evidence such termination or release (including Uniform Commercial Code termination statements), and will duly assign and transfer to such Pledgor, any of such Collateral that is in the possession of the Collateral Agent and has not theretofore been sold or otherwise applied or released pursuant to this Agreement; *provided* that the Collateral Agent shall not be required to execute any such document on terms which, in the Collateral Agent's reasonable opinion, would expose the Collateral Agent to liability or create any obligation or entail any consequence other than the release of such termination or release without representation or warranty. Any execution and delivery of documents pursuant to this Section 5.15 shall be made without recourse to or warranty by the Collateral Agent. In connection with any release pursuant to this Section 5.15, the applicable Pledgor shall be permitted to take any action in connection therewith consistent with such release including, without limitation, the filing of Uniform Commercial Code termination statements with respect to the released portion of the Collateral. Upon the receipt of any necessary or proper instruments of termination, satisfaction or release prepared by the Lux Borrower, the Collateral Agent shall execute, deliver or acknowledge such instruments or releases to evidence the release of any Collateral permitted to be released pursuant to this Agreement; *provided* that the Collateral Agent shall not be required to execute, deliver or acknowledge any such document on terms which, in the Collateral Agent's reasonable opinion, would expose the Collateral Agent to liability or create any obligation or entail any consequence other than the release of such termination or release without representation or warranty. The Pledgors agree to pay all reasonable and documented out-of-pocket expenses incurred by the Collateral Agent (and its representatives and counsel) in connection with the execution and delivery of such release documents or instruments.

SECTION 5.16. *Additional Subsidiaries.* Upon execution and delivery by any Subsidiary that is required or permitted to become a party hereto by Section 5.10 of the Credit Agreement, Section 4.18 of the New First Lien Notes Indenture, Section 4.18 of the Existing First Lien Notes Indenture or the Collateral and Guarantee Requirement of the Credit Agreement, the New First Lien Notes Indenture or the Existing First Lien Notes Indenture or, so long as such Subsidiary is a Subsidiary Loan Party, by any Specified Other First Lien

Agreement, of an instrument substantially in the form of *Exhibit I* hereto (or another instrument reasonably satisfactory to the Collateral Agent and the Borrower) (a “***Collateral Supplement***”), such subsidiary shall become a Pledgor hereunder with the same force and effect as if originally named as a Pledgor herein. The execution and delivery of any Collateral Supplement shall not require the consent of any other party to this Agreement. The rights and obligations of each party to this Agreement shall remain in full force and effect notwithstanding the addition of any new party to this Agreement. If any person organized under the laws of Switzerland (a “***Swiss Grantor***”) becomes a party hereto pursuant to and in accordance with the requirements of this Section 5.16, the applicable Collateral Supplement shall include, to the extent elected by the Lux Borrower, the Additional Swiss Provisions.

SECTION 5.17. ***General Authority of the Collateral Agent.***

(a) By acceptance of the benefits of this Agreement and any other Security Documents, each Secured Party (whether or not a signatory hereto) shall be deemed irrevocably (i) to consent to the appointment of the Collateral Agent as its agent hereunder and under such other Security Documents, (ii) to confirm that the Collateral Agent shall have the authority to act as the exclusive agent of such Secured Party for the enforcement of any provision of this Agreement and such other Security Documents against any Pledgor, the exercise of remedies hereunder or thereunder and the giving or withholding of any consent or approval hereunder thereunder relating to any Collateral or any Pledgor’s obligations with respect thereto, (iii) to agree that it shall not take any action to enforce any provisions of this Agreement or any other Security Document against any Pledgor, to exercise any remedy hereunder or thereunder or to give any consents or approvals hereunder or thereunder except as expressly provided in this Agreement or any other Security Document and (iv) to agree to be bound by the terms of this Agreement and any other Security Documents and any applicable Intercreditor Agreement then in effect.

(b) Each Pledgor acknowledges that the rights and responsibilities of the Collateral Agent under this Agreement with respect to any action taken by the Collateral Agent or the exercise or non-exercise by the Collateral Agent of any option, voting right, request, judgment or other right or remedy provided for herein or resulting or arising out of this Agreement shall, as between the Collateral Agent and the Secured Parties, be governed by Article VIII of the Credit Agreement, Article XIII of the New First Lien Notes Indenture, Article XIII of the Existing First Lien Notes Indenture, any applicable Intercreditor Agreement and such other agreements with respect thereto as may exist from time to time among them, but, as between the Collateral Agent and the Pledgors, the Collateral Agent shall be conclusively presumed to be acting as agent for the applicable Secured Parties with full and valid authority so to act or refrain from acting, and no Pledgor shall be under any obligation, or entitlement, to make any inquiry respecting such authority.

(c) It is expressly understood and agreed that the obligations of the Collateral Agent as holder of the Collateral and interests therein and with respect to the disposition thereof, and otherwise under this Agreement, are only those expressly set forth in this Agreement, Article VIII of the Credit Agreement, Article XIII of the New First Lien Notes Indenture and Article XIII of the Existing First Lien Notes Indenture. The Collateral Agent shall act hereunder on the

terms and conditions set forth herein and in Article VIII of the Credit Agreement, Article XIII of the New First Lien Notes Indenture and Article XIII of the Existing First Lien Notes Indenture.

SECTION 5.18. *Subject to Intercreditor Agreements; Conflicts.*

Notwithstanding anything herein to the contrary, (i) the Liens and security interests granted to the Collateral Agent for the benefit of the Secured Parties pursuant to this Agreement and (ii) the exercise of any right or remedy by the Collateral Agent hereunder or the application of proceeds (including insurance and condemnation proceeds) of any Collateral, in each case, are subject to the limitations and provisions of any applicable Intercreditor Agreement to the extent provided therein. In the event of any conflict between the terms of such applicable Intercreditor Agreement and the terms of this Agreement, the terms of such applicable Intercreditor Agreement shall govern.

SECTION 5.19. *Specified Other First Lien Obligations.* On or after the Closing Date and so long as permitted under the Credit Agreement, the New First Lien Notes Indenture, the Existing First Lien Notes Indenture and any Specified Other First Lien Agreement (in each case, to the extent then in effect), the Lux Borrower may, but shall not be required to, from time to time designate obligations in respect of indebtedness permitted to be secured pursuant to Section 6.02 of the Credit Agreement, Section 4.12 of the New First Lien Notes Indenture or Section 4.12 of the Existing First Lien Notes Indenture (in each case, to the extent then in effect) to be secured (except with respect to any applicable Specified Excluded Collateral) on a *pari passu* basis with the then-outstanding Secured Obligations as “Specified Other First Lien Obligations” hereunder by (a) delivering to the Collateral Agent and each Authorized Representative a certificate of the Lux Borrower (i) identifying the obligations so designated and the initial aggregate principal amount or face amount thereof, (ii) stating that such obligations are designated as Specified Other First Lien Obligations for purposes hereof, (iii) representing that the Liens securing such obligations are permitted pursuant to (w) Section 6.02 of the Credit Agreement (x) Section 4.12 of the New First Lien Notes Indenture (y) Section 4.12 of the Existing First Lien Notes Indenture and (z) any Specified Other First Lien Agreement then in effect, and (iv) specifying the name and address of the Authorized Representative for such obligations, (b) delivering to the Collateral Agent and each Authorized Representative a Specified Other First Lien Secured Party Consent executed by the Authorized Representative for such obligations and the Lux Borrower and (c) if neither the Existing First Lien Intercreditor Agreement nor any other Permitted First Lien Intercreditor Agreement is then in effect, executing and delivering a Permitted First Lien Intercreditor Agreement (or, to the extent the Existing First Lien Intercreditor Agreement or any other Permitted First Lien Intercreditor Agreement is then in effect, a joinder thereto to the extent required thereby), in form and substance reasonably satisfactory to the Collateral Agent. Upon the satisfaction of all conditions set forth in the preceding sentence, (x) the Collateral Agent shall act as collateral agent (on the terms and conditions set forth herein and in Article VIII of the Credit Agreement, Article XIII of the New First Lien Notes Indenture and Article XIII of the Existing First Lien Notes Indenture) under and subject to the terms of the Security Documents for the benefit of all Secured Parties, including without limitation, any Secured Parties that hold any such Specified Other First Lien Obligations (except with respect to any applicable Specified Excluded Collateral), and shall execute and deliver the acknowledgement at the end of the Specified Other First Lien Secured Party Consent, (y) each Authorized Representative agrees to the appointment, and acceptance of

the appointment, of the Collateral Agent as collateral agent (on the terms and conditions set forth herein and in Article VIII of the Credit Agreement, Article XIII of the New First Lien Notes Indenture and Article XIII of the Existing First Lien Notes Indenture) for the holders of such Specified Other First Lien Obligations as set forth in each Specified Other First Lien Secured Party Consent and agrees, on behalf of itself and each Secured Party it represents, to be bound by this Agreement and the applicable Intercreditor Agreements and (z) such Specified Other First Lien Obligations shall automatically be deemed to be first priority obligations, for purposes of each Intercreditor Agreement that exists prior to the effectiveness of the designation of such Specified Other First Lien Obligations hereunder. The rights and obligations of each party to this Agreement shall remain in full force and effect notwithstanding the addition of any new Secured Obligations to this Agreement.

SECTION 5.20. *Person Serving as Collateral Agent.* On the Closing Date, (1) Acquiom Agency Services LLC and Seaport Loan Products LLC are, together, the Credit Agreement Agent, (2) Wilmington Savings Fund Society, FSB is the First Lien Trustee, (3) Wilmington Savings Fund Society, FSB is the New First Lien Trustee and (4) Deutsche Bank AG New York Branch is the Collateral Agent. The Collateral Agent hereunder shall at all times be the same person that is the “Collateral Agent” under the Existing First Lien Intercreditor Agreement (or any similar title or designation under any other Permitted First Lien Intercreditor Agreement). Written notice of resignation by the Collateral Agent under (and as defined in) the Existing First Lien Intercreditor Agreement (or any other Permitted First Priority Intercreditor Agreement) and, accordingly, as the “Collateral Agent”, “First Lien Collateral Agent” or similar title or designation under (and as defined in) the Credit Agreement, the New First Lien Notes Indenture, the Existing First Lien Notes Indenture and each other Specified Other First Lien Agreement pursuant to the terms thereof shall also constitute notice of resignation as the Collateral Agent under this Agreement. Upon the acceptance of any appointment as the “Collateral Agent” under the Existing First Lien Intercreditor Agreement (or any similar title or designation under any other Permitted First Lien Intercreditor Agreement) and, accordingly, as the “Collateral Agent”, “First Lien Collateral Agent” or similar title under (and as defined in) the Credit Agreement, the New First Lien Notes Indenture, the Existing First Lien Notes Indenture and each other Specified Other First Lien Agreement by a successor, that successor shall thereupon succeed to and become vested with all the rights, powers, privileges and duties of the retiring Collateral Agent pursuant hereto. Written notice of resignation by (i) the Credit Agreement Agent as Administrative Agent under (and as defined in) the Credit Agreement pursuant to the Credit Agreement shall also constitute notice of resignation as the Credit Agreement Agent under this Agreement, (ii) the New First Lien Trustee as the First Lien Trustee under (and as defined in) the New First Lien Notes Indenture shall also constitute notice of resignation as the New First Lien Trustee under this Agreement (iii) the Existing First Lien Trustee as the First Lien Trustee under (and as defined in) the Existing First Lien Notes Indenture shall also constitute notice of resignation as the Existing First Lien Trustee under this Agreement and (iv) the Authorized Representative of any other Series of Specified Other First Lien Obligations as administrative agent, trustee or other similar title under the applicable Specified Other First Lien Agreement shall also constitute notice of resignation as such Authorized Representative under this Agreement. Upon acceptance of any appoint in such capacity under the Credit Agreement, the New First Lien Notes Indenture, the Existing First Lien Notes Indenture or such Specified Other First Lien Agreement, as applicable, by a successor, that

successor shall thereupon succeed to and become vested with all the rights, powers, privileges and duties of the retiring Credit Agreement Agent, New First Lien Trustee, Existing First Lien Trustee or other Authorized Representative, as applicable, pursuant hereto. The Collateral Agent immediately prior to any change in Collateral Agent pursuant to this Section 5.20 (the “**Prior Collateral Agent**”) shall be deemed to have assigned all of its rights, powers and duties hereunder to the successor Collateral Agent determined in accordance with this Section 5.20 (the “**Successor Collateral Agent**”) and the Successor Collateral Agent shall be deemed to have accepted, assumed and succeeded to such rights, powers and duties. The Prior Collateral Agent shall cooperate with the Pledgors and such Successor Collateral Agent to ensure that all actions are taken that are necessary or reasonably requested by the Successor Collateral Agent to vest in such Successor Collateral Agent the rights granted to the Prior Collateral Agent hereunder with respect to the Collateral, including (a) the filing of amended financing statements in the appropriate filing offices, (b) to the extent that the Prior Collateral Agent holds, or a third party holds on its behalf, physical possession of or “control” (as defined in the New York UCC or the Uniform Commercial Code of any other applicable jurisdiction) (or any similar concept under foreign law) over Collateral pursuant to this Agreement or any other Security Document, the delivery to the Successor Collateral Agent of the Collateral in its possession or control together with any necessary endorsements to the extent required by this Agreement, and (c) the execution and delivery of any further documents, financing statements or agreements and the taking of all such further action that may be required under any applicable law, or that the Successor Collateral Agent may reasonably request, all without recourse to, or representation or warranty by, the Collateral Agent, and at the sole cost and expense of the Pledgors.

SECTION 5.21. *Survival of Agreement.* All covenants, agreements, representations and warranties made by the Pledgors in the Credit Agreement Documents, the New First Lien Notes Documents, the Existing First Lien Notes Documents and any Specified Other First Lien Agreement and in the certificates or other instruments delivered in connection with or pursuant to this Agreement, any other Credit Agreement Document, New First Lien Notes Document, Existing First Lien Notes Document or any Specified Other First Lien Agreement shall be considered to have been relied upon by the Secured Parties and shall survive the execution and delivery of the Credit Agreement Documents, the New First Lien Notes Documents, Existing First Lien Notes Document and any Specified Other First Lien Agreement and the making of any Loans under the Credit Agreement Documents, the issuance of the New First Lien Notes under the New First Lien Notes Documents, the reinstatement of the Existing First Lien Notes under the Existing First Lien Notes Documents and any extensions of credit under any Specified Other First Lien Agreement, regardless of any investigation made by or on behalf of any Secured Party or any other person and notwithstanding that any Secured Party or any other person may have had notice or knowledge of any Default or incorrect representation or warranty at the time any Credit Agreement Document, any New First Lien Notes Document, any Existing First Lien Notes Document or any Specified Other First Lien Agreement is executed and delivered or any credit is extended under the Credit Agreement, the New First Lien Notes Indenture, the Existing First Lien Notes Indenture or any Specified Other First Lien Agreement, and shall continue in full force and effect until the Termination Date and, if any Specified Other First Lien Obligations are outstanding on the Termination Date, the date when any Specified Other First Lien Obligations (other than contingent or unliquidated obligations or liabilities not then due and any other obligations that, by the terms of any applicable Specified Other First Lien

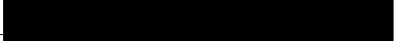
Agreements, are not required to be paid in full in cash prior to termination and release of the Collateral) have been paid in full in cash and the Secured Parties have no further commitment to extend credit under any Specified Other First Lien Agreement.

SECTION 5.22. *Other Capacities.* No Secured Party that obtains the benefit of this Agreement shall have any right to notice of any action or to consent to, direct or object to, any action hereunder or otherwise in respect of the Collateral (including, without limitation, the release or impairment of any Collateral) other than in its capacity as a Lender, the Collateral Agent, the Credit Agreement Administrative Agent, New First Lien Trustee or Existing First Lien Trustee, or similar capacities under any Specified Other First Lien Agreement, as applicable, and, in any such case, only to the extent expressly provided in the Credit Agreement Documents, the New First Lien Notes Documents, the Existing First Lien Notes Documents and any Specified Other First Lien Agreement, including without limitation Article VIII of the Credit Agreement, Article XIII of the New First Lien Notes Indenture and Article XIII of the Existing First Lien Notes Indenture, as applicable. Each Secured Party not a party to the Credit Agreement, the New First Lien Notes Indenture, the Existing First Lien Notes Indenture or any Specified Other First Lien Agreement that obtains the benefit of this Agreement shall be deemed to have acknowledged and accepted (a) the appointment of the Collateral Agent pursuant to the terms of the Existing First Lien Intercreditor Agreement (or any other Permitted First Lien Intercreditor Agreement), the Credit Agreement, the New First Lien Notes Indenture, the Existing First Lien Notes Indenture and any Specified Other First Lien Agreement, (b) the appointment of the Administrative Agent pursuant to the terms of the Credit Agreement, including, without limitation, under Article VIII of the Credit Agreement, (c) the appointment of the New First Lien Trustee pursuant to the terms of the New First Lien Notes Indenture, including, without limitation, under Article XIII of the New First Lien Notes Indenture, (d) the appointment of the Existing First Lien Trustee pursuant to the terms of the Existing First Lien Notes Indenture, including, without limitation, under Article XIII of the Existing First Lien Notes Indenture and (e) the appointment of each applicable Authorized Representative pursuant to the terms of any Specified Other First Lien Agreement.


[Signature Pages Follow]

IN WITNESS WHEREOF, the parties have duly executed this Agreement as of the day and year first above written

MALLINCKRODT INTERNATIONAL
FINANCE S.A., as a Pledgor

By: _____
Name: Bryan M. Reasons
Title: Director

MALLINCKRODT CB LLC, as a Pledgor

By: _____
Name: Bryan M. Reasons
Title: President

MALLINCKRODT INTERNATIONAL HOLDINGS
S.À R.L., as Pledgor

By: _____
Name: Bryan M. Reasons
Title: Manager

IMC EXPLORATION COMPANY
INFACARE PHARMACEUTICAL CORPORATION
INO THERAPEUTICS LLC
LUDLOW LLC
MAK LLC
MALLINCKRODT ARD HOLDINGS INC.
MALLINCKRODT ARD LLC
MALLINCKRODT BRAND PHARMACEUTICALS LLC
MALLINCKRODT CRITICAL CARE FINANCE LLC
MALLINCKRODT HOSPITAL PRODUCTS INC.
MALLINCKRODT MANUFACTURING LLC
MALLINCKRODT US HOLDINGS LLC
MALLINCKRODT US POOL LLC
MALLINCKRODT VETERINARY, INC.
MCCH LLC
MEH, INC.
MHP FINANCE LLC
MNK 2011 LLC
OCERA THERAPEUTICS, INC.
PETTEN HOLDINGS INC.
ST OPERATIONS LLC
ST SHARED SERVICES LLC
ST US HOLDINGS LLC
ST US POOL LLC
STRATATECH CORPORATION
SUCAMPO HOLDINGS INC.
SUCAMPO PHARMA AMERICAS LLC
SUCAMPO PHARMACEUTICALS LLC
THERAKOS, INC.
VTESSE LLC, each as a Pledgor

By:

Name: Stephen A. Welch
Title: Assistant Secretary

MALLINCKRODT APAP LLC
MALLINCKRODT ARD FINANCE LLC
MALLINCKRODT ENTERPRISES HOLDINGS, INC.
MALLINCKRODT ENTERPRISES LLC
MALLINCKRODT EQUINOX FINANCE LLC
MALLINCKRODT LLC
SPECGX LLC
SPECGX HOLDINGS LLC
WEBSTERGX HOLDCO LLC, each as a Pledgor

By: _____

Name: Stephen A. Welch
Title: President

MALLINCKRODT ARD IP UNLIMITED COMPANY
MALLINCKRODT HOSPITAL PRODUCTS IP
UNLIMITED COMPANY
MALLINCKRODT IP UNLIMITED COMPANY
MALLINCKRODT PHARMA IP TRADING UNLIMITED
COMPANY, each as a Pledgor

By: _____

Name: Bryan M. Reasons
Title: Director

MALLINCKRODT PHARMACEUTICALS IRELAND
LIMITED, as a Pledgor

By: _____

Name: Mark Casey
Title: Director

MALLINCKRODT APAP LLC
MALLINCKRODT ARD FINANCE LLC
MALLINCKRODT ENTERPRISES HOLDINGS, INC.
MALLINCKRODT ENTERPRISES LLC
MALLINCKRODT EQUINOX FINANCE LLC
MALLINCKRODT LLC
SPECGX LLC
SPECGX HOLDINGS LLC
WEBSTERGX HOLDCO LLC, each as a Pledgor

By: _____
Name: Stephen A. Welch
Title: President

MALLINCKRODT ARD IP UNLIMITED COMPANY
MALLINCKRODT HOSPITAL PRODUCTS IP
UNLIMITED COMPANY
MALLINCKRODT IP UNLIMITED COMPANY
MALLINCKRODT PHARMA IP TRADING UNLIMITED
COMPANY, each as a Pledgor

By: _____
Name: Bryan M. Reasons
Title: Director

MALLINCKRODT PHARMACEUTICALS IRELAND
LIMITED, as a Pledgor

By: _____
Name: Mark Casey
Title: Director

MALLINCKRODT APAP LLC
MALLINCKRODT ARD FINANCE LLC
MALLINCKRODT ENTERPRISES HOLDINGS, INC.
MALLINCKRODT ENTERPRISES LLC
MALLINCKRODT EQUINOX FINANCE LLC
MALLINCKRODT LLC
SPECGX LLC
SPECGX HOLDINGS LLC
WEBSTERGX HOLDCO LLC, each as a Pledgor

By: _____
Name: Stephen A. Welch
Title: President

MALLINCKRODT ARD IP UNLIMITED COMPANY
MALLINCKRODT HOSPITAL PRODUCTS IP
UNLIMITED COMPANY
MALLINCKRODT IP UNLIMITED COMPANY
MALLINCKRODT PHARMA IP TRADING UNLIMITED
COMPANY, each as a Pledgor

By: _____
Name: Bryan M. Reasons
Title: Director

MALLINCKRODT PHARMACEUTICALS IRELAND
LIMITED, as a Pledgor

By: _____
Name: Mark Casey
Title: Director

MALLINCKRODT ARD HOLDINGS LIMITED, as a
Pledgor

By: _____

Name: Bryan M. Reasons
Title: Director

MALLINCKRODT ENTERPRISES UK LIMITED as a
Pledgor

By: _____

Name: Bryan M. Reasons
Title: Director

MUSHI UK HOLDINGS LIMITED, as a Pledgor

By: _____

Name: Bryan M. Reasons
Title: Director

DEUTSCHE BANK AG NEW YORK BRANCH,
as Collateral Agent

By: _____

Name:

Title:

By: _____

Name:

Title:

ACQUIOM AGENCY SERVICES LLC,
as Credit Agreement Agent

By: 

Name: Menee Kuhl

Title: Executive Director

and

SEAPORT LOAN PRODUCTS LLC,
as Credit Agreement Agent

By: _____

Name:

Title:

ACQUIOM AGENCY SERVICES LLC,
as Credit Agreement Agent

By: _____
Name:
Title:

and

SEAPORT LOAN PRODUCTS LLC,
as Credit

By: _____
Name:
Title:

WILMINGTON SAVINGS FUND SOCIETY,
FSB, as New First Lien Trustee

By: _____



Name: Raye Goldsborough
Title: Vice President

Subsidiary Loan Parties

1. Mallinckrodt International Finance S.A.
2. Mallinckrodt CB LLC
3. IMC Exploration Company
4. Infacare Pharmaceutical Corporation
5. INO Therapeutics LLC
6. Ludlow LLC
7. MAK LLC
8. Mallinckrodt APAP LLC
9. Mallinckrodt ARD Finance LLC
10. Mallinckrodt ARD Holdings Inc.
11. Mallinckrodt ARD LLC
12. Mallinckrodt Brand Pharmaceuticals LLC
13. Mallinckrodt Critical Care Finance LLC
14. Mallinckrodt Enterprises Holdings, Inc.
15. Mallinckrodt Enterprises LLC
16. Mallinckrodt Equinox Finance LLC
17. Mallinckrodt Hospital Products Inc.
18. Mallinckrodt LLC
19. Mallinckrodt Manufacturing LLC
20. Mallinckrodt US Holdings LLC
21. Mallinckrodt US Pool LLC
22. Mallinckrodt Veterinary, Inc.
23. MCCH LLC
24. MEH, Inc.
25. MHP Finance LLC
26. MNK 2011 LLC
27. Ocera Therapeutics, Inc.
28. Petten Holdings Inc.
29. SpecGX Holdings LLC
30. SpecGX LLC
31. ST Operations LLC
32. ST Shared Services LLC
33. ST US Holdings LLC
34. ST US Pool LLC
35. Stratatech Corporation
36. Sucampo Holdings Inc.
37. Sucampo Pharma Americas LLC
38. Sucampo Pharmaceuticals LLC
39. Therakos, Inc.
40. Vtesse LLC
41. WebsterGX Holdco LLC
42. Mallinckrodt ARD IP Unlimited Company
43. Mallinckrodt Hospital Products IP Unlimited Company
44. Mallinckrodt IP Unlimited Company
45. Mallinckrodt Pharma IP Trading Unlimited Company

46. Mallinckrodt Pharmaceuticals Ireland Limited
47. Mallinckrodt International Holdings S.à r.l.
48. Mallinckrodt ARD Holdings Limited
49. Mallinckrodt Enterprises UK Limited
50. MUSHI UK Holdings Limited

Schedule II to the
Collateral Agreement

Pledged Stock; Pledged Debt

A. Pledged Stock

Issuer	Jurisdiction	Recorded Owner	Certificate No.	Number (Percentage) of Equity Interest Owned	Percent Pledged ¹
Acthar IP Unlimited Company	Ireland	Mallinckrodt Pharma IP Trading Unlimited Company	3 - 13 and 15 - 22	218 (100%)	100%
Carnforth Limited	Bermuda	ST US Holdings LLC	Un-numbered Certificate	240 (100%)	100%
Dritte CORSA Verwaltungsgesellschaft GmbH	Germany	ST US Holdings LLC	Uncertificated	4 (100%)	100%
Ikaria Australia Pty Ltd	Australia	Mallinckrodt Hospital Products Inc.	6, 7	1,683,022 (100%)	100%
Ikaria Canada Inc.	Canada	Mallinckrodt Hospital Products Inc.	5	100 (100%)	100%
IMC Exploration Company	Maryland	ST US Holdings LLC	1A	13 (100%)	100%
Infacare Pharmaceutical Corporation	Delaware	Therakos, Inc.	3	1,000 (100%)	100%
INO Therapeutics LLC	Delaware	Therakos Inc.	3	100%	100%
Ludlow LLC	Massachusetts	MNK 2011 LLC	Uncertificated	100%	100%
MAK LLC	Delaware	MEH, Inc.	Uncertificated	1,000 (100%)	100%
Mallinckrodt APAP LLC	Delaware	SpecGx LLC	Uncertificated	100%	100%
Mallinckrodt ARD Finance LLC	Delaware	Mallinckrodt Enterprises Holdings, Inc.	Uncertificated	100%	100%
Mallinckrodt ARD Holdings Inc.	Delaware	Therakos Inc.	7	200 (100%)	100%
Mallinckrodt ARD Holdings Limited	United Kingdom	Mallinckrodt International Finance S.A.	5, 6, 7, 8, 9, 10	21,710,272 (100%)	100%
Mallinckrodt ARD LLC	California	Mallinckrodt ARD Holdings Inc.	Uncertificated	100%	100%
Mallinckrodt Brand Pharmaceuticals LLC	Delaware	ST US Holdings LLC	Uncertificated	100%	100%
Mallinckrodt Buckingham Unlimited Company	Ireland	Mallinckrodt Pharmaceuticals Limited	5, 6, 7	87,301 (100%)	100%
Mallinckrodt Canada Cooperatie U.A.	Netherlands	Mallinckrodt Group S.à r.l.	Uncertificated	99.9%	0%
		Mallinckrodt International Finance S.A.	Uncertificated	0.1%	0.1%
Mallinckrodt CB LLC	Delaware	Mallinckrodt International Finance S.A.	Uncertificated	100%	100%
Mallinckrodt Critical Care Finance LLC	Delaware	Mallinckrodt ARD Holdings Inc.	Uncertificated	100%	100%
Mallinckrodt Enterprises Holdings, Inc.	California	Petten Holdings Inc.	3	100 (50%)	50%
		MEH, Inc.	1A	100 (50%)	50%
Mallinckrodt Enterprises LLC	Delaware	WebsterGx Holdco LLC	Uncertificated	9.86 Common Interests (0.99%)	Common: 0.99%
		Mallinckrodt ARD Finance LLC	Uncertificated	990.14 Common Interests (99.01%)	Common: 99.01%

¹ The percent pledged may not account for certain potential exclusions as a result of certain of such Equity Interests potentially constituting Excluded Securities or Excluded Property.

Issuer	Jurisdiction	Recorded Owner	Certificate No.	Number (Percentage) of Equity Interest Owned	Percent Pledged ¹
				498.75 Preferred Interests (100%)	Preferred: 100%
Mallinckrodt Enterprises UK Limited	United Kingdom	MUSHI UK Holdings Limited	6, 7, 8, 9	21,690,271 (100%)	100%
Mallinckrodt Equinox Finance LLC	Delaware	Petten Holdings Inc.	Uncertificated	1,000 (100%)	100%
Mallinckrodt Equinox Limited	United Kingdom	Petten Holdings Inc.	7	1 (100%)	100%
Mallinckrodt Finance Management Ireland Limited	Ireland	Mallinckrodt Pharmaceuticals Ireland Limited	4, 5, 6	300 (100%)	100%
Mallinckrodt Group S.à r.l.	Luxembourg	Mallinckrodt International Finance S.A.	Uncertificated	350,008 (100%)	100%
Mallinckrodt Holdings GmbH	Switzerland	Mallinckrodt International Finance S.A.	1	100%	100%
Mallinckrodt Hospital Products Inc.	Delaware	MCCH LLC	2	100%	100%
Mallinckrodt Hospital Products IP Unlimited Company	Ireland	Mallinckrodt IP Unlimited Company	1, 2, 3, 4, 5	106 (100%)	100%
Mallinckrodt International Holdings S.à r.l.	Luxembourg	Mallinckrodt International Finance S.A.	Uncertificated	20,000 (100%)	100%
Mallinckrodt IP Unlimited Company	Ireland	Mallinckrodt Pharma IP Trading Unlimited Company	13 - 26	215 (100%)	100%
Mallinckrodt LLC	Delaware	Mallinckrodt Enterprises LLC	Uncertificated	100%	100%
Mallinckrodt Lux IP S.à r.l.	Luxembourg	Mallinckrodt International Finance S.A.	Uncertificated	200 (100%)	100%
Mallinckrodt Manufacturing LLC	Delaware	Mallinckrodt Hospital Products Inc.	Uncertificated	100%	100%
Mallinckrodt Medical Holdings (UK) Limited	United Kingdom	ST US Holdings LLC	11	2,012 (100%)	100%
Mallinckrodt Petten Holdings B.V.	Netherlands	Petten Holdings Inc.	Uncertificated	18,000 (100%)	100%
Mallinckrodt Pharma IP Trading Unlimited Company	Ireland	Mallinckrodt International Finance S.A.	1 - 38	100,138 (100%)	100%
Mallinckrodt Pharmaceuticals Ireland Limited	Ireland	Mallinckrodt International Finance S.A.	2, 3, 4, 5	5 (100%)	100%
Mallinckrodt Securitization S.à r.l.	Luxembourg	Mallinckrodt International Finance S.A.	Uncertificated	202 (100%)	100%
Mallinckrodt UK Finance LLP	United Kingdom	Mallinckrodt Pharmaceuticals Limited	Uncertificated	0.01%	0.01%
		Mallinckrodt International Finance S.A.	Uncertificated	99.99%	99.99%
Mallinckrodt UK Ltd	United Kingdom	Mallinckrodt International Holdings S.à r.l.	11, 12, 13	13 (100%)	100%
Mallinckrodt US Holdings LLC	Delaware	ST US Holdings LLC	Uncertificated	100%	100%
Mallinckrodt US Pool LLC	Nevada	Petten Holdings Inc.	Uncertificated	100%	100%
Mallinckrodt Veterinary, Inc.	Delaware	ST US Holdings LLC	1A	2,000 (100%)	100%
MCCH LLC	Delaware	Ludlow LLC	Uncertificated	100%	100%
MEH, Inc.	Nevada	Mallinckrodt International Finance S.A.	10	202 (100%)	100%
MHP Finance LLC	Delaware	Mallinckrodt ARD Holdings Inc.	Uncertificated	100%	100%
MNK 2011 LLC	Delaware	Mallinckrodt Brand Pharmaceuticals LLC	Uncertificated	100%	100%
MUSHI UK Holdings Limited	United Kingdom	Mallinckrodt ARD Holdings Limited	3, 4, 5, 6, 7	21,710,271 (100%)	100%
OCERA Therapeutics, Inc.	Delaware	MAK LLC	1	1,000 (100%)	100%

Schedule II

Issuer	Jurisdiction	Recorded Owner	Certificate No.	Number (Percentage) of Equity Interest Owned	Percent Pledged ¹
Petten Holdings Inc.	Delaware	ST US Holdings LLC	1	1,000 (100%)	100%
Profibrix B.V.	Netherlands	Mallinckrodt Pharma IP Trading Unlimited Company	Uncertificated	100%	100%
Questcor International Limited	Ireland	Mallinckrodt ARD LLC	1, 2	2 (100%)	100%
Sonorant Therapeutics Limited	Ireland	Mallinckrodt Pharmaceuticals Ireland Limited	1	1 (100%)	100%
SpecGx Holdings LLC	New York	Mallinckrodt LLC	Uncertificated	100%	100%
SpecGx LLC	Delaware	SpecGx Holdings LLC	Uncertificated	100%	100%
ST Operations LLC	Delaware	MEH, Inc.	Uncertificated	100%	100%
ST Shared Services LLC	Delaware	Petten Holdings Inc.	Uncertificated	100%	100%
ST US AR Finance LLC	Delaware	MEH, Inc.	Uncertificated	100 (100%)	0%
ST US Holdings LLC	Nevada	MEH, Inc.	Uncertificated	100%	100%
ST US Pool LLC	Delaware	ST US Holdings LLC	Uncertificated	100%	100%
Stratatech Corporation	Delaware	Mallinckrodt Hospital Products Inc.	136	1 (100%)	100%
Sucampo Holdings Inc.	Delaware	Sucampo Pharmaceuticals LLC	1	100 (100%)	100%
Sucampo International Holdings Limited	United Kingdom	Sucampo Pharma Americas LLC	1, 2	3 (100%)	100%
Sucampo Pharma Americas LLC	Delaware	Sucampo Holdings Inc.	Uncertificated	100%	100%
Sucampo Pharmaceuticals LLC	Delaware	MEH, Inc.	Uncertificated	100%	100%
Therakos (Belgium) SPRL	Belgium	Therakos, Inc.	Uncertificated	18,550 (100%)	100%
Therakos (Canada) Company	Nova Scotia	Therakos, Inc.	5	100 (100%)	100%
Therakos (France) SAS	France	Therakos, Inc.	Uncertificated	10 (100%)	100%
Therakos (Italia) S.r.l.	Italy	Therakos, Inc.	Uncertificated	Quota of Euro 10,000 (100%)	100%
Therakos (UK), Ltd	United Kingdom	Therakos, Inc.	4, 7, 9	200 (100%)	100%
Therakos EMEA Limited	Ireland	Mallinckrodt Pharmaceuticals Ireland Limited	2	1 (100%)	100%
Therakos Germany GmbH	Germany	Therakos, Inc.	Uncertificated	25,000 (100%)	100%
Therakos, Inc.	Florida	Mallinckrodt Hospital Products Inc.	1	1,000 (100%)	100%
Vtesse LLC	Delaware	Sucampo Pharmaceuticals LLC	Uncertificated	100%	100%
WebsterGx Holdco LLC	New York	Mallinckrodt Enterprises Holdings, Inc.	Uncertificated	100%	100%

B. Pledged Debt

Borrower	Lender	Type	Current All-in rate	Currency	Current Balance
Sucampo Pharma Americas LLC	Sucampo Pharmaceuticals LLC	Promissory Note	4.80%	USD	126,000,000.00

Intellectual Property

A. Patents Applications and Registrations

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	PREPARATION OF CODEINE FROM MORPHINE	10/274702	21-Oct-2002	6579985	17-Jun-2003	21-Oct-2022	Granted	SPECGX LLC
United States of America	PROCESS FOR THE PREPARATION OF QUATERNARY N-ALKYL MORPHINAN ALKALOID SALTS	10/530446	05-Apr-2005	7285665	23-Oct-2007	21-Apr-2024	Granted	SPECGX LLC
United States of America	Stearate Composition and Method of production thereof	10/558591	29-Nov-2005	7456306	25-Nov-2008	15-Jun-2025	Granted	SPECGX LLC
United States of America	Improved Stearate Composition and Method	11/154849	16-Jun-2005	7385068	10-Jun-2008	17-Mar-2025	Granted	SPECGX LLC
United States of America	PROCESSES FOR PREPARING MORPHINAN-6-ONE PRODUCTS WITH LOW LEVELS OF ALPHA, BETA-UNSATURATED KETONE COMPOUNDS	13/294546	11-Nov-2011	8748611	10-Jun-2014	01-Oct-2027	Granted	SPECGX LLC
United States of America	PROCESSES FOR PREPARING MORPHINAN-6-ONE PRODUCTS WITH LOW LEVELS OF ALPHA, BETA-UNSATURATED KETONE COMPOUNDS	15/710990	21-Sep-2017				Published	SPECGX LLC

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	PROCESSES FOR PREPARING MORPHINAN-6-ONE PRODUCTS WITH LOW LEVELS OF ALPHA, BETA-UNSATURATED KETONE COMPOUNDS	11/915606	27-Nov-2007	8871779	28-Oct-2014	22-Nov-2029	Granted	SPECGX LLC
United States of America	OPIATE INTERMEDIATES AND METHODS OF SYNTHESIS	11/741910	30-Apr-2007	7511060	31-Mar-2009	02-Jun-2026	Granted	SPECGX LLC
United States of America	OPIATE INTERMEDIATES AND METHODS OF SYNTHESIS	11/718263	30-Apr-2007	7834184	16-Nov-2010	01-Feb-2028	Granted	SPECGX LLC
United States of America	OPIATE INTERMEDIATES AND METHODS OF SYNTHESIS	11/741932	30-Apr-2007	7622586	24-Nov-2009	22-May-2026	Granted	SPECGX LLC
United States of America	MATRIX-BASED PULSE RELEASE PHARMACEUTICAL FORMULATION	11/909270	21-Sep-2007	9713592	25-Jul-2017	01-May-2031	Granted	SPECGX LLC
United States of America	VALVE WITH SMART HANDLE INCLUDING SENSORS AND MEMORY	10/416870	15-May-2003	7114510	03-Oct-2006	10-Jul-2022	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHOD AND APPARATUS FOR GENERATING NITRIC OXIDE FOR MEDICAL USE	14/307664	18-Jun-2014	9278111	08-Mar-2016	16-Feb-2026	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	METHOD AND APPARATUS FOR GENERATING NITRIC OXIDE FOR MEDICAL USE	15/008048	27-Jan-2016	10537697	21-Jan-2020	16-Feb-2026	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHOD AND APPARATUS FOR GENERATING NITRIC OXIDE FOR MEDICAL USE	11/355670	16-Feb-2006	8790715	29-Jul-2014	16-Feb-2026	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHODS OF DISTRIBUTING A PHARMACEUTICAL PRODUCT COMPRISING NITRIC OXIDE GAS FOR INHALATION	13/683236	21-Nov-2012	8846112	30-Sep-2014	30-Jun-2029	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHODS OF REDUCING THE RISK OF OCCURRENCE OF PULMONARY EDEMA IN CHILDREN IN NEED OF TREATMENT WITH INHALED NITRIC OXIDE	12/821020	22-Jun-2010	8282966	09-Oct-2012	30-Jun-2029	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHODS OF REDUCING THE RISK OF OCCURRENCE OF PULMONARY EDEMA IN TERM OR NEAR-TERM NEONATES IN NEED OF TREATMENT WITH INHALED NITRIC OXIDE	12/821041	22-Jun-2010	8293284	23-Oct-2012	30-Jun-2029	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	METHODS OF REDUCING THE RISK OF OCCURRENCE OF PULMONARY EDEMA ASSOCIATED WITH INHALATION OF NITRIC OXIDE GAS	13/651660	15-Oct-2012	8431163	30-Apr-2013	30-Jun-2029	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHODS FOR TREATING PATIENTS WHO ARE CANDIDATES FOR INHALED NITRIC OXIDE TREATMENT	13/683417	21-Nov-2012	8795741	05-Aug-2014	30-Jun-2029	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHODS OF ADMINISTERING INHALED NITRIC OXIDE GAS	16/378361	08-Apr-2019				Published	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	CONVENIENT PREPARATION OF N-SUBSTITUTED MORPHINAN-6-OLS FROM MORPHINAN-6-ONES	14/529368	31-Oct-2014	9499556	22-Nov-2016	31-Oct-2034	Granted	SPECGX LLC
United States of America	PREPARATION OF SUFENTANIL CITRATE AND SUFENTANIL BASE	15/164483	25-May-2016	10227335	12-Mar-2019	25-May-2036	Granted	SPECGX LLC
United States of America	PREPARATION OF SUFENTANIL CITRATE AND SUFENTANIL BASE	16/254074	22-Jan-2019	10899749	26-Jan-2021	25-May-2036	Granted	SPECGX LLC
United States of America	SUSPICIOUS ORDER MONITORING PROGRAM	14/192971	28-Feb-2014	10089678	02-Oct-2018	03-Aug-2034	Granted	SPECGX LLC

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	COMPOSITIONS AND METHODS FOR PREPARING TAMPER RESISTANT PLATFORMS FOR EXTENDED SOLID DOSAGE FORMS	16/600874	14-Oct-2019	11096887	24-Aug-2021	11-Jul-2033	Granted	SPECGX LLC
United States of America	PREPARATION OF NORMORPHINANS	14/546617	18-Nov-2014	9127009	08-Sep-2015	18-Nov-2034	Granted	SPECGX LLC
United States of America	EXTENDED RELEASE, ABUSE DETERRENT PHARMACEUTICAL COMPOSITIONS	13/939357	11-Jul-2013	9730885	15-Aug-2017	04-Aug-2034	Granted	SPECGX LLC
United States of America	EXTENDED RELEASE, ABSURE DETERRENT PHARMACEUTICAL COMPOSITIONS	15/420386	31-Jan-2017	10485753	26-Nov-2019	11-Jul-2033	Granted	SPECGX LLC
United States of America	METERED DOSE DISPENSING OF TOPICAL ANALGESICS	13/657711	22-Oct-2012				Published	MALLINCKRODT LLC & NUVO RESEARCH INC.
United States of America	SUBSTITUTED BERBINES AND THEIR SYNTHESIS	14/504906	02-Oct-2014	9181237	10-Nov-2015	02-Oct-2034	Granted	SPECGX LLC
United States of America	PRODUCTION OF 6-HYDROXY MORPHINANS WITHOUT THE ISOLATION OF INTERMEDIATES	14/533522	05-Nov-2014	9193737	24-Nov-2015	05-Nov-2034	Granted	SPECGX LLC
United States of America	IMMEDIATE RELEASE, ABUSE DETERRENT PHARMACEUTICAL COMPOSITIONS	13/865286	18-Apr-2013	9993422	12-Jun-2018	18-Apr-2033	Granted	SPECGX LLC

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	IMMEDIATE RELEASE, ABUSE DETERRENT PHARMACEUTICAL COMPOSITIONS	15/714137	25-Sep-2017				Published	SPECGX LLC
United States of America	MEDICAMENT SACHET LEAK TESTING SYSTEM	14/630960	25-Feb-2015	9766152	19-Sep-2017	03-Jun-2035	Granted	MALLINCKRODT LLC
United States of America	ONE POT PROCESS FOR PRODUCING 6-HYDROXYL NAL-OPIATE	13/762431	08-Feb-2013	9012468	21-Apr-2015	08-Feb-2033	Granted	SPECGX LLC
United States of America	SYSTEMS AND METHODS FOR HIGH HUMIDITY CURING WITHIN TABLET COATING SYSTEM	15/568587	23-Oct-2017	10441508	15-Oct-2019	24-Apr-2035	Granted	SPECGX LLC
United States of America	SYSTEMS AND METHODS FOR HIGH HUMIDITY CURING WITHIN TABLET COATING SYSTEM	16/549151	23-Aug-2019	11077024	03-Aug-2021	24-Apr-2035	Granted	SPECGX LLC
United States of America	SPRAY DRIED COMPOSITIONS HAVING DIFFERENT DISSOLUTION PROFILES AND PROCESSES FOR THEIR PREPARATION	14/722541	27-May-2015				Published	SPECGX LLC
United States of America	ABUSE DETERRENT TABLETS FOR IMMEDIATE RELEASE WITH FUNCTIONAL SCORE	14/211307	14-Mar-2014	9301918	05-Apr-2016	14-Mar-2034	Granted	SPECGX LLC

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	IMPROVED PROCESS FOR THE PREPARATION OF RADIOIODINATED 3-FLUOROPROPYL-NOR-BETA-CIT	14/496376	25-Sep-2014	9339565	17-May-2016	25-Sep-2034	Granted	SPECGX LLC
United States of America	TWO-STEP PROCESS FOR PREPARING 3-SUBSTITUTED PHENYLALKYLAMINES	15/202670	06-Jul-2016	9914695	13-Mar-2018	10-Jul-2035	Granted	SPECGX LLC
United States of America	REDUCED DOSE INTRAVENOUS ACETAMINOPHEN	12/270796	13-Nov-2008	9399012	26-Jul-2016	11-Sep-2031	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	REDUCED DOSE INTRAVENOUS ACETAMINOPHEN	15/184056	16-Jun-2016	9610265	04-Apr-2017	13-Nov-2028	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	REDUCED DOSE INTRAVENOUS ACETAMINOPHEN	15/436285	17-Feb-2017	9987238	05-Jun-2018	13-Nov-2028	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	REDUCED DOSE INTRAVENOUS ACETAMINOPHEN	15/979154	14-May-2018	10383834	20-Aug-2019	13-Nov-2028	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	PROCESS FOR PREPARING SUBSTITUTED PHENYLALKANES	14/796069	10-Jul-2015	9556108	31-Jan-2017	10-Jul-2035	Granted	SPECGX LLC
United States of America	ABUSE DETERRENT IMMEDIATE RELEASE FORMULATIONS COMPRISING NON-CELLULOSE POLYSACCHARIDES	16/002199	07-Jun-2018				Published	SPECGX LLC
United States of America	OXIDATIVE DEAROMATIZATION OF BERBINES	14/736752	11-Jun-2015	9593111	14-Mar-2017	11-Jun-2035	Granted	SPECGX LLC

Schedule III

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	ABUSE DETERRENT IMMEDIATE RELEASE FORMULATIONS COMPRISING NON-CELLULOSE POLYSACCHARIDES	14/788908	01-Jul-2015				Published	SPECGX LLC
United States of America	METHODS AND APPARATUS FOR THE ADMINISTRATION OF CO	12/502991	14-Jul-2009	7945301	17-May-2011	27-Jun-2023	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	PROCESS FOR THE MANUFACTURE OF HIGH PURITY CARBON MONOXIDE	13/038539	02-Mar-2011	8703089	22-Apr-2014	14-Oct-2031	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHOD AND APPARATUS FOR THE MANUFACTURE OF HIGH PURITY CARBON MONOXIDE	14/193323	28-Feb-2014	9567226	14-Feb-2017	27-Aug-2031	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHOD AND APPARATUS FOR THE MANUFACTURE OF HIGH PURITY CARBON MONOXIDE	15/430677	13-Feb-2017	10486126	26-Nov-2019	09-Apr-2031	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	CARBON MONOXIDE IMPROVES OUTCOMES IN TISSUE AND ORGAN TRANSPLANTS AND SUPPRESSES APOPTOSIS	10/177930	21-Jun-2002	7238469	03-Jul-2007	21-Jun-2022	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	DOSING REGIMENS AND METHODS OF TREATMENT USING CARBON MONOXIDE	13/106437	12-May-2011	8778413	15-Jul-2014	27-Oct-2031	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	METHODS AND APPARATUS FOR THE ADMINISTRATION OF CO	10/520270	05-Aug-2005	7574246	11-Aug-2009	05-Aug-2025	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	THERAPEUTIC GAS DELIVERY DEVICE WITH PULSED AND CONTINUOUS FLOW CONTROL	16/504881	08-Jul-2019				Published	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	ENHANCED PERFORMANCE VERIFICATION FOR THERAPEUTIC GAS DELIVERY	14/709308	11-May-2015	10543325	28-Jan-2020	01-Apr-2038	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	DEVICE AND METHODS FOR MONITORING OXYGENATION DURING TREATMENT WITH DELIVERY OF NITRIC OXIDE	16/365263	26-Mar-2019				Published	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	THERAPEUTIC GAS DELIVERY DEVICE WITH PULSED AND CONTINUOUS FLOW CONTROL	14/211919	14-Mar-2014	9616193	11-Apr-2017	03-Jun-2035	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	THERAPEUTIC GAS DELIVERY DEVICE WITH PULSED AND CONTINUOUS FLOW CONTROL	14/218067	18-Mar-2014	10342948	09-Jul-2019	17-Mar-2036	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	THERAPEUTIC GAS DELIVERY DEVICE WITH PULSED AND CONTINUOUS FLOW CONTROL	15/483138	10-Apr-2017	10328231	25-Jun-2019	02-Jun-2034	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	ENHANCED PERFORMANCE VERIFICATION PORT FOR THERAPEUTIC GAS DELIVERY	16/704530	05-Dec-2019	11202873	21-Dec-2021	11-May-2035	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	SYSTEMS AND METHODS FOR DELIVERY OF THERAPEUTIC GAS	14/709316	11-May-2015	10576225	03-Mar-2020	21-Jul-2037	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	SYSTEMS AND METHOD FOR INTELLIGENT GAS SOURCE MANAGEMENT	14/709298	11-May-2015	10201674	12-Feb-2019	25-May-2037	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	SYSTEMS AND METHODS FOR INTELLIGENT GAS SOURCE MANAGEMENT AND/OR SYSTEMS AND METHODS FOR DELIVERY OF THERAPEUTIC GAS AND/OR ENHANCED PERFORMANCE VERIFICATION FOR THERAPEUTIC GAS DELIVERY	16/217969	12-Dec-2018	10894135	19-Jan-2021	16-Jul-2035	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHOD OF IDENTIFYING AND TREATING PREMATURE INFANTS AT RISK FOR BPD	15/320635	20-Dec-2016	10613103	07-Apr-2020	18-Jun-2035	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	METHODS OF REDUCING THE RISK OF MORTALITY ASSOCIATED WITH A MEDICAL TREATMENT	14/325993	08-Jul-2014				Published	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHODS OF REDUCING THE RISK OF MORTALITY ASSOCIATED WITH A MEDICAL TREATMENT	15/854643	29-Dec-2017				Published	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	THERAPEUTIC GAS DELIVERY DEVICE	29/467025	13-Sep-2013	D730525	26-May-2015	26-May-2029	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	THERAPEUTIC GAS DELIVERY DEVICE	29/467028	13-Sep-2013	D729937	19-May-2015	19-May-2029	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	CLINICAL DECISION SUPPORT SYSTEM AND METHODS	14/026807	13-Sep-2013	10512741	24-Dec-2019	03-May-2034	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	CLINICAL DECISION SUPPORT SYSTEM AND METHODS	16/677435	07-Nov-2019				Published	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	ADMINISTRATION AND MONITORING OF NITRIC OXIDE IN EX VIVO FLUIDS	14/095621	03-Dec-2013	9629358	25-Apr-2017	21-May-2034	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	ADMINISTRATION AND MONITORING OF NITRIC OXIDE IN EX VIVO FLUIDS	15/066672	10-Mar-2016	10667510	02-Jun-2020	03-Dec-2033	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	ADMINISTRATION AND MONITORING OF NITRIC OXIDE IN EX VIVO FLUIDS	15/493578	21-Apr-2017	11291202	05-Apr-2022	03-Dec-2033	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	METHODS OF USING INHALED NITRIC OXIDE GAS FOR TREATMENT OF ACUTE RESPIRATORY DISTRESS SYNDROME IN CHILDREN	14/593085	09-Jan-2015	9381212	05-Jul-2016	09-Jan-2035	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHODS OF USING INHALED NITRIC OXIDE GAS FOR TREATMENT OF ACUTE RESPIRATORY DISTRESS SYNDROME IN CHILDREN	16/217981	12-Dec-2018	10391120	27-Aug-2019	09-Jan-2035	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHODS OF USING INHALED NITRIC OXIDE GAS FOR TREATMENT OF ACUTE RESPIRATORY DISTRESS SYNDROME IN CHILDREN	15/170130	01-Jun-2016	10201564	12-Feb-2019	09-Jan-2035	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	SYSTEMS AND METHODS FOR COMPENSATING LONG TERM SENSITIVITY DRIFT OF ELECTROMECHANICAL GAS SENSORS EXPOSED TO NITRIC OXIDE	14/626409	19-Feb-2015	9279794	08-Mar-2016	19-Feb-2035	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	SYSTEMS AND METHODS FOR COMPENSATING LONG TERM SENSITIVITY DRIFT OF ELECTROMECHANICAL GAS SENSORS EXPOSED TO NITRIC OXIDE	15/010999	29-Jan-2016	11141549	12-Oct-2021	19-Feb-2035	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	SYSTEMS AND METHODS FOR COMPENSATING LONG TERM SENSITIVITY DRIFT OF ELECTROMECHANICAL GAS SENSORS EXPOSED TO NITRIC OXIDE	15/256053	02-Sep-2016	10166352	01-Jan-2019	19-Feb-2035	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	SYSTEMS AND METHODS FOR COMPENSATING LONG TERM SENSITIVITY DRIFT OF ELECTROMECHANICAL GAS SENSORS EXPOSED TO NITRIC OXIDE	15/277253	27-Sep-2016	9981097	29-May-2018	19-Feb-2035	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	SYSTEMS AND METHODS FOR COMPENSATING LONG TERM SENSITIVITY DRIFT OF ELECTROMECHANICAL GAS SENSORS EXPOSED TO NITRIC OXIDE	15/281176	30-Sep-2016	9974910	22-May-2018	19-Feb-2035	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED

Schedule III

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	SYSTEMS AND METHODS FOR COMPENSATING LONG TERM SENSITIVITY DRIFT OF ELECTROCHEMICAL GAS SENORS EXPOSED TO NITRIC OXIDE	15/284611	04-Oct-2016	10220170	05-Mar-2019	19-Feb-2035	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	SYSTEMS AND METHODS FOR COMPENSATING LONG TERM SENSITIVITY DRIFT OF ELECTROCHEMICAL GAS SENORS EXPOSED TO NITRIC OXIDE	15/341142	02-Nov-2016	9956364	01-May-2018	19-Feb-2035	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	SYSTEMS AND METHODS FOR COMPENSATING LONG TERM SENSITIVITY DRIFT OF ELECTROMECHANICAL GAS SENSORS EXPOSED TO NITRIC OXIDE	15/341262	02-Nov-2016	10195380	05-Feb-2019	19-Feb-2035	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	SYSTEMS AND METHODS FOR COMPENSATING LONG TERM SENSITIVITY DRIFT OF ELECTROMECHANICAL GAS SENSORS EXPOSED TO NITRIC OXIDE	15/341584	02-Nov-2016	9919118	20-Mar-2018	19-Feb-2035	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	SYSTEMS AND METHODS FOR COMPENSATING LONG TERM SENSITIVITY DRIFT OF ELECTROMECHANICAL GAS SENSORS EXPOSED TO NITRIC OXIDE	15/343314	04-Nov-2016	10046125	14-Aug-2018	19-Feb-2035	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	GAS DELIVERY DEVICE AND SYSTEM	15/001020	19-Jan-2016	10272225	30-Apr-2019	06-Jan-2031	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	NITRIC OXIDE DELIVERY DEVICE	15/204176	07-Jul-2016	10661045	26-May-2020	25-Sep-2033	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	GAS DELIVERY DEVICE AND SYSTEM	13/509873	11-Jun-2012	8573209	05-Nov-2013	06-Jan-2031	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	NITRIC OXIDE DELIVERY DEVICE	13/677483	15-Nov-2012	8573210	05-Nov-2013	06-Jan-2031	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	GAS DELIVERY DEVICE AND SYSTEM	13/493493	11-Jun-2012	8291904	23-Oct-2012	06-Jan-2031	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	GAS DELIVERY DEVICE AND SYSTEM	14/065962	29-Oct-2013	9265911	23-Feb-2016	06-Jan-2031	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	GAS DELIVERY DEVICE AND SYSTEM	14/065975	29-Oct-2013	8776795	15-Jul-2014	06-Jan-2031	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	NITRIC OXIDE DELIVERY DEVICE	14/065951	29-Oct-2013	8776794	15-Jul-2014	06-Jan-2031	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	NITRIC OXIDE DELIVERY DEVICE	14/328150	10-Jul-2014	9408993	09-Aug-2016	06-Jan-2031	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	GAS DELIVERY DEVICE AND SYSTEM	14/629742	24-Feb-2015	9295802	29-Mar-2016	06-Jan-2031	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	APPARATUS AND METHOD FOR MONITORING NITRIC OXIDE DELIVERY	16/537955	12-Aug-2019				Published	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	GAS DELIVERY DEVICE AND SYSTEM FOR USE IN MAGNETIC RESONANCE IMAGING	14/657548	13-Mar-2015	10188822	29-Jan-2019	28-Apr-2037	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	GAS DELIVERY DEVICE AND SYSTEM FOR USE IN MAGNETIC RESONANCE IMAGING	16/217998	12-Dec-2018	11065415	20-Jul-2021	25-Nov-2035	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHODS OF ADMINISTERING NITRIC OXIDE TO ARTERIAL OR ARTERIALIZED BLOOD	14/402786	21-Nov-2014	10052426	21-Aug-2018	23-Jun-2033	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	APPARATUS AND METHOD FOR MONITORING NITRIC OXIDE DELIVERY	15/683290	22-Aug-2017	10773046	15-Sep-2020	18-Aug-2033	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	APPARATUS AND METHOD FOR MONITORING NITRIC OXIDE DELIVERY	13/800287	13-Mar-2013	10426913	01-Oct-2019	06-Dec-2032	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	APPARATUS AND METHOD FOR MONITORING NITRIC OXIDE DELIVERY	13/671057	07-Nov-2012	9770570	26-Sep-2017	03-May-2036	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	System and Method of Administering a Pharmaceutical Gas to a Patient	16/156453	10-Oct-2018	10960169	30-Mar-2021	21-Sep-2025	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED

Schedule III

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	BREATHING APPARATUS DETECTION AND PURGING	15/412342	23-Jan-2017	10905845	02-Feb-2021	05-Apr-2032	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	CANNULA FOR MINIMIZING DILUTION OF DOSING DURING NITRIC OXIDE DELIVERY	14/096548	04-Dec-2013	9795756	24-Oct-2017	24-Feb-2036	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	CANNULA FOR MINIMIZING DILUTION OF DOSING DURING NITRIC OXIDE DELIVERY	14/096910	04-Dec-2013	9032959	19-May-2015	04-Dec-2033	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	CANNULA FOR MINIMIZING DILUTION OF DOSING DURING NITRIC OXIDE DELIVERY	14/706449	07-May-2015	10130783	20-Nov-2018	12-Nov-2035	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	CANNULA FOR MINIMIZING DILUTION OF DOSING DURING NITRIC OXIDE DELIVERY	15/790300	23-Oct-2017	10918819	16-Feb-2021	04-Dec-2033	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	SYSTEM AND METHOD OF ADMINISTERING A PHARMACEUTICAL GAS TO A PATIENT	15/167048	27-May-2016	10548920	04-Feb-2020	21-Sep-2025	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	SYSTEM AND METHOD OF ADMINISTERING A PHARMACEUTICAL GAS TO A PATIENT	11/231554	21-Sep-2005	7523752	28-Apr-2009	21-Sep-2025	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	SYSTEM AND METHOD OF ADMINISTERING A PHARMACEUTICAL GAS TO A PATIENT	13/331807	20-Dec-2011	8893717	25-Nov-2014	17-Feb-2033	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED

Schedule III

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	SYSTEM AND METHOD OF ADMINISTERING A PHARMACEUTICAL GAS TO A PATIENT	12/430220	27-Apr-2009	8091549	10-Jan-2012	19-Mar-2026	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	SYSTEM AND METHOD OF ADMINISTERING A PHARMACEUTICAL GAS TO A PATIENT	13/287663	02-Nov-2011	8517015	27-Aug-2013	21-Sep-2025	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	SYSTEM AND METHOD OF ADMINISTERING A PHARMACEUTICAL GAS TO A PATIENT	13/284433	28-Oct-2011	8397721	19-Mar-2013	21-Sep-2025	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	SYSTEM AND METHOD OF ADMINISTERING A PHARMACEUTICAL GAS TO A PATIENT	13/536272	28-Jun-2012	8408206	02-Apr-2013	21-Sep-2025	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	SYSTEM AND METHOD OF ADMINISTERING A PHARMACEUTICAL GAS TO A PATIENT	13/778596	27-Feb-2013	9351994	31-May-2016	10-Dec-2026	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	SYSTEM AND METHOD OF ADMINISTERING A PHARMACEUTICAL GAS TO A PATIENT	13/942049	15-Jul-2013	8720440	13-May-2014	21-Sep-2025	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	SYSTEM AND METHOD OF ADMINISTERING A PHARMACEUTICAL GAS TO A PATIENT	13/942115	15-Jul-2013	8607792	17-Dec-2013	21-Sep-2025	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	SYSTEM AND METHOD OF ADMINISTERING A PHARMACEUTICAL GAS TO A PATIENT	13/942136	15-Jul-2013	8616204	31-Dec-2013	21-Sep-2025	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	SYSTEM AND METHOD OF ADMINISTERING A PHARMACEUTICAL GAS TO A PATIENT	14/551186	24-Nov-2014	10099029	16-Oct-2018	21-Sep-2025	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED

Schedule III

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	METHOD OF TREATING PATIENTS WITH HEPATORENAL SYNDROME TYPE 1	14/920392	22-Oct-2015	10335452	02-Jul-2019	05-Apr-2037	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	SYSTEM AND METHODS FOR INDICATING LIFETIME OF AN NO2-TO-NO REACTOR CARTRIDGE USED TO DELIVER NO FOR INHALATION THERAPY TO A PATIENT	14/712419	14-May-2015	10525226	07-Jan-2020	11-Aug-2037	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	SYSTEMS AND METHODS FOR MANUFACTURING AND SAFETY OF AN NO2-TO-NO REACTOR CARTRIDGE USED TO DELIVER NO FOR INHALATION THERAPY TO A PATIENT	14/744298	19-Jun-2015	10384031	20-Aug-2019	13-Feb-2038	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	SYSTEMS AND METHODS FOR MANUFACTURING AND SAFETY OF AN NO2-TO-NO REACTOR CARTRIDGE USED TO DELIVER NO FOR INHALATION THERAPY TO A PATIENT	16/502828	03-Jul-2019				Published	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	DEVICE AND METHOD FOR DIFFUSING HIGH CONCENTRATION NO WITH INHALATION THERAPY GAS	15/281512	30-Sep-2016	10894140	19-Jan-2021	13-Jun-2039	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	SYSTEMS AND METHOD FOR DELIVERY OF THERAPEUTIC GAS TO PATIENTS IN NEED THEREOF USING ENHANCED BREATHING CIRCUIT GAS (BCG) FLOW MEASUREMENT	16/253834	22-Jan-2019				Published	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	SYSTEMS AND METHOD FOR DELIVERY OF THERAPEUTIC GAS TO PATIENTS IN NEED THEREOF USING ENHANCED BREATHING CIRCUIT GAS (BCG) FLOW MEASUREMENT	16/253871	22-Jan-2019	11260196	01-Mar-2022	05-Dec-2036	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	SYSTEMS AND METHOD FOR DELIVERY OF THERAPEUTIC GAS TO PATIENTS, IN NEED THEREOF, RECEIVING BREATHING GAS FROM A VENTILATOR THAT VARIES AT LEAST PRESSURE AND/OR FLOW USING ENHANCED THERAPEUTIC GAS (NO) FLOW MEASUREMENT	14/700594	30-Apr-2015	10071213	11-Sep-2018	05-Dec-2036	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	SYSTEMS AND METHOD FOR DELIVERY OF THERAPEUTIC GAS TO PATIENTS, IN NEED THEREOF, RECEIVING BREATHING GAS FROM A VENTILATOR THAT VARIES AT LEAST PRESSURE AND/OR FLOW USING ENHANCED THERAPEUTIC GAS (NO) FLOW MEASUREMENT	16/058402	08-Aug-2018	10835696	17-Nov-2020	22-Oct-2035	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	SYSTEMS AND METHODS FOR DELIVERY OF THERPEUTIC GAS TO PATIENTS IN NEED THEREOF USING ENHANCED BREATHING CIRCUIT GAS (BCG) FLOW MEASUREMENT	14/674327	31-Mar-2015	10232138	19-Mar-2019	05-Dec-2036	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	SYSTEMS AND METHODS FOR DELIVERY OF THERPEUTIC GAS TO PATIENTS IN NEED THEREOF USING ENHANCED BREATHING CIRCUIT GAS (BCG) FLOW MEASUREMENT	14/672447	30-Mar-2015	10226592	12-Mar-2019	05-Dec-2036	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	DEVICES AND METHODS FOR ENGAGING INDEXED VALVE AND PRESSURE CANISTER ASSEMBLY WITH COLLAR AND FOR LINEAR ACTUATION BY PLUNGER ASSEMBLY INTO FLUID COMMUNICATION WITH DEVICE FOR REGULATING DRUG DELIVERY	15/899063	19-Feb-2018	11154684	26-Oct-2021	07-Oct-2031	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	DEVICES AND METHODS FOR ENGAGING INDEXED VALVE AND PRESSURE CANISTER ASSEMBLY WITH COLLAR AND FOR LINEAR ACTUATION BY PLUNGER ASSEMBLY INTO FLUID COMMUNICATION WITH DEVICE FOR REGULATING DRUG DELIVERY	13/260505	26-Sep-2011	8757148	24-Jun-2014	23-Jan-2030	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHOD OF TREATING PATIENTS WITH HEPATORENAL SYNDROME TYPE 1	16/411944	14-May-2019				Published	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	DEVICES AND METHODS FOR ENGAGING INDEXED VALVE AND PRESSURE CANISTER ASSEMBLY WITH COLLAR AND FOR LINEAR ACTUATION BY PLUNGER ASSEMBLY INTO FLUID COMMUNICATION WITH DEVICE FOR REGULATING DRUG DELIVERY	14/301692	11-Jun-2014	9895199	20-Feb-2018	23-Jan-2030	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	THERAPEUTIC GAS DELIVERY DEVICE	29/455842	24-May-2013	D701963	01-Apr-2014	01-Apr-2028	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED

Schedule III

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	THERAPEUTIC GAS DELIVERY DEVICE	29/464499	16-Aug-2013	D729936	19-May-2015	19-May-2029	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	CANNULA FOR MINIMIZING DILUTION OF DOSING DURING NITRIC OXIDE DELIVERY	15/412348	23-Jan-2017	10556082	11-Feb-2020	04-Dec-2033	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	CANNULA FOR MINIMIZING DILUTION OF DOSING DURING NITRIC OXIDE DELIVERY	14/096629	04-Dec-2013	8770199	08-Jul-2014	04-Dec-2033	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	CANNULA FOR MINIMIZING DILUTION OF DOSING DURING NITRIC OXIDE DELIVERY	14/312003	23-Jun-2014	9550039	27-Jan-2017	12-Aug-2034	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	BREATHING APPARATUS DETECTION AND PURGING	13/440046	05-Apr-2012	8944051	03-Feb-2015	05-Apr-2032	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	BREATHING APPARATUS DETECTION AND PURGING	14/394433	03-Apr-2013	9108016	18-Aug-2015	05-Apr-2032	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	BREATHING APPARATUS DETECTION AND PURGING	14/827523	17-Aug-2015	9550040	24-Jan-2017	05-Apr-2032	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHODS OF ADMINISTERING HIGH CONCENTRATIONS OF NITRIC OXIDE	13/827240	14-Mar-2013	10556086	11-Feb-2020	15-Mar-2032	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED

Schedule III

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	FORMULATIONS OF L-ORNITHINE PHENYLACETATE	17/570253	06-Jan-2022				Pending	OCERA THERAPEUTICS, INC.
United States of America	FORMULATIONS OF L-ORNITHINE PHENYLACETATE	17/559453	22-Dec-2021				Pending	OCERA THERAPEUTICS, INC.
United States of America	METHODS TO PRODUCE HIGHLY IMMATURE MONOCYTE DERIVED DENDRITIC CELLS	17/547966	10-Dec-2021				Pending	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	L-ORNITHINE PHENYL ACETATE AND METHODS OF MAKING THEREOF	17/516591	01-Nov-2021				Pending	OCERA THERAPEUTICS, INC.
United States of America	METHOD FOR EX-VIVO EXPANSION OF REGULATORY T CELLS WITH ENHANCED SUPPRESSIVE FUNCTION FOR CLINICAL APPLICATION IN IMMUNE MEDIATED DISEASES	17/515985	01-Nov-2021				Published	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	ENHANCED PERFORMANCE VERIFICATION PORT FOR THERAPEUTIC GAS DELIVERY	17/525349	12-Nov-2021				Pending	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	INJECTABLE SUSTAINED RELEASE PHARMACEUTICAL COMPOSITION	63/282014	22-Nov-2021			22-Nov-2022	Pending	SPECGX LLC

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	Method of Treating Patients With Hepatorenal Syndrome Type 1	17/587442	28-Jan-2022				Pending	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHODS OF EXTRACORPOREAL PHOTOPHERESIS FOR IMMUNE-RELATED ADVERSE EVENTS	63/304937	31-Jan-2022			31-Jan-2023	Pending	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	APPARATUS AND METHOD FOR FILTERING LIQUID PARTICLES FROM INSPIRATORY GAS FLOW OF A PATIENT BREATHING CIRCUIT AFFILIATED WITH A VENTILATOR AND/OR NITRIC OXIDE DELIVERY SYSTEM	17/666983	08-Feb-2022				Pending	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	INTELLIGENT GAS SOURCE MANAGEMENT	17/674198	17-Feb-2022				Pending	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	A NEW SYNTHETIC ROUTE TO 14-HYDROXYL OPIATES THROUGH 1-HALO-THEBAINE OR ANALOGS	11/917180	11-Dec-2007	8067597	29-Nov-2011	03-Mar-2029	Granted	SPECGX LLC
United States of America	SUBSTITUTED BERBINES AND PROCESSES FOR THEIR SYNTHESIS	15/235312	12-Aug-2016	9856251	02-Jan-2018	02-Sep-2029	Granted	SPECGX LLC
United States of America	SUBSTITUTED BERBINES AND PROCESSES FOR THEIR SYNTHESIS	12/552457	02-Sep-2009	9458109	04-Oct-2016	21-Feb-2032	Granted	SPECGX LLC

Schedule III

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	PROCESS FOR THE PREPARATION OF QUATERNARY N-ALKYL MORPHINAN ALKALOID SALTS	12/529723	22-Nov-2010	8669366	11-Mar-2014	10-Oct-2028	Granted	SPECGX LLC
United States of America	PROCESS FOR THE PREPARATION OF QUATERNARY N-ALKYL MORPHINAN ALKALOID SALTS	12/553144	03-Sep-2009	9040726	26-May-2015	07-Jan-2030	Granted	SPECGX LLC
United States of America	PROCESSES AND COMPOUNDS FOR THE PREPARATION OF NORMORPHINANS	12/469951	21-May-2009	8148528	03-Apr-2012	20-Apr-2030	Granted	SPECGX LLC
United States of America	PROCESS FOR THE PREPARATION OF QUATERNARY N-ALKYL MORPHINAN ALKALOID SALTS	14/569309	12-Dec-2014	9415044	16-Aug-2016	06-Mar-2028	Granted	SPECGX LLC
United States of America	3-OXY-HYDROMORPHONE DERIVATIVES	12/833025	09-Jul-2010	8623888	07-Jan-2014	29-Oct-2031	Granted	SPECGX LLC
United States of America	PREPARATION OF SUBSTITUTED MORPHINAN-6-ONES AND SALTS AND INTERMEDIATES THEREOF	12/441397	16-Mar-2009	8115002	14-Feb-2012	14-Nov-2028	Granted	SPECGX LLC
United States of America	PREPARATION OF 3,4-DIHYDROISOQUINOLINES FROM AN ACID AND AN AMINE	12/518434	10-Jun-2009	8445682	21-May-2013	10-Sep-2029	Granted	SPECGX LLC

Schedule III

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	PREPARATION OF 3,4-DIHYDROISOQUINOLINES IN THE SYNTHESIS OF MORPHINANS	12/482014	10-Jun-2009	8232400	31-Jul-2012	26-Aug-2030	Granted	SPECGX LLC
United States of America	PREPARATION OF AMIDES FROM AN ACID FOR INTERMEDIATES IN THE SYNTHESIS OF MORPHINANS	12/481993	10-Jun-2009	8461384	11-Jun-2013	13-Nov-2030	Granted	SPECGX LLC
United States of America	THE USE OF ORIPAVINE AS A STARTING MATERIAL FOR BUPRENORPHINE	12/159025	24-Jun-2008	8993764	31-Mar-2015	22-Feb-2030	Granted	SPECGX LLC
United States of America	A PROCESS FOR THE PREPARATION OF HEXAHYDROISOQUINOLINES FROM 1,2,3,4-TETRAHYDROISOQUINOLINES	12/482036	10-Jun-2009	8227611	24-Jul-2012	04-Apr-2029	Granted	SPECGX LLC
United States of America	PREPARATION OF TETRAHYDROISOQUINOLINES FROM DIHYDROISOQUINOLINES	12/518430	10-Jun-2009	8242277	14-Aug-2012	22-Feb-2029	Granted	SPECGX LLC
United States of America	SOLID SUPPORT FOR FMOC-SOLID PHASE SYNTHESIS OF PEPTIDES	12/264948	05-Nov-2008	7714063	11-May-2010	05-Nov-2028	Granted	SPECGX LLC
United States of America	CRYSTALLINE FORMS OF NALTREXONE METHOBROMIDE	12/668218	08-Jan-2010	8383649	26-Feb-2013	11-Oct-2029	Granted	SPECGX LLC

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	PROCESSES FOR SYNTHESIS OF OPIATE ALKALOID DERIVATIVES	12/586874	29-Sep-2009	8273887	25-Sep-2012	24-Dec-2030	Granted	SPECGX LLC
United States of America	PREPARATION OF N-ALKYLATED OPIATES BY REDUCTIVE AMINATION	12/668900	13-Jan-2010	8729266	20-May-2014	13-Aug-2029	Granted	SPECGX LLC
United States of America	COMPOSITION AND METHOD FOR THE RELEASE OF PROTECTED PEPTIDES FROM A RESIN	12/298917	29-Oct-2008	8022181	20-Sep-2011	19-Jun-2028	Granted	SPECGX LLC
United States of America	PREPARATION OF OXYMORPHONE FROM ORIPAVINE	12/532410	22-Sep-2009	8217175	10-Jul-2012	29-May-2029	Granted	SPECGX LLC
United States of America	CRYSTALLINE FORMS OF NALTREXONE HYDROCHLORIDE	12/595543	12-Oct-2009	8399475	19-Mar-2013	27-Nov-2029	Granted	SPECGX LLC
United States of America	N-DEMETHYLATION OF N-METHYL MORPHINANS	12/316821	17-Dec-2008	7671204	02-Mar-2010	17-Dec-2028	Granted	SPECGX LLC
United States of America	PROCESS FOR THE PREPARATION OF 3-HYDROXYMORPHINAN DERIVATIVES	12/372788	18-Feb-2009	7999105	16-Aug-2011	19-Apr-2030	Granted	SPECGX LLC
United States of America	PROCESS FOR THE PREPARATION OF 6alpha-HYDROXY-N-ALKYLATED OPIATES	12/444421	06-Apr-2009	7985858	26-Jul-2011	09-May-2029	Granted	SPECGX LLC
United States of America	PROCESS FOR THE PREPARATION OF 6alpha-HYDROXY-N-ALKYLATED OPIATES	12/630171	03-Dec-2009	8273888	25-Sep-2012	26-Apr-2030	Granted	SPECGX LLC

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	PROCESS FOR THE PREPARATION OF 6alpha-HYDROXY-N-ALKYLATED OPIATES	12/630192	03-Dec-2009	8524904	03-Sep-2013	04-Dec-2029	Granted	SPECGX LLC
United States of America	NOVEL OPIATE REDUCTION UTILIZING CATALYTIC HYDROGEN TRANSFER REACTION	12/595519	12-Oct-2009	8309727	13-Nov-2012	29-Jul-2029	Granted	SPECGX LLC
United States of America	RECYCLING PROCESS FOR INCREASING THE YIELD OF OPIATE ALKALOID DERIVATIVES	12/586856	29-Sep-2009	8232398	31-Jul-2012	01-Jan-2031	Granted	SPECGX LLC
United States of America	EXTENDED RELEASE, ABUSE DETERRENT SOLID DOSAGE FORMS	15/464865	21-Mar-2017	10624888	21-Apr-2020	21-Mar-2037	Granted	SPECGX LLC
United States of America	GLUCOMANNAN CONTAINING PHARMACEUTICAL COMPOSITIONS WITH EXTENDED RELEASE AND ABUSE DETERRENT PROPERTIES	15/417541	27-Jan-2017	11065246	20-Jul-2021	27-Jan-2037	Granted	SPECGX LLC
United States of America	SYSTEMS AND METHODS FOR PROVIDING A PULSE OF A THERAPEUTIC GAS WITH A DESIRED FLOW PROFILE TO MAXIMIZE THERAPEUTIC EFFECTIVENESS	14/886556	19-Oct-2015	10758703	01-Sep-2020	01-Jun-2039	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	METHOD AND APPARATUS FOR THE CONTINUOUS SEPARATION OF BIOLOGICAL FLUIDS INTO COMPONENTS	10/375629	27-Feb-2003	7186230	06-Mar-2007	01-Sep-2024	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHOD AND APPARATUS FOR THE CONTINUOUS SEPARATION OF BIOLOGICAL FLUIDS INTO COMPONENTS	10/654742	03-Sep-2003	7211037	01-May-2007	01-Mar-2024	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHOD AND APPARATUS FOR THE CONTINUOUS SEPARATION OF BIOLOGICAL FLUIDS INTO COMPONENTS	10/654803	03-Sep-2003	7479123	20-Jan-2009	27-Nov-2025	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHOD AND APPARATUS FOR THE CONTINUOUS SEPARATION OF BIOLOGICAL FLUIDS INTO COMPONENTS	11/613021	01-Dec-2006	7850634	14-Dec-2010	13-Jan-2025	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHOD AND APPARATUS FOR THE CONTINUOUS SEPARATION OF BIOLOGICAL FLUIDS INTO COMPONENTS	12/795308	07-Jun-2010	9238097	19-Jan-2016	03-Jul-2024	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHOD AND APPARATUS FOR THE CONTINUOUS SEPARATION OF BIOLOGICAL FLUIDS INTO COMPONENTS	11/406988	19-Apr-2006	7914477	29-Mar-2011	16-Feb-2026	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED

Schedule III

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	METHOD AND APPARATUS FOR THE CONTINUOUS SEPARATION OF BIOLOGICAL FLUIDS INTO COMPONENTS	11/407271	19-Apr-2006	7503889	17-Mar-2009	11-Jun-2024	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHOD FOR COLLECTING A DESIRED BLOOD COMPONENT AND PERFORMING A PHOTOPHERESIS TREATMENT	15/491835	19-Apr-2017	10556055	11-Feb-2020	27-Feb-2023	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHOD FOR EX-VIVO EXPANSION OF REGULATORY T CELLS WITH ENHANCED SUPPRESSIVE FUNCTION FOR CLINICAL APPLICATION IN IMMUNE MEDIATED DISEASES	15/981332	16-May-2018	11186823	30-Nov-2021	17-May-2030	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	PROCESSING BLOOD	15/974881	09-May-2018	10296020	23-Feb-2021	01-Jun-2030	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	PROCESSING BLOOD	16/171089	25-Oct-2018	10940259	09-Mar-2021	01-Jun-2030	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	PROCESSING BLOOD	16/171096	25-Oct-2018	10953149	23-Mar-2021	01-Jun-2030	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	USE OF APOPTOTIC CELLS EX VIVO TO GENERATE REGULATORY T CELLS	16/165679	19-Oct-2018	11124767	21-Sep-2021	02-Nov-2026	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED

Schedule III

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	USE OF APOPTOTIC CELLS EX VIVO TO GENERATE REGULATORY T CELLS	11/579319	14-Jul-2008	9169461	27-Oct-2015	02-Nov-2026	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	USE OF APOPTOTIC CELLS EX VIVO TO GENERATE REGULATORY T CELLS	14/863274	23-Sep-2015	10138464	27-Nov-2018	27-May-2027	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	CASSETTE FOR CONTROLLING MOVEMENT OF BLOOD AND SEPARATED BLOOD COMPONENTS	11/444721	01-Jun-2006	7465285	16-Dec-2008	01-Jun-2026	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHOD AND APPARATUS FOR COLLECTING A BLOOD COMPONENT AND PERFORMING A PHOTOPHERESIS TREATMENT	11/304092	15-Dec-2005	7476209	13-Jan-2009	15-Dec-2025	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	PHOTOTHERAPY COMPOSITIONS AND METHODS	11/311714	19-Dec-2005	8057785	15-Nov-2011	22-Nov-2027	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	PHOTOTHERAPY COMPOSITIONS AND METHODS	13/243103	23-Sep-2011	8481008	09-Jul-2013	19-Dec-2025	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	CENTRIFUGE SYSTEM AND METHOD FOR COMPONENT TRACKING	15/261968	11-Sep-2016	10434239	08-Oct-2019	09-Apr-2037	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	CENTRIFUGE SYSTEM AND METHOD FOR COMPONENT TRACKING	16/537103	09-Aug-2019	11020522	01-Jun-2021	06-Jan-2037	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED

Schedule III

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	SUPPORT FOR CENTRIFUGE TUBING	15/570996	31-Oct-2017	10641415	05-May-2020	05-May-2036	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	DEVICES, METHODS AND SYSTEMS FOR PRIMING, SEPARATING, AND COLLECTING BLOOD COMPONENTS	15/737163	15-Dec-2017	10828415	10-Nov-2020	16-Oct-2037	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	TREATMENT OF TISSUE ADHESION	13/321954	22-Nov-2011	9089584	28-Jul-2015	28-May-2030	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	DRY POWDER FIBRIN SEALANT	13/322754	28-Nov-2011	9119897	01-Sep-2015	28-May-2030	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	POWDER DELIVERY DEVICE	13/139781	15-Dec-2009	9205240	08-Dec-2015	15-Dec-2029	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	ONE STEP MILLING PROCESS FOR PREPARING MICRONIZED PALIPERIDONE ESTERS	16/219253	13-Dec-2018				Published	SPECGX LLC
United States of America	METHODS FOR TREATING HYPERBILIRUBINEMIA WITH STANNSOPORFIN	16/505295	08-Jul-2019				Published	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	COMPOSITIONS COMPRISING ORNITHINE AND PHENYLACETATE OR PHENYLBUTYRATE FOR TREATING HEPATIC ENCEPHALOPATHY	11/720268	03-Oct-2007	8389576	05-Mar-2013	08-Dec-2025	Granted	OCERA THERAPEUTICS, INC.
United States of America	HIGH-PURITY LARGE-SCALE PREPARATION OF STANNSOPORFIN	15/867900	11-Jan-2018	10273255	30-Apr-2019	04-Oct-2027	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHODS FOR SYNTHESIZING METAL MESOPORPHYRINS	13/435868	30-Mar-2012	8735574	27-May-2014	30-Mar-2032	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHODS FOR SYNTHESIZING METAL MESOPORPHYRINS	14/253710	15-Apr-2014	9181285	10-Nov-2015	30-Mar-2032	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHODS FOR SYNTHESIZING METAL MESOPORPHYRINS	14/875141	05-Oct-2015	9688705	27-Jun-2017	30-Mar-2032	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHODS FOR SYNTHESIZING METAL MESOPORPHYRINS	15/603654	24-May-2017				Published	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHODS FOR SYNTHESIZING METAL MESOPORPHYRINS	16/125190	07-Sep-2018	10533024	14-Jan-2020	30-Mar-2032	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHODS FOR TREATING HYPERBILIRUBINEMIA WITH STANNSOPORFIN	13/691677	30-Nov-2012				Published	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	HIGH-PURITY LARGE-SCALE PREPARATION OF STANNSOPORFIN	16/298603	11-Mar-2019	10662209	26-May-2020	04-Oct-2027	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	CRYOPRESERVATION OF VIABLE HUMAN SKIN SUBSTITUTES	16/122598	05-Sep-2018	11297829	12-Apr-2022	13-Mar-2034	Granted	STRATATECH CORPORATION
United States of America	HUMAN SKIN SUBSTITUTES EXPRESSING IL-12	16/150048	02-Oct-2018				Published	STRATATECH CORPORATION
United States of America	CRYOPRESERVATION OF VIABLE HUMAN SKIN SUBSTITUTES	14/208439	13-Mar-2014	10091983	09-Oct-2018	13-Mar-2034	Granted	STRATATECH CORPORATION
United States of America	SKIN SUBSTITUTES WITH IMPROVED PURITY	11/375950	15-Mar-2006	9295543	29-Mar-2016	15-Mar-2026	Granted	STRATATECH CORPORATION
United States of America	COLD STORAGE OF ORGANOTYPICALLY CULTURED SKIN EQUIVALENTS FOR CLINICAL APPLICATIONS	15/375755	12-Dec-2016	10743533	18-Aug-2020	14-Nov-2028	Granted	STRATATECH CORPORATION
United States of America	DRIED AND IRRADIATED SKIN EQUIVALENTS FOR READY USE	15/377323	13-Dec-2016	9867904	16-Jan-2018	04-Nov-2029	Granted	STRATATECH CORPORATION
United States of America	DRIED AND IRRADIATED SKIN EQUIVALENTS FOR READY USE	12/612284	04-Nov-2009	8580314	12-Nov-2013	04-Nov-2029	Granted	STRATATECH CORPORATION
United States of America	DRIED AND IRRADIATED SKIN EQUIVALENTS FOR READY USE	14/054445	15-Oct-2013	8685463	01-Apr-2014	04-Nov-2029	Granted	STRATATECH CORPORATION
United States of America	DRIED AND IRRADIATED SKIN EQUIVALENTS FOR READY USE	14/220320	20-Mar-2014	8992997	31-Mar-2015	04-Nov-2029	Granted	STRATATECH CORPORATION

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	DRIED AND IRRADIATED SKIN EQUIVALENTS FOR READY USE	14/669095	25-Mar-2015	9526811	27-Dec-2016	04-Nov-2029	Granted	STRATATECH CORPORATION
United States of America	HUMAN SKIN EQUIVALENTS EXPRESSING EXOGENOUS POLYPEPTIDES	10/909119	30-Jul-2004	7674291	09-Mar-2010	30-Jul-2024	Granted	STRATATECH CORPORATION
United States of America	HUMAN SKIN EQUIVALENTS EXPRESSING EXOGENOUS POLYPEPTIDES	12/690160	20-Jan-2010	8092531	10-Jan-2012	30-Jul-2024	Granted	STRATATECH CORPORATION
United States of America	HUMAN SKIN EQUIVALENTS EXPRESSING EXOGENOUS POLYPEPTIDES	14/335534	18-Jul-2014	9526748	27-Dec-2016	01-Sep-2024	Granted	STRATATECH CORPORATION
United States of America	METHODS AND COMPOSITIONS FOR SELECTING CELLS WITH INCREASED POTENCY	11/297916	09-Dec-2005	9216202	22-Dec-2015	30-Jul-2024	Granted	STRATATECH CORPORATION
United States of America	HUMAN SKIN EQUIVALENTS ENGINEERED TO EXPRESS EXOGENOUS ANTIMICROBIAL POLYPEPTIDES	13/343314	04-Jan-2012	8790636	29-Jul-2014	30-Jul-2024	Granted	STRATATECH CORPORATION
United States of America	HUMAN SKIN EQUIVALENTS ENGINEERED TO EXPRESS EXOGENOUS ANTIMICROBIAL POLYPEPTIDES	16/036619	16-Jul-2018	10918768	16-Feb-2021	30-Jul-2024	Granted	STRATATECH CORPORATION

Schedule III

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	HUMAN SKIN EQUIVALENTS EXPRESSING EXOGENOUS POLYPEPTIDES	11/365357	01-Mar-2006	9163076	20-Oct-2015	01-Mar-2026	Granted	STRATATECH CORPORATION
United States of America	ACTH FOR TREATMENT OF ACUTE RESPIRATORY DISTRESS SYNDROME	14/214449	14-Mar-2014	10232018	19-Mar-2019	08-Jun-2034	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	APPARATUS AND METHOD FOR HUMIDITY CONDITIONING SAMPLE GAS OF A PATIENT BREATHING CIRCUIT AFFILIATED WITH A VENTILATOR AND/OR NITRIC OXIDE DELIVERY SYSTEM	16/665353	28-Oct-2019				Published	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	DELAYED SUSTAINED RELEASE PHARMACEUTICAL PREPARATION	16/002285	07-Jun-2018	11033508	15-Jun-2021	07-Jun-2038	Granted	SPECGX LLC
United States of America	PROCESS FOR PREPARING ACYLATED AMPHETAMINE DERIVATIVES	16/201645	27-Nov-2018	10927068	23-Feb-2021	27-Nov-2038	Granted	SPECGX LLC

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	APPARATUS AND METHOD FOR HUMIDITY CONDITIONING SAMPLE GAS OF A PATIENT BREATHING CIRCUIT AFFILIATED WITH A VENTILATOR AND/OR NITRIC OXIDE DELIVERY SYSTEM	15/459060	15-Mar-2017	10485945	26-Nov-2019	02-Mar-2038	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHODS TO IMPROVE ORGAN VIABILITY	16/112297	24-Aug-2018	11044904	29-Jun-2021	09-Feb-2039	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	ACTH PROPHYLACTIC TREATMENT OF RENAL DISORDERS	13/281175	25-Oct-2011	8796416	05-Aug-2014	25-Oct-2031	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	ACTH PROPHYLACTIC TREATMENT OF RENAL DISORDERS	14/313903	24-Jun-2014	9550822	24-Jan-2017	25-Oct-2031	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	ACTH PROPHYLACTIC TREATMENT OF RENAL DISORDERS	15/383969	19-Dec-2016	10286041	14-May-2019	25-Oct-2031	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	TISSUE CONTAINER SYSTEMS	16/481405	26-Jul-2019				Published	STRATATECH CORPORATION
United States of America	PREPARATION OF METAL MESOPORPHYRIN HALIDE COMPOUNDS	10/453815	03-Jun-2003	6818763	16-Nov-2004	03-Jun-2023	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	PREPARATION OF METAL MESOPORPHYRIN HALIDE COMPOUNDS	10/812156	29-Mar-2004	7375216	20-May-2008	03-Jun-2023	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	PREPARATION OF METAL MESOPORPHYRIN HALIDE COMPOUNDS	11/957317	14-Dec-2007	7777028	17-Aug-2010	03-Jun-2023	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	PREPARATION OF METAL MESOPORPHYRIN HALIDE COMPOUNDS	12/833873	09-Jul-2010	8178664	15-May-2012	03-Jun-2023	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	HIGH-PURITY LARGE-SCALE PREPARATION OF STANNSOPORFIN	11/867559	04-Oct-2007	7960371	14-Jun-2011	06-Apr-2029	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	HIGH-PURITY LARGE-SCALE PREPARATION OF STANNSOPORFIN	12/968651	15-Dec-2010	8530458	10-Sep-2013	04-Oct-2027	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	HIGH-PURITY LARGE-SCALE PREPARATION OF STANNSOPORFIN	14/019513	05-Sep-2013	8835416	16-Sep-2014	04-Oct-2027	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	HIGH-PURITY LARGE-SCALE PREPARATION OF STANNSOPORFIN	14/460080	14-Aug-2014	9107927	18-Aug-2015	04-Oct-2027	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	HIGH-PURITY LARGE-SCALE PREPARATION OF STANNSOPORFIN	14/793921	08-Jul-2015	9517239	13-Dec-2016	04-Oct-2027	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	HIGH-PURITY LARGE-SCALE PREPARATION OF STANNSOPORFIN	15/343967	04-Nov-2016	9902745	27-Feb-2018	04-Oct-2027	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	KERATINOCYTES EXPRESSING EXOGENOUS ANGIOGENIC GROWTH FACTORS	10/425784	29-Apr-2003	7498167	03-Mar-2009	29-Apr-2023	Granted	STRATATECH CORPORATION
United States of America	KERATINOCYTES EXPRESSING EXOGENOUS ANGIOGENIC GROWTH FACTORS	12/392221	25-Feb-2009	7915042	29-Mar-2011	29-Apr-2023	Granted	STRATATECH CORPORATION

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	ORGANOTYPICALLY CULTURED SKIN TISSUE COMPRISING NIKS CELLS THAT EXPRESS EXOGENOUS HIF-1A	10/848646	19-May-2004	7807148	05-Oct-2010	29-Apr-2023	Granted	STRATATECH CORPORATION
United States of America	METHOD OF TREATMENT USING ORGANOTYPICALLY CULTURED SKIN TISSUE COMPRISING NIKS CELLS THAT EXPRESS EXOGENOUS HIF-1A	12/886976	21-Sep-2010	7988959	02-Aug-2011	29-Apr-2023	Granted	STRATATECH CORPORATION
United States of America	METHOD OF TREATMENT USING ORGANOTYPICALLY CULTURED SKIN TISSUE COMPRISING NIKS CELLS THAT EXPRESS EXOGENOUS HIF-1A	13/195614	01-Aug-2011	8808685	19-Aug-2014	29-Apr-2023	Granted	STRATATECH CORPORATION
United States of America	SPECIES SPECIFIC DNA DETECTION	10/633141	01-Aug-2003	7462448	09-Dec-2008	01-Aug-2023	Granted	STRATATECH CORPORATION
United States of America	KIT FOR SPECIES SPECIFIC DNA DETECTION	12/329151	05-Dec-2008	7888496	15-Feb-2011	01-Aug-2023	Granted	STRATATECH CORPORATION
United States of America	SKIN SUBSTITUTES WITH IMPROVED BARRIER FUNCTION	11/235814	27-Sep-2005	7407805	05-Aug-2008	01-Mar-2022	Granted	STRATATECH CORPORATION
United States of America	SKIN SUBSTITUTES WITH IMPROVED BARRIER FUNCTION	12/174319	16-Jul-2008	7955790	07-Jun-2011	01-Mar-2022	Granted	STRATATECH CORPORATION
United States of America	SKIN SUBSTITUTES AND USES THEREOF	10/087641	01-Mar-2002	6846675	25-Jan-2005	01-Mar-2022	Granted	STRATATECH CORPORATION

Schedule III

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	SKIN SUBSTITUTES AND USES THEREOF	11/006014	07-Dec-2004	7541188	02-Jun-2009	01-Mar-2022	Granted	STRATATECH CORPORATION
United States of America	SKIN SUBSTITUTES FOR IRRITANCY TESTING	10/087388	01-Mar-2002	7501238	10-Mar-2009	01-Mar-2022	Granted	STRATATECH CORPORATION
United States of America	RECOMBINANT FIBRINOGEN	15/331942	24-Oct-2016	10562956	18-Feb-2020	04-Jan-2030	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	SKIN SUBSTITUTES WITH IMPROVED BARRIER FUNCTION	10/087346	01-Mar-2002	6974697	13-Dec-2005	01-Mar-2022	Granted	STRATATECH CORPORATION
United States of America	BIODEGRADABLE EXTRAVASCULAR STENT	15/400628	06-Jan-2017	10456505	29-Oct-2019	05-Feb-2030	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	APPARATUS AND METHOD FOR FILTERING LIQUID PARTICLES FROM INSPIRATORY GAS FLOW OF A PATIENT BREATHING CIRCUIT AFFILIATED WITH A VENTILATOR AND/OR NITRIC OXIDE DELIVERY SYSTEM	15/446110	01-Mar-2017	10744292	18-Aug-2020	23-Apr-2038	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	APPARATUS AND METHOD FOR DETECTING LIQUID LEVEL IN A CLEAR OR PARTIALLY CLEAR CONTAINER	15/460334	16-Mar-2017	10543334	28-Jan-2020	31-Jan-2038	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	MRI COMPATIBLE THERAPEUTIC GAS DELIVERY CART	29/544072	30-Oct-2015	D776279	10-Jan-2017	10-Jan-2032	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	MRI COMPATIBLE THERAPEUTIC GAS DELIVERY CART	29/578295	20-Sep-2016	D807510	09-Jan-2018	30-Oct-2035	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	DRY POWDER FIBRIN SEALANT	13/520632	29-Aug-2012	8846105	30-Sep-2014	07-Jan-2031	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	MEDICAL INSTRUMENTS	29/339045	23-Jun-2009	D628692	07-Dec-2010	07-Dec-2024	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	POWDER DELIVERY DEVICE	13/995267	18-Jun-2013	10010705	03-Jul-2018	02-Dec-2034	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	MEDICAL INSTRUMENT	29/394931	23-Jun-2011	D683851	04-Jun-2013	04-Jun-2027	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	USE AND MONITORING OF INHALED NITRIC OXIDE WITH LEFT VENTRICULAR ASSIST DEVICES	15/418837	30-Jan-2017	10398820	03-Sep-2019	29-Apr-2037	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	USE AND MONITORING OF INHALED NITRIC OXIDE WITH LEFT VENTRICULAR ASSIST DEVICES	16/077276	10-Aug-2018	11202899	21-Dec-2021	19-Jun-2037	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	COMPENSATING FOR DISRUPTIONS IN BREATHING GAS FLOW MEASUREMENT	15/420689	31-Jan-2017	10478584	19-Nov-2019	31-Oct-2037	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	COMPENSATING FOR DISRUPTIONS IN BREATHING GAS FLOW MEASUREMENT	16/598786	10-Oct-2019	11291764	5-Apr-2022	28-Sept-2037	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED

Schedule III

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	MRI COMPATIBLE THERAPEUTIC GAS INJECTOR MODULE	29/544067	30-Oct-2015	D776278	10-Jan-2017	10-Jan-2032	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	MRI COMPATIBLE THERAPEUTIC GAS INJECTOR MODULE	29/578294	20-Sep-2016	D797935	19-Sep-2017	30-Oct-2035	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	MRI COMPATIBLE THERAPEUTIC GAS INJECTOR MODULE	29/614133	16-Aug-2017	D823472	17-Jul-2018	30-Oct-2035	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	Methylphenidate HCl Oral Solution	10/554133	20-Oct-2005	7691880	06-Apr-2010	07-Oct-2024	Granted	SPECGX LLC
United States of America	DYE-AZIDE COMPOSITIONS FOR DUAL PHOTOTHERAPY	11/931683	31-Oct-2007	8658433	25-Feb-2014	02-Aug-2023	Granted	SPECGX LLC
United States of America	METHOD OF PURIFYING CRUDE NOSCAPINE	12/586850	29-Sep-2009	8394814	12-Mar-2013	18-Sep-2031	Granted	SPECGX LLC
United States of America	PROCESS FOR THE PREPARATION OF 6-BETA-HYDROXY MORPHINAN COMPOUNDS	12/485200	16-Jun-2009	8168790	01-May-2012	23-Jul-2030	Granted	SPECGX LLC
United States of America	DIAZA HETEROCYCLIC COMPOUNDS FOR PHOTOTHERAPY	13/319771	10-Nov-2011	9186349	17-Nov-2015	05-Jun-2030	Granted	MALLINCKRODT LLC
United States of America	PROCESSES FOR THE SYNTHESIS OF FIVE AND SIX MEMBERED HETEROCYCLIC RINGS	12/558646	14-Sep-2009	8252928	28-Aug-2012	26-Nov-2030	Granted	SPECGX LLC
United States of America	PROCESSES FOR THE SELECTIVE AMINATION OF KETOMORPHINANS	12/586844	29-Sep-2009	8269006	18-Sep-2012	19-Dec-2030	Granted	SPECGX LLC

Schedule III

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	BERBERINE COMPOUNDS AND PROCESSES FOR THE PREPARATION OF BERBERINE COMPOUNDS	12/586834	29-Sep-2009	8163912	24-Apr-2012	18-Dec-2030	Granted	SPECGX LLC
United States of America	PROCESSES FOR THE ALKYLATION OF NORBUPRENORPHINE WITH REDUCED IMPURITY FORMATION	12/586854	29-Sep-2009	8293906	23-Oct-2012	11-Jan-2031	Granted	SPECGX LLC
United States of America	PROCESSES FOR THE SYNTHESIS OF TERTIARY AMINES	12/586843	29-Sep-2009	8080661	20-Dec-2011	24-Aug-2030	Granted	SPECGX LLC
United States of America	PROCESS FOR THE PREPARATION OF BUPRENORPHINE AND DERIVATIVES OF BUPRENORPHINE	12/316861	17-Dec-2008	8017777	13-Sep-2011	07-Jun-2030	Granted	SPECGX LLC
United States of America	PROCESS AND COMPOUNDS FOR THE PRODUCTION OF (+) OPIATES	12/316862	17-Dec-2008	8252808	28-Aug-2012	12-Dec-2030	Granted	SPECGX LLC
United States of America	SINOMENINE DERIVATIVES AND PROCESSES FOR THEIR SYNTHESIS	12/316846	17-Dec-2008	8461337	11-Jun-2013	02-Dec-2030	Granted	SPECGX LLC
United States of America	SINOMENINE DERIVATIVES AND PROCESSES FOR THEIR SYNTHESIS	13/352668	18-Jan-2012	8614224	24-Dec-2013	17-Dec-2028	Granted	SPECGX LLC
United States of America	PROCESSES FOR THE PRODUCTION OF (+)-"NAL" MORPHINAN COMPOUNDS	12/316974	17-Dec-2008	8067596	29-Nov-2011	31-Mar-2030	Granted	SPECGX LLC

Schedule III

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	PROCESSES FOR THE PREPARATION OF NORMORPHINAN SALTS	12/316887	17-Dec-2008	8101757	24-Jan-2012	26-Jul-2030	Granted	SPECGX LLC
United States of America	COMPOUNDS AND COMPOSITIONS FOR USE IN PHOTOTHERAPY AND IN TREATMENT OF OCULAR NEOVASCULAR DISEASE AND CANCERS	13/383243	10-Jan-2012	8829020	09-Sep-2014	16-Jul-2030	Granted	SPECGX LLC
United States of America	COMPOUNDS AND COMPOSITIONS FOR USE IN PHOTOTHERAPY AND IN TREATMENT OF OCULAR NEOVASCULAR DISEASE AND CANCERS	14/316415	26-Jun-2014	9518062	13-Dec-2016	16-Jul-2030	Granted	SPECGX LLC
United States of America	COMPOUNDS AND COMPOSITIONS FOR USE IN PHOTOTHERAPY AND IN TREATMENT OF OCULAR NEOVASCULAR DISEASE AND CANCERS	14/316443	26-Jun-2014	9527858	27-Dec-2016	16-Jul-2030	Granted	SPECGX LLC
United States of America	PROCESSES FOR THE SYNTHESIS OF OPIATE ALKALOIDS WITH REDUCED IMPURITY FORMATION	12/586841	29-Sep-2009	8232396	31-Jul-2012	18-Dec-2030	Granted	SPECGX LLC

Schedule III

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	PROCESSES FOR THE PRODUCTION OF BUPRENORPHINE WITH REDUCED IMPURITY FORMATION	12/586855	29-Sep-2009	8232397	31-Jul-2012	01-Jan-2031	Granted	SPECGX LLC
United States of America	SYNTHESIS OF METHYLPHENIDATE AND ANALOGS THEREOF	12/652894	06-Jan-2010	8283472	09-Oct-2012	23-Jun-2031	Granted	SPECGX LLC
United States of America	(+)-MORPHINANUM N-OXIDES AND PROCESSES FOR THEIR PRODUCTION	12/710383	23-Feb-2010	8563727	22-Oct-2013	09-Sep-2031	Granted	SPECGX LLC
United States of America	(+)-MORPHINANUM QUATERNARY SALTS AND PROCESSES FOR THEIR PRODUCTION	12/710379	23-Feb-2010	8436174	07-May-2013	21-Mar-2031	Granted	SPECGX LLC
United States of America	PROCESSES FOR INCREASING THE YIELD OF OPIATE ALKALOID DERIVATIVES	12/586842	29-Sep-2009	8227608	24-Jul-2012	18-Dec-2030	Granted	SPECGX LLC
United States of America	SOLID SUPPORT FOR FMOC-SOLID PHASE SYNTHESIS OF PEPTIDE ACIDS	12/773324	04-May-2010	8742028	03-Jun-2014	05-Jul-2032	Granted	SPECGX LLC
United States of America	(+)-6-HYDROXY-MORPHINAN OR (+)-6-AMINO-MORPHINAN DERIVATIVES	12/710390	23-Feb-2010	8563724	22-Oct-2013	29-Sep-2031	Granted	SPECGX LLC

Schedule III

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	PREPARATION OF SATURATED KETONE MORPHINAN COMPOUNDS BY CATALYTIC ISOMERIZATION	12/757064	09-Apr-2010	8293907	23-Oct-2012	10-Dec-2030	Granted	SPECGX LLC
United States of America	(+)-6-HYDROXY-MORPHINAN OR (+)-6-AMINO-MORPHINAN DERIVATIVES	14/045009	03-Oct-2013	8946419	03-Feb-2015	23-Feb-2030	Granted	SPECGX LLC
United States of America	PROCESS FOR THE REDUCTIVE ALKYLATION OF NORMORPHINANS	12/706909	17-Feb-2010	8431701	30-Apr-2013	20-Mar-2031	Granted	SPECGX LLC
United States of America	ONE-POT PREPARATION OF HEXAHYDROISOQUINOLINES FROM AMIDES	12/889484	24-Sep-2010	8431705	30-Apr-2013	14-Apr-2031	Granted	SPECGX LLC
United States of America	ONE-POT PREPARATION OF HEXAHYDROISOQUINOLINES FROM AMIDES	13/749805	25-Jan-2013	8921561	30-Dec-2014	04-Oct-2030	Granted	SPECGX LLC
United States of America	ONE-POT PREPARATION OF HEXAHYDROISOQUINOLINES FROM DIHYDROISOQUINOLINE	12/889502	24-Sep-2010	8415474	09-Apr-2013	13-Apr-2031	Granted	SPECGX LLC
United States of America	METHODS FOR PRODUCING HYDROCODONE, HYDROMORPHONE OR A DERIVATIVE THEREOF	12/885851	20-Sep-2010	8399671	19-Mar-2013	11-May-2031	Granted	SPECGX LLC

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	PREPARATION OF SATURATED KETONE MORPHINAN COMPOUNDS	12/757098	09-Apr-2010	9040705	26-May-2015	26-Nov-2031	Granted	SPECGX LLC
United States of America	HETEROGENEOUS RUTHENIUM METAL CATALYST FOR THE PRODUCTION OF HYDROCODONE, HYDROMORPHONE OR A DERIVATIVE THEREOF	12/886621	21-Sep-2010	8383815	26-Feb-2013	11-May-2031	Granted	SPECGX LLC
United States of America	REDUCTIVE AMINATION OF 6-KETO NORMORPHONES BY CATALYTIC HYDROGEN TRANSFER	12/797640	10-Jun-2010	8471023	25-Jun-2013	23-Apr-2031	Granted	SPECGX LLC
United States of America	PREPARATION OF 10-KETO MORPHINANS BY BENZYLIC OXIDATION	12/876284	07-Sep-2010	8314237	20-Nov-2012	01-Apr-2031	Granted	SPECGX LLC
United States of America	METHOD FOR THE ENRICHMENT OF BUPRENORPHINE USING CHROMATOGRAPHIC TECHNIQUES	12/818230	18-Jun-2010	8492547	23-Jul-2013	11-May-2031	Granted	SPECGX LLC
United States of America	PREPARATION OF 6-ALPHA-AMINO N-SUBSTITUTED MORPHINANS BY CATALYTIC HYDROGEN TRANSFER	12/797642	10-Jun-2010	8519133	27-Aug-2013	08-Apr-2031	Granted	SPECGX LLC

Schedule III

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	N-DEMETHYLATION OF 6-KETO MORPHINANS	13/196929	03-Aug-2011	8624030	07-Jan-2014	25-Apr-2032	Granted	SPECGX LLC
United States of America	PHARMACEUTICAL PRODUCT BLISTER PACK LOCKABLE WITHIN SECONDARY PACKAGING	13/215864	23-Aug-2011	8991606	31-Mar-2015	11-Nov-2031	Granted	SPECGX LLC
United States of America	REDUCTIVE AMINATION OF 6-KETO MORPHINANS BY CATALYTIC HYDROGEN TRANSFER	13/491676	08-Jun-2012	9296699	29-Mar-2016	08-Apr-2031	Granted	SPECGX LLC
United States of America	TANDEM PROCESS FOR PREPARING N-ALKYL MORPHINANS	13/196921	03-Aug-2011	8703949	22-Apr-2014	14-Feb-2032	Granted	SPECGX LLC
United States of America	PEN-TYPE PHARMACEUTICAL PRODUCT DISPENSER	13/103234	09-May-2011	9016516	28-Apr-2015	04-Jul-2031	Granted	SPECGX LLC
United States of America	METHOD AND APPARATUS FOR DISPOSAL OF A PHARMACEUTICAL PRODUCT BLISTER CARD	14/336357	21-Jul-2014				Published	SPECGX LLC
United States of America	SEALABLE SECONDARY PACKAGING FOR PHARMACEUTICAL PRODUCT BLISTER PACK	13/103247	09-May-2011	8342331	01-Jan-2013	09-May-2031	Granted	SPECGX LLC

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	SEALABLE SECONDARY PACKAGING FOR PHARMACEUTICAL PRODUCT BLISTER PACK	13/691766	01-Dec-2012	8627957	14-Jan-2014	09-May-2031	Granted	SPECGX LLC
United States of America	SEALABLE SECONDARY PACKAGING FOR PHARMACEUTICAL PRODUCT BLISTER PACK	14/092559	27-Nov-2013	9120607	01-Sep-2015	09-May-2031	Granted	SPECGX LLC
United States of America	SEALABLE SECONDARY PACKAGING FOR PHARMACEUTICAL PRODUCT BLISTER PACK	14/716269	19-May-2015	9579252	28-Feb-2017	09-May-2031	Granted	SPECGX LLC
United States of America	(+)-MORPHINANS AS ANTAGONISTS OF TOLL-LIKE RECEPTOR 9 AND THERAPEUTIC USES THEREOF	14/814580	31-Jul-2015	10363251	30-Jul-2019	09-May-2029	Granted	MALLINCKRODT LLC
United States of America	(+)-MORPHINAN COMPOUNDS AS SMALL MOLECULE ANTAGONISTS OF TOLL-LIKE RECEPTOR 9	15/255979	02-Sep-2016	10604488	31-Mar-2020	09-May-2029	Granted	MALLINCKRODT LLC
United States of America	DISPOSABLE TRANSDERMAL PATCH PACKAGING	13/014876	27-Jan-2011	8925727	06-Jan-2015	12-Apr-2033	Granted	SPECGX LLC
United States of America	PROCESS FOR THE PREPARATION OF SUFENTANIL BASE AND RELATED COMPOUNDS	13/233227	15-Sep-2011	8946433	03-Feb-2015	22-Apr-2032	Granted	SPECGX LLC

Schedule III

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	(+) - MORPHINANS AS ANTAGONISTS OF TOLL-LIKE RECEPTOR 9 AND THERAPEUTIC USES THEREOF	12/975407	22-Dec-2010	9562014	07-Feb-2017	09-May-2029	Granted	MALLINCKRODT LLC
United States of America	CONTAINER AND METHOD FOR FACILITATING DISPOSAL OF UNUSED PHARMACEUTICAL PRODUCT	13/015490	27-Jan-2011	8490795	23-Jul-2013	21-Feb-2031	Granted	SPECGX LLC
United States of America	CONTAINER AND METHOD FOR FACILITATING DISPOSAL OF UNUSED PHARMACEUTICAL PRODUCT	13/925680	24-Jun-2013	9005098	14-Apr-2015	27-Jan-2031	Granted	SPECGX LLC
United States of America	PHARMACEUTICAL PRODUCT CONTAINER WITH PERMANENT LOCKING MECHANISM	14/488048	16-Sep-2014	9414989	16-Aug-2016	07-Sep-2031	Granted	SPECGX LLC
United States of America	APPARATUSES AND METHODS FOR STORING PHARMACEUTICAL PRODUCT	13/014896	27-Jan-2011	8910456	16-Dec-2014	21-Sep-2033	Granted	SPECGX LLC
United States of America	SYSTEMS AND METHODS FOR MANAGING USE OF A MEDICAMENT	13/015480	27-Jan-2011	9046403	02-Jun-2015	27-Jan-2031	Granted	SPECGX LLC
United States of America	SYSTEMS AND METHOD FOR TIMING DOSAGE PERIODS	13/015223	27-Jan-2011	8842501	23-Sep-2014	27-Jan-2031	Granted	SPECGX LLC

Schedule III

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	PREPARATION OF SATURATED KETONE MORPHINAN COMPOUNDS HAVING LOW METAL CONTENT	13/093892	26-Apr-2011	8563725	22-Oct-2013	13-Feb-2032	Granted	SPECGX LLC
United States of America	PRODUCTION OF ALKALOIDS WITHOUT THE ISOLATION OF INTERMEDIATES	13/606370	07-Sep-2012	8624031	07-Jan-2014	07-Sep-2032	Granted	SPECGX LLC
United States of America	METHOD FOR TREATING ABDOMINAL DISCOMFORT	10/745689	29-Dec-2003	7795312	14-Sep-2010	29-Dec-2023	Granted	SUCAMPO PHARMA AMERICAS LLC
United States of America	ENTERIC COATED COMPOSITION COMPRISING PROSTAGLANDIN ANALOGS AS CHLORIDE CHANNEL OPENER	10/562637	01-Jun-2006	8337891	25-Dec-2012	05-Jul-2024	Granted	SUCAMPO PHARMA AMERICAS LLC
United States of America	CHLORIDE CHANNEL OPENER	10/231341	30-Aug-2002	7064148	20-Jun-2006	30-Aug-2022	Granted	SUCAMPO PHARMA AMERICAS LLC
United States of America	CHLORIDE CHANNEL OPENER	11/333511	18-Jan-2006	7253295	07-Aug-2007	30-Aug-2022	Granted	SUCAMPO PHARMA AMERICAS LLC
United States of America	TOCOPHEROL AND TOCOPHERYL QUINONE DERIVATIVES AS CORRECTORS OF LYSOSOMAL STORAGE DISORDERS	15/608753	30-May-2017	10370348	06-Aug-2019	14-Nov-2033	Granted	VTESSE LLC

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	TOCOPHEROL AND TOCOPHERYL QUINONE DERIVATIVES AS CORRECTORS OF LYSOSOMAL STORAGE DISORDERS	14/442637	13-May-2015	9663485	30-May-2017	14-Nov-2033	Granted	VTESSE LLC
United States of America	USE OF DELTA TOCOPHEROL FOR THE TREATMENT OF LYSOSOMAL STORAGE DISORDERS	13/810774	17-Jan-2013	9044451	02-Jun-2015	26-Sep-2031	Granted	VTESSE LLC
United States of America	USE OF DELTA TOCOPHEROL FOR THE TREATMENT OF LYSOSOMAL STORAGE DISORDERS	15/239753	17-Aug-2016	10039741	07-Aug-2018	26-Sep-2031	Granted	VTESSE LLC
United States of America	ANTI-CONSTIPATION COMPOSITION	09/655760	05-Sep-2000	6414016	02-Jul-2002	05-Sep-2020	Granted	SUCAMPO PHARMA AMERICAS LLC
United States of America	ANTI-CONSTIPATION COMPOSITION	11/142251	02-Jun-2005	8071613	06-Dec-2011	05-Sep-2020	Granted	SUCAMPO PHARMA AMERICAS LLC
United States of America	ANTI-CONSTIPATION COMPOSITION	13/274612	17-Oct-2011	8114890	14-Feb-2012	05-Sep-2020	Granted	SUCAMPO PHARMA AMERICAS LLC
United States of America	ANTI-CONSTIPATION COMPOSITION	13/337488	27-Dec-2011	8748454	10-Jun-2014	05-Sep-2020	Granted	SUCAMPO PHARMA AMERICAS LLC
United States of America	CYCLODEXTRIN FOR THE TREATMENT OF LYSOSOMAL STORAGE DISEASES	15/620753	12-Jun-2017	11020422	01-Jun-2021	19-Jun-2031	Granted	VTESSE LLC
United States of America	ABUSE DETERRENT IMMEDIATE RELEASE CAPSULE DOSAGE FORMS	16/574699	18-Sep-2019				Published	SPECGX LLC

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	NOVEL COMPOSITION AND METHOD FOR STABILIZING THE SAME	09/688351	16-Oct-2000	6583174	24-Jun-2003	16-Oct-2020	Granted	SUCAMPO PHARMA AMERICAS LLC
United States of America	NOVEL COMPOSITION AND METHOD FOR STABILIZING THE SAME	10/383581	10-Mar-2003	7417067	26-Aug-2008	16-Oct-2020	Granted	SUCAMPO PHARMA AMERICAS LLC
United States of America	NOVEL COMPOSITION AND METHOD FOR STABILIZING THE SAME	12/144000	23-Jun-2008	8088934	03-Jan-2012	18-May-2021	Granted	SUCAMPO PHARMA AMERICAS LLC
United States of America	NOVEL COMPOSITION AND METHOD FOR STABILIZING THE SAME	13/289386	04-Nov-2011	8097649	17-Jan-2012	16-Oct-2020	Granted	SUCAMPO PHARMA AMERICAS LLC
United States of America	COMPOSITION FOR TREATING DRUG-INDUCED CONSTIPATION WITH 15-KETO-PROSTAGLANDINS	10/135397	01-May-2002	6982283	03-Jan-2006	01-May-2022	Granted	SUCAMPO PHARMA AMERICAS LLC
United States of America	DOSAGE UNIT COMPRISING A PROSTAGLANDIN ANALOG FOR TREATING CONSTIPATION	10/293516	14-Nov-2002	8097653	17-Jan-2012	14-Nov-2022	Granted	SUCAMPO PHARMA AMERICAS LLC
United States of America	DOSAGE UNIT COMPRISING A PROSTAGLANDIN ANALOG FOR TREATING CONSTIPATION	13/330942	20-Dec-2011	8389542	05-Mar-2013	14-Nov-2022	Granted	SUCAMPO PHARMA AMERICAS LLC

Schedule III

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	METHOD FOR PROVIDING A CATHARTIC EFFECT	10/147980	20-May-2002	6959056	18-Oct-2005	20-May-2022	Granted	SUCAMPO PHARMA AMERICAS LLC
United States of America	METHOD FOR PROVIDING A CATHARTIC EFFECT	11/190842	28-Jul-2005	7459583	02-Dec-2008	20-May-2022	Granted	SUCAMPO PHARMA AMERICAS LLC
United States of America	COMPOSITIONS COMPRISING ORNITHINE AND PHENYLACETATE OR PHENYLBUTYRATE FOR TREATING HEPATIC ENCEPHALOPATHY	13/495966	13-Jun-2012	9566257	14-Feb-2017	28-Nov-2025	Granted	OCERA THERAPEUTICS, INC.
United States of America	COMPOSITIONS COMPRISING ORNITHINE AND PHENYLACETATE OR PHENYLBUTYRATE FOR TREATING HEPATIC ENCEPHALOPATHY	15/430233	10-Feb-2017	10610506	07-Apr-2020	25-Nov-2025	Granted	OCERA THERAPEUTICS, INC.
United States of America	L-ORNITHINE PHENYL ACETATE AND METHODS OF MAKING THEREOF	12/753763	02-Apr-2010	8173706	08-May-2012	01-Jan-2031	Granted	OCERA THERAPEUTICS, INC.
United States of America	L-ORNITHINE PHENYL ACETATE AND METHODS OF MAKING THEREOF	13/436642	30-Mar-2012	8492439	23-Jul-2013	02-Apr-2030	Granted	OCERA THERAPEUTICS, INC.
United States of America	L-ORNITHINE PHENYL ACETATE AND METHODS OF MAKING THEREOF	13/937107	08-Jul-2013	8785498	22-Jul-2014	02-Apr-2030	Granted	OCERA THERAPEUTICS, INC.

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	L-ORNITHINE PHENYL ACETATE AND METHODS OF MAKING THEREOF	14/299940	09-Jun-2014	9034925	19-May-2015	02-Apr-2030	Granted	OCERA THERAPEUTICS, INC.
United States of America	L-ORNITHINE PHENYL ACETATE AND METHODS OF MAKING THEREOF	14/715481	18-May-2015	9604909	28-Mar-2017	02-Apr-2030	Granted	OCERA THERAPEUTICS, INC.
United States of America	L-ORNITHINE PHENYL ACETATE AND METHODS OF MAKING THEREOF	15/469359	24-Mar-2017	10173964	08-Jan-2019	02-Apr-2030	Granted	OCERA THERAPEUTICS, INC.
United States of America	L-ORNITHINE PHENYL ACETATE AND METHODS OF MAKING THEREOF	16/037655	17-Jul-2018	10550069	04-Feb-2020	02-Apr-2030	Granted	OCERA THERAPEUTICS, INC.
United States of America	TREATMENT OF PORTAL HYPERTENSION AND RESTORATION OF LIVER FUNCTION USING L-ORNITHINE PHENYLACETATE	15/817847	20-Nov-2017	11266620	08-Mar-2022	08-Jun-2030	Granted	OCERA THERAPEUTICS, INC.
United States of America	METHODS OF MAKING L-ORNITHINE PHENYL ACETATE	13/878146	05-Apr-2013	8946473	03-Feb-2015	18-Jan-2032	Granted	OCERA THERAPEUTICS, INC.
United States of America	TREATMENT OF DISEASES ASSOCIATED WITH HEPATIC STELLATE CELL ACTIVATION USING AMMONIA-LOWERING THERAPIES	16/026403	03-Jul-2018	10525029	07-Jan-2020	23-Nov-2035	Granted	OCERA THERAPEUTICS, INC.

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	TREATMENT OF DISEASES ASSOCIATED WITH HEPATIC STELLATE CELL ACTIVATION USING AMMONIA-LOWERING THERAPIES	15/527999	18-May-2017	10039735	07-Aug-2018	23-Nov-2035	Granted	OCERA THERAPEUTICS, INC.
United States of America	METHODS OF MAKING L-ORNITHINE PHENYL ACETATE	14/601591	21-Jan-2015	9260379	16-Feb-2016	05-Oct-2031	Granted	OCERA THERAPEUTICS, INC.
United States of America	TREATMENT AND PREVENTION OF MUSCLE LOSS USING L-ORNITHINE IN COMBINATION WITH AT LEAST ONE OF PHENYLACETATE AND PHENYLBUTYRATE	15/750009	02-Feb-2018	10835506	17-Nov-2020	16-Aug-2036	Granted	OCERA THERAPEUTICS, INC.
United States of America	PROCESSES OF MAKING L-ORNITHINE PHENYLACETATE	16/611193	05-Nov-2019	11066352	20-Jul-2021	07-May-2038	Granted	OCERA THERAPEUTICS, INC.
United States of America	TREATMENT AND PREVENTION OF NEURONAL CELL LOSS USING L-ORNITHINE IN COMBINATION WITH AT LEAST ONE OF PHENYLACETATE AND PHENYLBUTYRATE	15/751442	08-Feb-2018				Published	OCERA THERAPEUTICS, INC.
United States of America	FORMULATIONS OF L-ORNITHINE PHENYLACETATE	15/349910	11-Nov-2016	11219611	11-Jan-2022	19-Apr-2036	Granted	OCERA THERAPEUTICS, INC.

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	METHODS OF ASSESSING AND TREATING HEPATIC ENCEPHALOPATHY	17/605699	22-Oct-2021				Pending	OCERA THERAPEUTICS, INC.
United States of America	Methods of Using Inhaled Nitric Oxide Gas for Treatment of Acute Respiratory Distress Syndrome in Children	17/458202	26-Aug-2021				Pending	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	USE OF APOPTOTIC CELLS EX VIVO TO GENERATE REGULATORY T CELLS	17/458206	26-Aug-2021				Published	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	PRE-FILLED MANUAL INJECTOR APPARATUS	63/238543	30-Aug-2021			30-Aug-2022	Pending	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHOD OF TREATING PATIENTS WITH HEPATORENAL SYNDROME TYPE 1	17/340765	07-Jun-2021				Published	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	ALLOGENEIC CULTURED KERATINOCYTE PRODUCTS	63/224706	22-Jul-2021			22-Jul-2022	Pending	STRATATECH CORPORATION
United States of America	ALLOGENEIC CULTURED KERATINOCYTE PRODUCTS	63/227119	29-Jul-2021			29-Jul-2022	Pending	STRATATECH CORPORATION
United States of America	SYSTEMS AND METHODS FOR HIGH HUMIDITY CURING WITHIN TABLET COATING SYSTEM	17/388957	29-Jul-2021				Published	SPECGX LLC
United States of America	GAS SENSOR MODULE	17/299171	02-Jun-2021				Published	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED

Schedule III

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	GAS DELIVERY SYSTEM	17/598058	24-Sep-2021				Pending	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHODS OF MODULATING CORTICOSTEROID RESPONSE	17/362497	29-Jun-2021				Published	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	USE AND MONITORING OF INHALED NITRIC OXIDE WITH LEFT VENTRICULAR ASSIST DEVICES	17/358738	25-Jun-2021				Published	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHODS TO IMPROVE ORGAN VIABILITY	17/360916	28-Jun-2021				Published	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHODS OF USING INHALED NITRIC OXIDE GAS FOR TREATMENT OF ACUTE RESPIRATORY DISTRESS SYNDROME	63/222092	15-Jul-2021			15-Jul-2022	Pending	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	Devices and Methods for Engaging Indexed Valve and Pressure Canister Assembly with Collar and for Linear Actuation by Plunger Assembly into Fluid Communication with Device for Regulating Drug Delivery	17/509556	25-Oct-2021				Published	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	PHARMACEUTICAL COMPOSITION COMPRISING A BI-CYCLIC COMPOUND AND METHOD FOR STABILIZING THE BI-CYCLIC COMPOUND	11/656513	23-Jan-2007	7985770	26-Jul-2011	23-Jan-2027	Granted	SUCAMPO PHARMA AMERICAS LLC
United States of America	PHARMACEUTICAL COMPOSITION COMPRISING A BI-CYCLIC COMPOUND AND METHOD FOR STABILIZING THE BI-CYCLIC COMPOUND	13/161060	15-Jun-2011	8669284	11-Mar-2014	03-Aug-2027	Granted	SUCAMPO PHARMA AMERICAS LLC
United States of America	METHOD FOR PREPARING A FATTY ACID DERIVATIVE	13/538189	29-Jun-2012	9242950	26-Jan-2016	16-Apr-2033	Granted	SUCAMPO PHARMA AMERICAS LLC
United States of America	APPARATUS AND METHOD FOR DETECTING LIQUID LEVEL IN A CLEAR OR PARTIALLY CLEAR CONTAINER	16/724786	23-Dec-2019				Published	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	Systems And Methods For Delivery Of Therapeutic Gas	16/748319	21-Jan-2020				Published	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	NEW MICROPARTICLE FORMULATION OF LUBIPROTONE	16/338948	02-Apr-2019				Published	SUCAMPO PHARMA AMERICAS LLC
United States of America	METHOD FOR PREPARING 15-KETO-PROSTAGLANDIN E DERIVATIVE	11/703098	07-Feb-2007	7355064	08-Apr-2008	07-Feb-2027	Granted	SUCAMPO PHARMA AMERICAS LLC

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	METHOD FOR MANUFACTURING PROSTAGLANDIN ANALOGUE	11/193373	01-Aug-2005	7321057	22-Jan-2008	01-Aug-2025	Granted	SUCAMPO PHARMA AMERICAS LLC
United States of America	METHOD FOR PREPARING PROSTAGLANDIN DERIVATIVE	11/703138	07-Feb-2007	7812182	12-Oct-2010	07-Feb-2027	Granted	SUCAMPO PHARMA AMERICAS LLC
United States of America	METHOD FOR PREPARING PROSTAGLANDIN DERIVATIVE	12/762890	19-Apr-2010	8236969	07-Aug-2012	14-Sep-2027	Granted	SUCAMPO PHARMA AMERICAS LLC
United States of America	METHOD FOR PREPARING PROSTAGLANDIN DERIVATIVE	12/762906	19-Apr-2010	8304562	06-Nov-2012	20-Aug-2027	Granted	SUCAMPO PHARMA AMERICAS LLC
United States of America	METHOD FOR PREPARING PROSTAGLANDIN DERIVATIVE	12/762917	19-Apr-2010	8389748	05-Mar-2013	26-Jul-2027	Granted	SUCAMPO PHARMA AMERICAS LLC
United States of America	SOFT-GELATIN CAPSULE FORMULATION	11/656476	23-Jan-2007	8026393	27-Sep-2011	23-Jan-2027	Granted	SUCAMPO PHARMA AMERICAS LLC
United States of America	SOFT-GELATIN CAPSULE FORMULATION	13/210556	16-Aug-2011	8338639	25-Dec-2012	23-Jan-2027	Granted	SUCAMPO PHARMA AMERICAS LLC
United States of America	SOFT-GELATIN CAPSULE FORMULATION	13/679005	16-Nov-2012	8779187	15-Jul-2014	23-Jan-2027	Granted	SUCAMPO PHARMA AMERICAS LLC
United States of America	METHOD FOR TREATING GASTROINTESTINAL DISORDER	11/216012	01-Sep-2005	8748481	10-Jun-2014	01-Sep-2025	Granted	SUCAMPO PHARMA AMERICAS LLC

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	PHARMACEUTICAL COMBINATION OF OPIOID AND PROSTAGLANDIN COMPOUND	15/805759	07-Nov-2017	10561649	18-Feb-2020	02-Jul-2028	Granted	SUCAMPO PHARMA AMERICAS LLC
United States of America	METHOD FOR PROMOTING GASTROINTESTINAL BICARBONATE SECRETION	11/850271	05-Sep-2007	7868045	11-Jan-2011	05-Sep-2027	Granted	SUCAMPO PHARMA AMERICAS LLC
United States of America	METHOD AND COMPOSITION FOR PROMOTING GASTROINTESTINAL BICARBONATE SECRETION	12/952626	23-Nov-2010	8530519	10-Sep-2013	05-Sep-2027	Granted	SUCAMPO PHARMA AMERICAS LLC
United States of America	METHOD FOR TREATING DAMAGE INDUCED BY AN ANTI-TUMOR AGENT, TREATING MUCOSITIS AND TREATING TUMOR	12/882794	15-Sep-2001	9084815	21-Jul-2015	15-Sep-2021	Granted	SUCAMPO PHARMA AMERICAS LLC
United States of America	Methods of Administering High Concentrations of Nitric Oxide	16/785983	10-Feb-2020				Published	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	Cannula for Minimizing Dilution of Dosing During Nitric Oxide Delivery	16/785978	10-Feb-2020				Published	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHOD OF IDENTIFYING AND TREATING PREMATURE INFANTS AT RISK FOR BPD	16/803719	27-Feb-2020				Published	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED

Schedule III

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	METHODS FOR TREATING ACUTE WOUNDS AND IMPROVING OUTCOMES	62/979649	21-Feb-2020			21-Feb-2021	Pending	STRATATECH CORPORATION
United States of America	TAMPER RESISTANT FORMULATIONS FOR ORAL SOLID EXTENDED RELEASE DOSAGE FORMS	16/818528	13-Mar-2020				Published	SPECGX LLC
United States of America	INTELLIGENT GAS SOURCE MANAGEMENT	16/825840	20-Mar-2020	11285280	29-March-2022	11-May-2035	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	SYSTEMS AND METHODS FOR INTELLIGENT GAS SOURCE MANAGEMENT	16/825848	20-Mar-2020	11090454	17-Aug-2021	11-May-2035	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHOD OF TREATING PATIENTS WITH HEPATORENAL SYNDROME TYPE 1	16/828674	24-Mar-2020				Published	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHOD OF TREATING PATIENTS WITH HEPATORENAL SYNDROME TYPE 1	16/828681	24-Mar-2020				Published	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	L-ORNITHINE PHENYL ACETATE AND METHODS OF MAKING THEREOF	16/778696	31-Jan-2020	11161802	02-Nov-2021	08-Jul-2030	Granted	OCERA THERAPEUTICS, INC.
United States of America	(+)-MORPHINAN COMPOUNDS AS SMALL MOLECULE ANTAGONISTS OF TOLL-LIKE RECEPTOR 9	16/779796	03-Feb-2020	11142502	12-Oct-2021	16-Jul-2030	Granted	MALLINCKRODT LLC

Schedule III

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	SYSTEM AND METHOD OF ADMINISTERING A PHARMACEUTICAL GAS TO A PATIENT	16/779912	03-Feb-2020				Published	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	ADMINISTRATION AND MONITORING OF NITRIC OXIDE IN EX VIVO FLUIDS	16/856632	23-Apr-2020				Published	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	APPARATUS AND METHOD FOR FILTERING LIQUID PARTICLES FROM INSPIRATORY GAS FLOW OF A PATIENT BREATHING CIRCUIT AFFILIATED WITH A VENTILATOR AND/OR NITRIC OXIDE DELIVERY SYSTEM	16/864321	01-May-2020	11278696	22-Mar-2022	01-Mar-2037	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	REPOSITORY CORTICOTROPIN INJECTION EFFECTS IN PATIENTS WITH REFRACTORY SYSTEMIC LUPUS ERYTHEMATOSUS DESPITE TREATMENT WITH GLUCOCORTICOIDS	63/018894	01-May-2020			01-May-2021	Pending	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	DOSAGES AND USES OF ORNITHINE PHENYLACETATE FOR TREATING HYPERAMMONEMIA	63/034602	04-Jun-2020			04-Jun-2021	Pending	MALLINCKRODT ENTERPRISES LLC
United States of America	BIOENGINEERED HUMAN SKIN CONSTRUCT	63/024258	13-May-2020			13-May-2021	Pending	STRATATECH CORPORATION

Schedule III

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	METHODS TO INCREASE FUNCTIONAL CAPACITY AND QUALITY OF LIFE IN BRONCHITIS PATIENTS WITH NONTUBERCULOUS MYCOBACTERIA	16/875000	15-May-2020				Published	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	USES OF ORNITHINE PHENYLACETATE FOR TREATING HYPERAMMONEMIA	63/028874	22-May-2020			22-May-2021	Pending	OCERA THERAPEUTICS, INC.
United States of America	HIGH-PURITY LARGE-SCALE PREPARATION OF STANNOPORFIN	16/864510	01-May-2020	11078220	03-Aug-2021	01-May-2040	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	ABUSE DETERRENT IMMEDIATE RELEASE FORMULATIONS COMPRISING NON-CELLULOSE POLYSACCHARIDES	16/990711	11-Aug-2020				Published	SPECGX LLC
United States of America	ENGINEERED SKIN CONSTRUCT OVERLAY OF AUTOGRAFT	63/049447	08-Jul-2020			08-Jul-2021	Pending	STRATATECH CORPORATION
United States of America	DEVICES, METHODS AND SYSTEMS FOR PRIMING, SEPARATING, AND COLLECTING BLOOD COMPONENTS	16/906976	19-Jun-2020				Published	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	CANNULA FOR MINIMIZING DILUTION OF DOSING DURING NITRIC OXIDE DELIVERY	17/175779	15-Feb-2021				Published	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED

Schedule III

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	PROCESSING BLOOD	17/176013	15-Feb-2021				Published	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	REPOSITORY CORTICOTROPIN INJECTION ENHANCED REMYELINATION AFTER CUPRIZONE-INDUCED DEMYELINATION	17/420622	02-Jul-2021				Pending	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	VIALE BIOENGINEERED SKIN CONSTRUCTS	17319760	13-Mar-2021				Published	STRATATECH CORPORATION
United States of America	System and Method of Administering a Pharmaceutical Gas to a Patient	17/215686	29-Mar-2021				Published	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHODS FOR MODULATING PERICYTES	17/185586	25-Feb-2021				Pending	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	ALLOGENEIC CULTURED KERATINOCYTE PRODUCTS	63/194672	28-May-2021			28-May-2022	Pending	STRATATECH CORPORATION
United States of America	METHODS FOR PRIMING ALLOGENEIC CULTURED KERATINOCYTE COMPOSITIONS FOR TOPICAL USE	63/194687	28-May-2021			28-May-2022	Pending	STRATATECH CORPORATION
United States of America	TISSUE CONTAINER SYSTEMS	63/194682	28-May-2021			28-May-2022	Pending	STRATATECH CORPORATION

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	STRATAGRAFT SECRETES SOLUBLE FACTORS ASSOCIATED WITH REGENERATIVE WOUND HEALING	63/208309	08-Jun-2021			08-Jun-2022	Pending	STRATATECH CORPORATION
United States of America	SYSTEMS AND METHODS FOR PROVIDING A PULSE OF A THERAPEUTIC GAS WITH A DESIRED FLOW PROFILE TO MAXIMIZE THERAPEUTIC EFFECTIVENESS	17/007603	31-Aug-2020				Published	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	REPOSITORY CORTICOTROPIN INJECTION EFFECTS IN PATIENTS WITH REFRACTORY SYSTEMIC LUPUS ERYTHEMATOSUS DESPITE TREATMENT WITH GLUCOCORTICOIDS	63/079315	16-Sep-2020			16-Sep-2021	Pending	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHODS FOR MODULATING CORTICOSTEROID RESPONSE	63/083532	25-Sep-2020			25-Sep-2021	Pending	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	SYSTEMS AND METHOD FOR DELIVERY OF THERAPEUTIC GAS TO PATIENTS, IN NEED THEREOF, RECEIVING BREATHING GAS FROM A VENTILATOR THAT VARIES AT LEAST PRESSURE AND/OR FLOW USING ENHANCED THERAPEUTIC GAS (NO) FLOW MEASUREMENT	17/078821	23-Oct-2020				Published	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHOD OF TREATING PATIENTS WITH HEPATORENAL SYNDROME TYPE 1 AND LOW MEAN ARTERIAL PRESSURE	17/083409	29-Oct-2020				Published	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHOD OF TREATING PATIENTS WITH HEPATORENAL SYNDROME TYPE 1	17/104864	25-Nov-2020				Pending	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	PREPARATION OF SUFENTANIL CITRATE AND SUFENTANIL BASE	17/091109	06-Nov-2020				Published	SPECGX LLC
United States of America	HUMAN SKIN EQUIVALENTS EXPRESSING EXOGENOUS POLYPEPTIDES	17/141945	05-Jan-2021				Published	STRATATECH CORPORATION

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	DEVICE AND METHOD FOR DIFFUSING HIGH CONCENTRATION NO WITH INHALATION THERAPY GAS	17/151410	18-Jan-2021				Published	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHODS FOR TREATING ACUTE WOUNDS AND IMPROVING OUTCOMES	17/763552	24-Mar-2022				Pending	STRATATECH CORPORATION
United States of America	DOSAGES OF L-ORNITHINE PHENYLACETATE FOR TREATING HYPERAMMONEMIA	17/767009	6-April-2022				Pending	OCERA THERAPEUTICS, INC.
United States of America	SYSTEMS AND METHODS FOR INDICATING LIFETIME OF AN NO2-TO-NO REACTOR CARTRIDGE USED TO DELIVER NO FOR INHALATION THERAPY TO A PATIENT	16/696142	26-Nov-2019	11324912	10-May-2022	16-Apr.2036	Granted	MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
United States of America	METHODS OF USING MACROCYCLIC AGONISTS OF THE GHRELIN RECEPTOR FOR TREATMENT OF GASTROINTESTINAL MOTILITY DISORDERS	11/774185	6-Jul-2007	8088733	3-Jan-2012	25-Mar-2030	Granted	OCERA THERAPEUTICS, INC.
United States of America	MACROCYCLIC GHRELIN RECEPTOR MODULATORS AND METHODS OF USING THE SAME	12/028611	8-Feb-2008	9371297	21-Jun-2016	3-Jul-2032	Granted	OCERA THERAPEUTICS, INC.

Schedule III

Country	Invention Title	Appl. No.	Filing Date	Patent No.	Issue Date	Expiration Date	Status	Owner
United States of America	MACROCYCLIC ANTAGONISTS OF THE MOTILIN RECEPTOR FOR TREATMENT OF GASTROINTESTINAL DYSMOTILITY DISORDERS	12/440802	22-Dec-2009	9133235	15-Sep-2015	17-May-2030	Granted	OCERA THERAPEUTICS, INC.
United States of America	LIPOSOMAL CISPLATIN FOR CANCER THERAPY	14/208297	13-Mar-2014	10039716	7-Aug-2018	1-Jan-2036	Granted	MALLINCKRODT LLC
United States of America	MACROCYCLIC GHRELIN RECEPTOR MODULATORS AND METHODS OF USING THE SAME	15/178,303	9-Jun-2016	9949949	24-Apr-2018	8-Feb-2028	Granted	OCERA THERAPEUTICS, INC.
United States of America	FIBRINOGEN PREPARATIONS ENRICHED IN FIBRINOGEN WITH AN EXTENDED ALPHA CHAIN	15/614157	5-Jun-2017	10004787	26-Jun-2018	7-Jan-2031	Granted	MALLINCKRODT PHARMA IP TRADING UNLIMITED COMPANY
United States of America	COMBINATIONAL LIPOSOME COMPOSITIONS FOR CANCER THERAPY	15/663472	28-Jul-2017	10213385	26-Feb-2019	31-Oct-2032	Granted	MALLINCKRODT LLC
United States of America	MACROCYCLIC GHRELIN RECEPTOR MODULATORS AND METHODS OF USING THE SAME	15/938,038	28-Mar-2018	10258602	16-Apr-2019	8-Feb-2028	Issued	OCERA THERAPEUTICS, INC.
United States of America	LIPOSOMAL CISPLATIN COMPOSITIONS FOR CANCER THERAPY	16/030575	9-Jul-2018	10383823	20-Aug-2019	13-Mar-2034	Granted	MALLINCKRODT LLC

B. Trademarks Applications and Registrations

Country	Trademark	Appl. No.	Filing Date	Reg. No.	Reg. Date	Status	Owner
United States of America	ACTHAR	78/649502	13-Jun-05	3093264	16-May-06	Registered	Mallinckrodt Pharmaceuticals Ireland Limited
United States of America	ACTHAR GEL	75/445831	6-Mar-98	2255322	22-Jun-99	Registered	Mallinckrodt Pharmaceuticals Ireland Limited
United States of America	ANAFRANIL	77/305293	16-Oct-07	3507492	30-Sep-08	Registered	SpecGx LLC
United States of America	Belesala	79273317	10-Sep-19	6182097 (US)/ 1501537(IR) *	27-Oct-20	Registered	Mallinckrodt Pharmaceuticals Ireland Limited
United States of America	CELLEX	77489274	3-Jun-08	4026448	13-Sep-11	Registered	Mallinckrodt Pharmaceuticals Ireland Limited
United States of America	COLOR TEAL - HORIZONTAL STRIP	86/283,394	16-May-14	4674634	20-Jan-15	Registered	Mallinckrodt Pharmaceuticals Ireland Limited
United States of America	COLOR TEAL - CURVED STRIP	85/915,748	26-Apr-13	4570773	22-Jul-14	Registered	Mallinckrodt Pharmaceuticals Ireland Limited
United States of America	COLOR TEAL - CURVED STRIP (updated)	86/637344	21-May-15	4841528	27-Oct-15	Registered	Mallinckrodt Hospital Products IP Unlimited Company
United States of America	COLOR TEAL - TOP OF TANK AND BOTTOM WAVY STRIP	85/915,731	26-Apr-13	4536015	27-May-14	Registered	Mallinckrodt Hospital Products IP Unlimited Company
United States of America	COLOR TEAL - TOP OF TANK AND TOP & BOTTOM WAVY STRIP	86/283,412	16-May-14	4674635	20-Jan-15	Registered	Mallinckrodt Hospital Products IP Unlimited Company
United States of America	COLOR TEAL - TOP PROTECTOR/HANDLE	86/283,424	16-May-14	4706982	24-Mar-15	Registered	Mallinckrodt Hospital Products IP Unlimited Company
United States of America	DSIR	85070932	24-Jun-10	4003732	26-Jul-11	Registered	Mallinckrodt Hospital Products IP Unlimited Company

Country	Trademark	Appl. No.	Filing Date	Reg. No.	Reg. Date	Status	Owner
United States of America	EXALGO	87/542359	25-Jul-17	5406796	20-Feb-18	Registered	SpecGx LLC
United States of America	FLEXTRANET	86/062,864	12-Sep-13	4536715	27-May-14	Registered	Mallinckrodt Hospital Products IP Unlimited Company
United States of America	FLOWMOR	76386540	21-Mar-02	2672085	7-Jan-03	Registered	SpecGx LLC
United States of America	FLOWMOR (STYLIZED)	75/197784	13-Nov-96	2234829	23-Mar-99	Registered	SpecGx LLC
United States of America	H.P. ACTHAR GEL	88017262	27-Jun-18	5695589	12-Mar-19	Registered	Mallinckrodt ARD IP Unlimited Company
United States of America	INOCAL	75/124,073	24-Jun-96	2109970	28-Oct-97	Registered	Mallinckrodt Hospital Products IP Unlimited Company
United States of America	INOCAL CADDY	85791544	30-Nov-12	4389669	20-Aug-13	Registered	Mallinckrodt Hospital Products IP Unlimited Company
United States of America	INOMAX	79026770 (US)	4-Apr-06	3280185 US/IR 0893015A *	14-Aug-07	Registered	Mallinckrodt Hospital Products IP Unlimited Company
United States of America	INOMAX	75/342495	18-Aug-97	2185947	1-Sep-98	Registered	Mallinckrodt Hospital Products IP Unlimited Company
United States of America	INOMAX DSIR	85/071349	25-Jun-10	4003735	26-Jul-11	Registered	Mallinckrodt Hospital Products IP Unlimited Company
United States of America	INOMAX TOTAL CARE	85/737439	25-Sep-12	4389579	20-Aug-13	Registered	Mallinckrodt Hospital Products IP Unlimited Company
United States of America	INOPULSE	85031549	6-May-10	3893703	21-Dec-10	Registered	Mallinckrodt Hospital Products IP Unlimited Company
United States of America	INOBLENDER	79026694 (US)	4-Apr-06	3242739 US/IR 0892785A *	15-May-07	Registered	Mallinckrodt Hospital Products IP Unlimited Company
United States of America	INOTHERAPY	75751044	24-Jun-99	2678500	21-Jan-03	Registered	Mallinckrodt Hospital Products IP Unlimited Company

Schedule III

Country	Trademark	Appl. No.	Filing Date	Reg. No.	Reg. Date	Status	Owner
United States of America	INOVENT	75/124072	24-Jun-96	2100392	23-Sep-97	Registered	Mallinckrodt Hospital Products IP Unlimited Company
United States of America	Lung Device	87082377	23-Jun-16	5129069	24-Jan-17	Registered	Mallinckrodt Hospital Products IP Unlimited Company
United States of America	M in box - stylized	75/669100	26-Mar-99	2332279	21-Mar-00	Registered	Mallinckrodt LLC
United States of America	MALLINCKRODT	73525945	8-Mar-85	1410012	23-Sep-86	Registered	Mallinckrodt Brand Pharmaceuticals LLC
United States of America	MALLINCKRODT w/ Cube Logo Version 2	85646924	8-Jun-12	5036705	6-Sep-16	Registered	Mallinckrodt Brand Pharmaceuticals LLC
United States of America	MALLINCKRODT w/ Cube Logo Version 2 (in Color)	85845125	8-Feb-13	4641807	18-Nov-14	Registered	Mallinckrodt Brand Pharmaceuticals LLC
United States of America	METHADOSE	72409510	6-Dec-71	958455	8-May-73	Registered	SpecGx LLC
United States of America	NICU-PET	85836260	30-Jan-13	4410417	1-Oct-13	Registered	Mallinckrodt Pharmaceuticals Ireland Limited
United States of America	NIKS	75/928861	26-Feb-00	3312981	16-Oct-07	Registered	Stratatech Corporation
United States of America	OCERA	78968521	6-Sep-06	5438448	3-Apr-18	Registered	Ocera Therapeutics, Inc.
United States of America	PARZONE	72/002436	10-Feb-56	636736	6-Nov-56	Registered	SpecGx LLC
United States of America	RAPLIXA	79150743	2-Apr-14	4910657 US/IR 1212993 *	8-Mar-16	Registered	Legal Owner: Mallinckrodt Pharma IP Trading Unlimited Company Registered Owner: Profibrix B.V.
United States of America	RESTORIL	73/058683	25-Jul-75	1038108	20-Apr-76	Registered	SpecGx LLC

Schedule III

Country	Trademark	Appl. No.	Filing Date	Reg. No.	Reg. Date	Status	Owner
United States of America	ROXICODONE	76401917	24-Apr-02	2686302	11-Feb-03	Registered	SpecGx LLC
United States of America	S Logo (B&W)	88464907	7-Jun-19	6088591	30-Jun-20	Registered	Mallinckrodt Pharmaceuticals Ireland Limited
United States of America	S Logo (Color)	88464898	7-Jun-19	6078032	16-Jun-20	Registered	Mallinckrodt Pharmaceuticals Ireland Limited
United States of America	S Sonorant Therapeutics Logo (B & W)	88464893	7-Jun-19	6078031	16-Jun-20	Registered	Mallinckrodt Pharmaceuticals Ireland Limited
United States of America	S Sonorant Therapeutics Logo (Color)	88464881	7-Jun-19	6078030	16-Jun-20	Registered	Mallinckrodt Pharmaceuticals Ireland Limited
United States of America	Sonorant	88459416	4-Jun-19	6056868	19-May-20	Registered	Mallinckrodt Pharmaceuticals Ireland Limited
United States of America	STANATE	76/408361	15-May-02	2851513	8-Jun-04	Registered	Infacare Pharmaceutical Corporation
United States of America	STRATAGRAFT	78/540747	1-Jan-05	3395813	11-Mar-08	Registered	Stratatech Corporation
United States of America	STRATATECH	77/088429	22-Jan-07	3342834	27-Nov-07	Registered	Stratatech Corporation
United States of America	THERAKOS	77489277	3-Jun-08	4115195	20-Mar-12	Registered	Mallinckrodt Pharmaceuticals Ireland Limited
United States of America	TOFRANIL	87543724	26-Jul-17	5406873	20-Feb-18	Registered	SpecGx LLC
United States of America	UVADEX	77489275	3-Jun-08	4006506	2-Aug-11	Registered	Mallinckrodt Pharmaceuticals Ireland Limited
United States of America	UVADEX	85319332	12-May-11	4074104	20-Dec-11	Registered	Mallinckrodt Pharmaceuticals Ireland Limited
United States of America	UVAR XTS	77/948145	2-Mar-10	3949903	26-Apr-11	Registered	Mallinckrodt Pharmaceuticals Ireland Limited

Schedule III

Country	Trademark	Appl. No.	Filing Date	Reg. No.	Reg. Date	Status	Owner
United States of America	YIN-YANG DESIGN (black & white version)	86/694083	15-Jul-15	4940208	19-Apr-16	Registered	Mallinckrodt Pharmaceuticals Ireland Limited

* 66A - Madrid Protocol

C. Copyrights Applications and Registrations

<u>Title</u>	<u>Type of Work</u>	<u>Creation Year</u>	<u>Registration No.</u>	<u>Registration Date</u>	<u>Owner</u>
INOb Blender – Operation and Maintenance Manual, Rev – 01.	Book	2006	TX0007543160	March 16, 2012	INO Therapeutics LLC
INOMax DS 1 2 2	Print material (computer file)	2007	TX0007534179	February 24, 2012	INO Therapeutics LLC
INOMax DS – Operation Manual, Rev – 01.	Book	2007	TX0007541780	March 16, 2012	INO Therapeutics LLC
INOMax DS – Operation Manual, Rev – 02.	Book	2008	TX0007535586	March 16, 2012	INO Therapeutics LLC
INOMax DS 1.3.8	Print material (computer file)	2009	TX0007534181	February 24, 2012	INO Therapeutics LLC
INOMax DS – Operation Manual, Rev – 03.	Book	2009	TX0007543146	March 16, 2012	INO Therapeutics LLC
INOMax DS – Operation Manual, Rev – 04.	Book	2010	TX0007541782	March 16, 2012	INO Therapeutics LLC
INOMax DSIR – Operation Manual, Rev – 03.	Book	2010	TX0007531698	March 5, 2012	INO Therapeutics LLC
INOMax DSIR – 2.0.4	Computer code	2011	TX0007534306	February 24, 2012	INO Therapeutics LLC

<u>Title</u>	<u>Type of Work</u>	<u>Creation Year</u>	<u>Registration No.</u>	<u>Registration Date</u>	<u>Owner</u>
Sucampo Corporate Profile video	Motion Picture	2011	PAu003701666	March 18, 2011	Sucampo Pharmaceuticals LLC
Sucampo Disease State animation	Motion Picture	2011	PAu003620548	March 18, 2011	Sucampo Pharmaceuticals LLC
S Design.	Visual Material	2019	VAu001394803	September 6, 2019	Mallinckrodt Pharmaceuticals Ireland Limited

D. IP Agreements

Patent Licenses:

1. IV APAP Agreement (US and Canada), dated as of February 21, 2006, by and between Bristol-Myers Squibb Company (“BMS”) and Cadence Pharmaceuticals, Inc. (assigned to Mallinckrodt Pharmaceuticals Ireland Limited).
2. License Agreement, dated as of June 11, 2013, between Novartis Pharma AG and Novartis AG and Questcor Pharmaceuticals, Inc. and Akasia Limited.²
3. Exclusive Cross-License, Technology Transfer, and Regulatory Matters Agreement, dated February 9, 2014, between INO Therapeutics LLC and Bellerophon Pulse Technologies LLC.
4. Exclusive License Agreement by and between Stratatech Corporation and Wisconsin Alumni Research Foundation dated as of February 8, 2000, with amendments dated July 16, 2002 and August 10, 2016.
5. License Agreement between Cadence Pharmaceuticals Inc, Mallinckrodt IP, et. al., and Fresenius Kabi USA, LLC, dated August 6, 2014.
6. Settlement and License Agreement between Sucampo AG, Sucampo Pharmaceuticals, Inc., et. al, and Anchen Pharmaceuticals, Inc., Par Pharmaceutical, Inc., Par Pharmaceutical Companies, Inc., dated September 30, 2014.
7. Exclusive Patent License Agreement (NIH License Number L-057-2015/0) between the NIH and Vtesse Inc., dated December 10, 2014.

² Subject to that certain letter regarding suspension sent on July 24, 2020, by Mallinckrodt ARD LLC and Questcor International Ltd. to Novartis AG and Novartis Pharma AG.

8. Settlement and License Agreement between Sucampo AG, Sucampo Pharmaceuticals, Inc., et. al, and Dr. Reddy's Laboratories, Inc. and Dr. Reddy's Laboratories LLC, dated September 14, 2016.
9. License Agreement between Mallinckrodt Hospital Products, Inc. et. al, and Agila Specialties Inc. et. al., dated December 31, 2016.
10. License Agreement between Mallinckrodt IP, and Agila Specialties Inc. et. al., dated December 31, 2016.
11. License Agreements between Mallinckrodt IP and InnoPharma Licensing LLC, et al., each dated May 4, 2017.
12. Exclusive License and Commercialization Agreement by and between NeuroproteXeon, Inc. and Mallinckrodt Pharma IP Trading DAC, dated October 2, 2017.³
13. Second Amended and Restated License Agreement by and between UCL Business PLC and Ocera Therapeutics, Inc., dated July 1, 2015 and Amendment No. 1 to said License Agreement dated October 1, 2017.⁴
14. License Agreement between Mallinckrodt Hospital Products, Inc., Mallinckrodt IP Unlimited Company, et. al., and Aurobindo Pharma USA, Inc., dated May 16, 2018.
15. License Agreement by and between Jazz Pharmaceuticals, Inc. and Jazz Pharmaceuticals Ireland Limited and Mallinckrodt plc, MNK 2011 Inc. and Mallinckrodt LLC, dated June 4, 2018.
16. Settlement and License Agreement between Sucampo AG, Sucampo Pharmaceuticals, Inc., Sucampo Pharma LLC, et. al, and Gulzaar Health LLC, dated June 9, 2018.
17. Settlement and License Agreement between Sucampo AG, Sucampo Pharmaceuticals, Inc., Sucampo Pharma LLC, et. al, and Amneal Pharmaceuticals LLC, dated June 28, 2018.
18. Settlement and License Agreement between Sucampo AG, Sucampo Pharmaceuticals, Inc., Sucampo Pharma LLC, et. al, and Teva Pharmaceutical Industries Ltd. and Teva Pharmaceuticals USA, Inc., dated June 28, 2018.
19. License Agreements between Mallinckrodt Hospital Products, Inc., Mallinckrodt IP Unlimited Company, et. al., and B. Braun Medical Inc., each dated October 3, 2018
20. License Agreement by and between Shire Development LLC, Shire LLC and Shire US Inc. and SpecGx LLC, dated January 28, 2019.
21. License Agreements between Mallinckrodt Hospital Products Inc., et al. and Altan Pharma Ltd., each dated August 26 2019.

³ Subject to all proceedings in the bankruptcy cases of NeuroproteXeon, Inc. and its affiliated debtors.

⁴ Contract was rejected in the bankruptcy case of the Parent.

22. License and Collaboration Agreement, dated as of July 18, 2019, by and between Silence Therapeutics PLC and Mallinckrodt Pharmaceuticals Ireland Limited and Amendment No. 1 dated March 24, 2020.
23. License Agreement between Mallinckrodt Hospital Products, Inc. et. al, and Baxter Healthcare Corp. dated April 23, 2020.
24. Settlement and License Agreement between Sucampo AG, Sucampo Pharmaceuticals, Inc., Sucampo Pharma LLC, et. al, and Sun Pharmaceutical Industries, Ltd., and Sun Pharmaceutical Industries, Inc, dated June 4, 2020.
25. Settlement and License Agreement between Sucampo AG, Sucampo Pharmaceuticals, Inc., Sucampo Pharma LLC, et. al, and Zydus Pharmaceuticals (USA) Inc., dated November 5, 2020
26. Option Agreement, dated as of December 21, 2020, between Mallinckrodt Pharmaceuticals Ireland Limited and Apeptico Forschung und Entwicklung GmbH.

Trademark Licenses:

None.

Copyright Licenses:

1. International Annual Copyright License Agreement for Text and Video Rights between Mallinckrodt LLC and the Copyright Clearance Center, Inc. effective April 1, 2013.
2. International Annual Copyright License Agreement for Text and Video Rights between ST Shared Services LLC and the Copyright Clearance Center, Inc. effective October 1, 2019.

Commercial Tort Claims

None.

Additional Swiss Provisions

“Swiss Up-stream and Cross-stream Limitation and Withholding Tax.

(a) If and to the extent that the Liens and security interests granted by the Swiss Grantor under this Agreement secures obligations other than obligations of one of its direct or indirect subsidiaries (i.e. obligations of direct or indirect parent company of the Swiss Grantor (up-stream liabilities) or sister company (cross-stream liabilities)) (the “Restricted Obligations”) and that using the proceeds from the exercise of remedies hereunder of such Liens and security interests would under Swiss corporate law not be permitted at such time (i.e. to the extent that complying with the Restricted Obligations would constitute a repayment of capital of the Swiss Grantor, a violation of the legally protected reserves of the Swiss Grantor or would otherwise be restricted under Swiss corporate law then applicable), then the proceeds from the Enforcement of such Liens and security interests to be applied towards discharging Restricted Obligations shall from time to time be limited to the amount permitted to be applied under Swiss corporate law; provided that such limited amount shall at no time be less than the freely distributable capital of the Swiss Grantor (presently being the balance sheet profits and any reserves, including, without limitation, *Kapitaleinlagereserven*, available for distribution as dividends to the shareholders of the Swiss Grantor) at the time or times of Enforcement of the Liens and security interests for Restricted Obligations, and further provided that such limitation (as may apply from time to time or not) shall not (generally or definitively) affect the Liens and security interests granted by the Swiss Grantor under this Agreement in excess thereof, but merely postpone the time of using such proceeds from Enforcement of the Liens and security interests until such times as application towards discharging the Restricted Obligations is again permitted notwithstanding such limitation.

(b) In case, the Swiss Grantor must make a payment in respect of Restricted Obligations under this Agreement is obliged to withhold Swiss withholding tax in respect of such payment, the Swiss Grantor shall:

(i) procure that such payments can be made without deduction of Swiss withholding tax, or with deduction of Swiss withholding tax at a reduced rate, by discharging the liability to such tax by notification pursuant to applicable law (including double tax treaties) rather than payment of the tax;

(ii) if the notification procedure pursuant to sub-paragraph (i) above does not apply, deduct Swiss withholding tax at the rate of 35% (or such other rate as in force from time to time), or if the notification procedure pursuant to sub-paragraph (i) above applies for a part of the Swiss withholding tax only, deduct Swiss withholding tax at the reduced rate resulting after the discharge of part of such tax by notification under applicable law, from any payment made by it in respect of Restricted Obligations

and promptly pay any such taxes to the Swiss Federal Tax Administration (*Eidgenössische Steuerverwaltung*);

(iii) notify the Collateral Agent that such notification, or as the case may be, deduction has been made and provide the Collateral Agent with evidence that such a notification of the Swiss Federal Tax Administration has been made or, as the case may be, such taxes deducted have been paid to the Swiss Federal Tax Administration;

(iv) in the case of a deduction of Swiss withholding tax:

(A) use its best efforts to ensure that any person other than a Secured Party, which is entitled to a full or partial refund of the Swiss withholding tax deducted from such payment in respect of Restricted Obligations, will, as soon as possible after such deduction (A) request a refund of the Swiss withholding tax under applicable law (including tax treaties) and (B) pay to the Collateral Agent upon receipt any amounts so refunded; and

(B) if the Collateral Agent or a Secured Party is entitled to a full or partial refund of the Swiss withholding tax deducted from such payment and if requested by the Collateral Agent, provide the Collateral Agent and the Secured Parties those documents that are required by law and applicable tax treaties to be provided by the payer of such tax in order to enable the Collateral Agent and the Secured Parties to prepare a claim for refund of Swiss withholding tax.

(c) If the Swiss Grantor is obliged to withhold Swiss withholding tax in accordance with paragraph (b) above, the Collateral Agent shall be entitled to further enforce the right of the Liens and security interests and other indemnity granted by the Swiss Grantor hereunder and apply proceeds therefrom against the Restricted Obligations up to an amount which is equal to that amount which would have been obtained if no withholding of Swiss withholding tax were required, whereby such further Enforcements shall always be limited to the maximum amount of the distributable capital of the Swiss Grantor as set out in paragraph (a) above.

(d) If and to the extent requested by the Collateral Agent upon the occurrence of an Event of Default which is continuing, to the extent required under Swiss mandatory law (with regards to restricting distributions) applicable at the relevant time, in order to allow the Collateral Agent (and the other Secured Parties) to obtain a maximum benefit under this Agreement, the Swiss Grantor shall promptly implement all such measures and/or to promptly procure the fulfilment of all prerequisites allowing the prompt unlimited application of the proceeds from the Enforcement of the Liens and security interests granted under this Agreement and allowing the Swiss Grantor to promptly perform its obligations and make the (requested) payment(s) hereunder from time to time, including the following:

(i) preparation of an up-to-date audited balance sheet of the Swiss Grantor;

(ii) obtain a confirmation of the auditors of the Swiss Grantor confirming the maximum amount of the freely distributable capital;

(iii) approval by a quotaholders' meeting of the Swiss Grantor of the capital distribution;

(iv) to the extent permitted by applicable law write up or realise any of its assets that are shown in its balance sheet with a book value that is significantly lower than the market value of the assets, in case of realisation, however, only if such assets are not necessary for the Swiss Grantor's business (*nicht betriebsnotwendig*); and

(v) all such other measures absolutely necessary to allow the application of the proceeds from the Enforcement of the Liens and security interests granted by the Swiss Grantor under this Agreement and to allow the Swiss Grantor to make the payments and perform the obligations agreed hereunder with a minimum of limitations."

Form of Supplement to the U.S. Collateral Agreement

SUPPLEMENT NO. [●] (this “**Supplement**”), dated as of [●], 20[●][●] to the U.S. Collateral Agreement dated as of June 16, 2022 (as amended, restated, supplemented or otherwise modified from time to time, the “**U.S. Collateral Agreement**”), among Mallinckrodt International Finance S.A., a public limited liability company (*société anonyme*) incorporated under the laws of the Grand Duchy of Luxembourg, having its registered office at 124, boulevard de la Pétrusse, L-2330 Luxembourg, and registered with the Luxembourg Trade and Companies Register (*R.C.S. Luxembourg*) under number B 172.865 (the “**Lux Borrower**”), MALLINCKRODT CB LLC (the “**Co-Borrower**”, and together with the Lux Borrower, the “**Borrowers**”), each other Subsidiary Loan Party listed on the signature pages thereto and each other Subsidiary Loan Party that becomes a party thereto after the date thereof (together with the Lux Borrower and the Co-Borrower, collectively, the “**Pledgors**”), the Credit Agreement Agent (as defined below), the New First Lien Trustee (as defined below), the Existing First Lien Trustee (as defined below) and DEUTSCHE BANK AG NEW YORK BRANCH, as collateral agent (together with its successors and assigns in such capacity, the “**Collateral Agent**”) for the Secured Parties (as defined therein).

A. Reference is made to (i) the Credit Agreement, dated as of June 16, 2022 (as amended, restated, supplemented or otherwise modified from time to time, the “**Credit Agreement**”), among Mallinckrodt plc (the “**Parent**”), the Lux Borrower, the Co-Borrower, the Lenders party thereto from time to time, Acquiom Agency Services LLC and Seaport Loan Products LLC, as co-administrative agents and, together, the administrative agent (together with its successors and assigns in such capacity, the “**Credit Agreement Agent**”), the Collateral Agent, (ii) the Borrowers’ 11.50% First Lien Senior Secured Notes due 2028 (the “**New First Lien Notes**”) issued under the Indenture, dated as of June 16, 2022 (as amended, restated, supplemented or otherwise modified from time to time, the “**New First Lien Notes Indenture**”), among the Borrowers, Parent, the other Guarantors party thereto from time to time, Wilmington Savings Fund Society, FSB, as first lien trustee (together with its successors and assigns in such capacity, the “**New First Lien Trustee**”), and the Collateral Agent, as first lien collateral agent, and (iii) the Borrowers’ 10.000% First Lien Senior Secured Notes due 2025 (the “**Existing First Lien Notes**”) issued under the Existing First Lien Notes Indenture, dated as of April 7, 2020 (as amended, restated, supplemented or otherwise modified from time to time, the “**Existing First Lien Notes Indenture**”), among the Borrowers, Parent, the other Guarantors party thereto from time to time, Wilmington Savings Fund Society, FSB, as first lien trustee (together with its successors and assigns in such capacity, the “**Existing First Lien Trustee**”), and the Collateral Agent, as first lien collateral agent.

B. Capitalized terms used herein and not otherwise defined herein shall have the meanings assigned to such terms in the Credit Agreement, the Existing First Lien Notes Indenture, the New First Lien Notes Indenture or the U.S. Collateral Agreement, as applicable.

C. The Pledgors have entered into the U.S. Collateral Agreement pursuant to the requirements set forth in the Credit Agreement, the New First Lien Notes Indenture and the

Existing First Lien Notes Indenture. Section 5.16 of the U.S. Collateral Agreement provides that additional Subsidiary Loan Parties may become Pledgors under the U.S. Collateral Agreement by execution and delivery of an instrument in the form of this Supplement. The undersigned Subsidiary (the “*New Subsidiary*”) is executing this Supplement in accordance with the requirements of the Credit Agreement, the New First Lien Notes Indenture, the Existing First Lien Notes Indenture (and/or, if applicable, any Specified Other First Lien Agreement) to become a Pledgor under the U.S. Collateral Agreement.

Accordingly, the New Subsidiary agrees as follows:

SECTION 1. In accordance with Section 5.16 of the U.S. Collateral Agreement, the New Subsidiary by its signature below becomes a Pledgor under the U.S. Collateral Agreement with the same force and effect as if originally named therein as a Pledgor and the New Subsidiary hereby (a) agrees to all the terms and provisions of the U.S. Collateral Agreement applicable to it as a Pledgor thereunder and (b) represents and warrants that the representations and warranties made by it as a Pledgor thereunder are true and correct in all material respects on and as of the date hereof. In furtherance of the foregoing, the New Subsidiary, as security for the payment and performance in full of its Secured Obligations, does hereby create and grant to the Collateral Agent, its successors and assigns, for the benefit of the Secured Parties, their successors and assigns, a security interest in and lien on all of the New Subsidiary’s right, title and interest in and to the Collateral (as defined in the U.S. Collateral Agreement) of the New Subsidiary; *provided* that, for the avoidance of doubt, the Collateral shall not include any Excluded Property or Excluded Securities. Each reference to a “Pledgor” in the U.S. Collateral Agreement shall be deemed to include the New Subsidiary (except as otherwise provided in clause (ii) of the definition of Pledgor to the extent applicable). The U.S. Collateral Agreement is hereby incorporated herein by reference.

SECTION 2. The New Subsidiary represents and warrants to the Collateral Agent and the other Secured Parties that this Supplement has been duly authorized, executed and delivered by it and constitutes its legal, valid and binding obligation, enforceable against it in accordance with its terms, subject to (i) the effects of bankruptcy, insolvency, fraudulent conveyance or other similar laws affecting creditors’ rights generally, (ii) general principles of equity (regardless of whether such enforceability is considered in a proceeding in equity or at law) and (iii) implied covenants of good faith and fair dealing.

SECTION 3. This Supplement may be executed in counterparts (and by different parties hereto on different counterparts), each of which shall constitute an original, but all of which when taken together shall constitute a single contract. This Supplement shall become effective when the Collateral Agent shall have received a counterpart of this Supplement that bears the signature of the New Subsidiary. Delivery of an executed signature page to this Supplement by facsimile or other electronic transmission shall be as effective as delivery of a manually signed counterpart of this Supplement.

SECTION 4. The New Subsidiary hereby represents and warrants that, as of the date hereof and with respect to such New Subsidiary, (a) set forth on *Schedule I* attached hereto is a true and correct schedule of any and all of (and, with respect to any Pledged Stock issued by an issuer that is not a subsidiary of the Borrower, correctly sets forth, to the knowledge of the

New Subsidiary) the percentage of the issued and outstanding units of each class of the Equity Interests of the issuer thereof represented by the Pledged Stock and includes (i) all Equity Interests pledged hereunder and (ii) all Pledged Debt pledged hereunder in an individual principal amount in excess of \$5,000,000, in each case now owned by the New Subsidiary and required to be pledged in order to satisfy the Collateral and Guarantee Requirement (or any equivalent requirement of any Specified Other First Lien Agreement) or delivered pursuant to Section 2.02(a) and 2.02(b) of the U.S. Collateral Agreement, (b) set forth on *Schedule II* attached hereto is a list of any and all Intellectual Property now owned by the New Subsidiary consisting of material Patents and Trademarks applied for or registered with the United States Patent and Trademark Office and material Copyrights registered with the United States Copyright Office, and (c) set forth under its signature hereto is the true and correct legal name of the New Subsidiary, its jurisdiction of organization and the location of its chief executive office.

SECTION 5. Except as expressly supplemented hereby, the U.S. Collateral Agreement shall remain in full force and effect.

SECTION 6. THIS SUPPLEMENT AND ANY CLAIMS, CONTROVERSY, DISPUTE OR CAUSES OF ACTION (WHETHER IN CONTRACT OR TORT OR OTHERWISE) BASED UPON, ARISING OUT OF OR RELATING TO THIS SUPPLEMENT SHALL BE CONSTRUED IN ACCORDANCE WITH AND GOVERNED BY THE LAWS OF THE STATE OF NEW YORK.

SECTION 7. In case any one or more of the provisions contained in this Supplement should be held invalid, illegal or unenforceable in any respect, the validity, legality and enforceability of the remaining provisions contained herein and in the U.S. Collateral Agreement shall not in any way be affected or impaired thereby (it being understood that the invalidity of a particular provision in a particular jurisdiction shall not in and of itself affect the validity of such provision in any other jurisdiction). The parties hereto shall endeavor in good-faith negotiations to replace the invalid, illegal or unenforceable provisions with valid provisions the economic effect of which comes as close as possible to that of the invalid, illegal or unenforceable provisions.

SECTION 8. All communications and notices hereunder shall (except as otherwise expressly permitted by the U.S. Collateral Agreement) be in writing and given as provided in Section 5.01 of the U.S. Collateral Agreement.

SECTION 9. The New Subsidiary agrees to reimburse the Collateral Agent for its reasonable and documented out-of-pocket expenses in connection with this Supplement, including the reasonable and documented fees, other charges and disbursements of counsel for the Collateral Agent.

IN WITNESS WHEREOF, the New Subsidiary has duly executed this Supplement to the U.S. Collateral Agreement as of the day and year first above written.

[Signature Page Follows]

[NAME OF NEW SUBSIDIARY]

BY: _____

Name:

Title

Address:

Legal Name:

Jurisdiction of Formation:

Schedule I to
Supplement No. __ to the
U.S. Collateral Agreement

Pledged Stock; Pledged Debt

A. Pledged Stock

Issuer	Record Owner	Certificate No.	Number and Class	Percentage of Equity Interest Owned	Percent Pledged

B. Pledged Debt

Payee	Payor	Principal	Date of Issuance	Maturity Date

Intellectual Property

A. U.S. Federally Issued or Applied for Patents Owned by [New Subsidiary]

U.S. Patent Registrations

<u>Title</u>	<u>Patent No.</u>	<u>Issue Date</u>

U.S. Patent Applications

<u>Title</u>	<u>Application No.</u>	<u>Filing Date</u>

B. **U.S. Federally Registered Copyrights Owned by [New Subsidiary]**

U.S. Copyright Registrations

<u>Title</u>	<u>Registration No.</u>	<u>Registration Date</u>

C. U.S. Federally Registered or Applied for Trademarks Owned by [New Subsidiary]

U.S. Trademark Registrations

<u>Mark</u>	<u>Registration No.</u>	<u>Registration Date</u>

U.S. Trademark Applications

<u>Mark</u>	<u>Application No.</u>	<u>Filing Date</u>

Form of Notice of Grant of Security Interest in Intellectual Property

[FORM OF] NOTICE OF GRANT OF SECURITY INTEREST IN [COPYRIGHTS] [PATENTS] [TRADEMARKS], dated as of [DATE] (this “Agreement”), made by [●], a [●] [●] (the “Pledgor”), in favor of DEUTSCHE BANK AG NEW YORK BRANCH, as Collateral Agent (as defined below).

Reference is made to the U.S. Collateral Agreement, dated as of June 16, 2022 (as amended, restated, supplemented or otherwise modified from time to time, the “*U.S. Collateral Agreement*”), among MALLINCKRODT INTERNATIONAL FINANCE S.A., a public limited liability company (*société anonyme*) incorporated under the laws of the Grand Duchy of Luxembourg, having its registered office at 124, boulevard de la Pétrusse, L-2330 Luxembourg, and registered with the Luxembourg Trade and Companies Register (*R.C.S Luxembourg*) under number B 172.865 (the “*Issuer*”), MALLINCKRODT CB LLC, a Delaware limited liability company (the “*US Co-Issuer*”, and together with the Issuer, the “*Issuers*”), each other Guarantor listed on the signature pages thereof and each other Guarantor that becomes a party thereto after the Issue Date (together with the Issuer and the US Co-Issuer, collectively, the “*Pledgors*”), the Credit Agreement Agent (as defined therein), the New First Lien Trustee (as defined therein), the Existing First Lien Trustee (as defined therein) and DEUTSCHE BANK AG NEW YORK BRANCH, as collateral agent (together with its successors and assigns in such capacity, the “*Collateral Agent*”) for the Secured Parties (as defined therein). The parties hereto agree as follows:

SECTION 1. *Terms.* Capitalized terms used in this Agreement and not otherwise defined herein have the meanings specified in the U.S. Collateral Agreement. The rules of construction specified in Section 1.01(b) of the U.S. Collateral Agreement also apply to this Agreement.

SECTION 2. *Grant of Security Interest.* As security for the payment and performance, as applicable, in full of its Secured Obligations, the Pledgor pursuant to the U.S. Collateral Agreement did, and hereby does, assign and pledge to the Collateral Agent, its successors and permitted assigns, for the benefit of the Secured Parties, a continuing security interest in all of such Pledgor’s right, title and interest in, to and under any and all of the following assets now owned or at any time hereafter acquired by such Pledgor or in which such Pledgor now has or at any time in the future may acquire any right, title or interest (collectively, but excluding any Excluded Property, the “IP Collateral”):

[all Patents of the United States of America, including those listed on Schedule I:]

[all Copyrights of the United States of America, including those listed on Schedule I:]

[all Trademarks of the United States of America, including those listed on Schedule I;

[provided, however, that the foregoing pledge, assignment and grant of security interest will not cover any Excluded Property, including, without limitation, any “intent-to-use” trademark applications, to the extent that the grant of a security interest therein would impair the validity or enforceability of, or render void or voidable or result in the cancellation of the applicable grantor’s right, title or interest therein or in any trademark issued as a result of such application under applicable federal law.]

SECTION 3. *U.S. Collateral Agreement.* The security interests granted to the Collateral Agent herein are granted in furtherance, and not in limitation of, the security interests granted to the Collateral Agent pursuant to the U.S. Collateral Agreement. Each Pledgor hereby acknowledges and affirms that the rights and remedies of the Collateral Agent with respect to the IP Collateral are more fully set forth in the U.S. Collateral Agreement, the terms and provisions of which are hereby incorporated herein by reference as if fully set forth herein. In the event of any conflict between the terms of this Agreement and the U.S. Collateral Agreement, the terms of the U.S. Collateral Agreement shall govern.

SECTION 4. *Counterparts.* This Agreement may be executed in two or more counterparts, each of which shall constitute an original but all of which when taken together shall constitute but one contract. Delivery of an executed signature page of this Agreement by facsimile transmission or other electronic transmission (i.e., a “pdf” or “tif” or other electronic transmission pursuant to procedures approved by Collateral Agent) shall be effective as delivery of a manually executed counterpart hereof and the words “execution,” “execute,” “signed,” “signature,” and words of like import in or related to this Agreement shall be deemed to include electronic signatures, the electronic matching of assignment terms and contract formations on electronic platforms approved by us, 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 or the use of a paper based recordkeeping system, as the case may be, to the extent and as provided for in any applicable law, including the Federal Electronic Signatures in Global and National Commerce Act, the New York State Electronic Signatures and Records Act, or any other similar state laws based on the Uniform Electronic Transactions Act.

SECTION 5. *Governing Law.* **THIS AGREEMENT AND ANY CLAIMS, CONTROVERSY, DISPUTE OR CAUSES OF ACTION (WHETHER IN CONTRACT OR TORT OR OTHERWISE) BASED UPON, ARISING OUT OF OR RELATING TO THIS AGREEMENT SHALL BE CONSTRUED IN ACCORDANCE WITH AND GOVERNED BY THE LAWS OF THE STATE OF NEW YORK.**

[Signature Pages Follow]

IN WITNESS WHEREOF, the parties hereto have duly executed this Agreement as of the day and year first above written.

[Name of Pledgor]

By: _____

Name:

Title:

DEUTSCHE BANK AG NEW YORK
BRANCH,
as Collateral Agent,

By: _____
Name:
Title:

By: _____
Name:
Title:

Schedule I
to Notice of Grant of Security Interest in Patents

Patents Owned by [Name of Pledgor]

U.S. Patent Registrations

<u>Title</u>	<u>Patent No.</u>	<u>Issue Date</u>

U.S. Patent Applications

<u>Title</u>	<u>Application No.</u>	<u>Filing Date</u>

Schedule I
to Notice of Grant of Security Interest in Copyrights

Copyrights Owned by [Name of Pledgor]

U.S. Copyright Registrations

<u>Title</u>	<u>Registration No.</u>	<u>Registration Date</u>

Schedule I
to Notice of Grant of Security Interest in Trademarks

Trademarks Owned by [Name of Pledgor]

U.S. Trademark Registrations

<u>Mark</u>	<u>Registration No.</u>	<u>Registration Date</u>

U.S. Trademark Applications

<u>Mark</u>	<u>Application No.</u>	<u>Filing Date</u>

Form of Specified Other First Lien Secured Party Consent

SPECIFIED OTHER FIRST LIEN SECURED PARTY CONSENT

[Name of Authorized Representative]
[Address of Authorized Representative]

[Date]

[Name of Collateral Agent]
[Address of Collateral Agent]

The undersigned is the Authorized Representative for persons wishing to become Secured Parties (the “*New Secured Parties*”) under the U.S. Collateral Agreement, dated as of June 16, 2022 (as amended, restated, supplemented or otherwise modified from time to time, the “*U.S. Collateral Agreement*”), among Mallinckrodt International Finance S.A., a public limited liability company (*société anonyme*) incorporated under the laws of the Grand Duchy of Luxembourg, having its registered office at 124, boulevard de la Pétrusse, L-2330 Luxembourg, and registered with the Luxembourg Trade and Companies Register (*R.C.S Luxembourg*) under number B 172.865 (the “*Lux Borrower*”), Mallinckrodt CB LLC (the “*Co-Borrower*”, and together with the Lux Borrower, the “*Borrowers*”), each other Subsidiary Loan Party listed on the signature pages hereof and each other Subsidiary Loan Party that becomes a party hereto after the date hereof (together with the Lux Borrower and the Co-Borrower, collectively, the “*Pledgors*”), the Credit Agreement Agent (as defined therein), the New First Lien Trustee (as defined therein), the Existing First Lien Trustee (as defined therein) and DEUTSCHE BANK AG NEW YORK BRANCH, as collateral agent (together with its successors and assigns in such capacity, the “*Collateral Agent*”) for the Secured Parties (as defined therein). Capitalized terms used but not otherwise defined in this Specified Other First Lien Secured Party Consent have the meanings set forth in the U.S. Collateral Agreement (or, if not set forth therein, as set forth in the Credit Agreement, the New First Lien Notes Indenture or the Existing First Lien Notes Indenture, as applicable, referred to therein).

In consideration of the foregoing, the undersigned hereby:

(i) represents that it has been duly authorized by the New Secured Parties to become a party to the U.S. Collateral Agreement on behalf of the New Secured Parties under that certain [DESCRIBE OPERATIVE AGREEMENT] (the “*New Agreement*” and the obligations under the New Agreement, the “*New Secured Obligations*”) and to act as the Authorized Representative for the New Secured Parties;

(ii) acknowledges that it has received a copy of the U.S. Collateral Agreement, and the [joinder to] Permitted First Lien Intercreditor Agreement to be executed in connection with the New Secured Obligations;

(iii) appoints and authorizes the Collateral Agent (on the terms and conditions set forth in the U.S. Collateral Agreement, Article VIII of the Credit Agreement, Article XIII of the New First Lien Notes Indenture and Article XIII of the Existing First Lien Notes Indenture) to take such action as agent on its behalf and on behalf of all other Secured Parties and to exercise such powers under the U.S. Collateral Agreement and the aforementioned Permitted First Lien Intercreditor Agreement as are delegated to the Collateral Agent by the terms thereof, together with all such powers as are reasonably incidental thereto; and

(iv) accepts and acknowledges the terms of the U.S. Collateral Agreement and aforementioned Permitted First Lien Intercreditor Agreement and agrees to serve as Authorized Representative for the New Secured Parties with respect to the New Secured Obligations and agrees on its own behalf and on behalf of the New Secured Parties to be bound by the terms thereof applicable to holders of Specified Other First Lien Obligations, with all the rights and obligations of a Secured Party thereunder and bound by all the provisions thereof as fully as if it had been a Secured Party on the date of the U.S. Collateral Agreement and agrees that its address for receiving notices pursuant to the Security Documents shall be as follows:

[Address].

The Collateral Agent, by acknowledging and agreeing to this Specified Other First Lien Secured Party Consent, accepts the appointment in clause (iii) above subject to the terms set forth in the U.S. Collateral Agreement, Article VIII of the Credit Agreement, Article XIII of the New First Lien Notes Indenture and Article XIII of the Existing First Lien Notes Indenture.

THIS SPECIFIED OTHER FIRST LIEN SECURED PARTY CONSENT AND ANY CLAIMS, CONTROVERSY, DISPUTE OR CAUSES OF ACTION (WHETHER IN CONTRACT OR TORT OR OTHERWISE) BASED UPON, ARISING OUT OF OR RELATING TO THIS SPECIFIED OTHER FIRST LIEN SECURED PARTY CONSENT SHALL BE CONSTRUED IN ACCORDANCE WITH AND GOVERNED BY THE LAWS OF THE STATE OF NEW YORK.

[Signature pages follow]

IN WITNESS WHEREOF, the undersigned has caused this Specified Other First Lien Secured Party Consent to be duly executed by its authorized officer as of the date first set forth above.

[NAME OF AUTHORIZED
REPRESENTATIVE]

By: _____
Name:
Title:

Acknowledged and Agreed:

DEUTSCHE BANK TRUST COMPANY
AMERICAS,
as Collateral Agent

By: _____
Name:
Title:

By: _____
Name:
Title:

Acknowledged and Agreed:

MALLINCKRODT INTERNATIONAL
FINANCE S.A., for itself and on behalf of
the other Pledgors

By: _____

Name:

Title: