

PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	SECOND LIEN NOTICE AND CONFIRMATION OF GRANT OF SECURITY INTEREST IN PATENTS
SEQUENCE:	2

CONVEYING PARTY DATA

Name	Execution Date
SOLENIS TECHNOLOGIES, L.P.	06/26/2018

RECEIVING PARTY DATA

Name:	CREDIT SUISSE AG, CAYMAN ISLANDS BRANCH, AS COLLATERAL AGENT
Street Address:	ELEVEN MADISON AVENUE
City:	NEW YORK
State/Country:	NEW YORK
Postal Code:	10010

PROPERTY NUMBERS Total: 217

Property Type	Number
Patent Number:	8399544
Patent Number:	7854800
Patent Number:	6348132
Patent Number:	6403028
Patent Number:	7250448
Patent Number:	7507781
Patent Number:	8476391
Patent Number:	7581874
Patent Number:	7208117
Patent Number:	8962059
Patent Number:	8633278
Patent Number:	8609757
Patent Number:	7396874
Patent Number:	8822586
Patent Number:	8758567
Patent Number:	9580866
Patent Number:	9587354
Patent Number:	9011643

PATENT

Property Type	Number
Patent Number:	6379501
Patent Number:	8841469
Patent Number:	8691052
Patent Number:	9005398
Patent Number:	5942219
Patent Number:	6669853
Patent Number:	6123760
Patent Number:	6620328
Patent Number:	8163134
Patent Number:	8518216
Patent Number:	9034146
Patent Number:	7547753
Patent Number:	6613249
Patent Number:	6982062
Patent Number:	7943705
Patent Number:	6214932
Patent Number:	9267239
Patent Number:	7893115
Patent Number:	7879917
Patent Number:	9772312
Patent Number:	7048863
Patent Number:	7448859
Patent Number:	9102553
Patent Number:	7514009
Patent Number:	8147968
Patent Number:	9121137
Patent Number:	8871701
Patent Number:	8636875
Patent Number:	7998311
Patent Number:	7306702
Patent Number:	7578904
Patent Number:	6528643
Patent Number:	6624298
Patent Number:	7534324
Patent Number:	6428654
Patent Number:	6458320
Patent Number:	9719008
Patent Number:	8388806

Property Type	Number
Patent Number:	8506757
Patent Number:	7429625
Patent Number:	7932349
Patent Number:	8101710
Patent Number:	7204937
Patent Number:	7857989
Patent Number:	9568375
Patent Number:	8160305
Patent Number:	7311878
Patent Number:	9587935
Patent Number:	7166192
Patent Number:	8758562
Patent Number:	9388533
Patent Number:	6417268
Patent Number:	9663899
Patent Number:	7309590
Patent Number:	7323510
Patent Number:	7553423
Patent Number:	7811458
Patent Number:	8778646
Patent Number:	8772002
Patent Number:	9873982
Patent Number:	9580868
Patent Number:	9945076
Patent Number:	9896358
Patent Number:	8524042
Patent Number:	7744722
Patent Number:	7594430
Patent Number:	6808597
Patent Number:	6547971
Patent Number:	6667384
Patent Number:	7902312
Patent Number:	9879380
Patent Number:	9885155
Patent Number:	8604134
Patent Number:	9783933
Patent Number:	6558513
Patent Number:	9353332

Property Type	Number
Patent Number:	6951962
Patent Number:	6557348
Patent Number:	9371613
Patent Number:	9181398
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Patent Number:	7270727
Patent Number:	8632659
Patent Number:	6268414
Patent Number:	9028650
Patent Number:	8865263
Patent Number:	6068012
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Patent Number:	8747740
Patent Number:	6238632
Patent Number:	6171445
Patent Number:	6551452
Patent Number:	6337047
Patent Number:	9290642
Patent Number:	6723204
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Patent Number:	6461477
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Patent Number:	8518215

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Patent Number:	7828934
Patent Number:	8771469
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Patent Number:	8206553
Patent Number:	8932433
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Patent Number:	6846452
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Patent Number:	6280571
Patent Number:	8465581
Patent Number:	8444818
Patent Number:	8696869
Patent Number:	8900412
Patent Number:	9598819
Patent Number:	9555018
Patent Number:	7008545
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Patent Number:	7081512
Patent Number:	8420012
Patent Number:	8894816
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Patent Number:	6294645
Patent Number:	6111032
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Patent Number:	6429267
Patent Number:	6171440
Patent Number:	6736979
Patent Number:	7267778
Patent Number:	8097170
Patent Number:	8147649

Property Type	Number
Patent Number:	8608904
Patent Number:	9603362
Patent Number:	8852442
Patent Number:	7317053
Application Number:	15493773
Application Number:	13382177
Application Number:	14250459
Application Number:	14348977
Application Number:	15699464
Application Number:	15699408
Application Number:	15105352
Application Number:	14784096
Application Number:	15878155
Application Number:	14299508
Application Number:	15704583
Application Number:	15815820
Application Number:	15105315
Application Number:	15598145
Application Number:	15677370
Application Number:	15192188
Application Number:	15503283
Application Number:	15619076
Application Number:	15441303
Application Number:	14030529
Application Number:	15592868
Application Number:	15706993
Application Number:	14843411
Application Number:	14075613
Application Number:	14627618
Application Number:	15242654
Application Number:	15710042
Application Number:	15848560
Application Number:	15918079
Application Number:	15926947
Application Number:	15940659
Application Number:	15947182
Application Number:	15979084
Application Number:	15981840

Property Type	Number
Application Number:	62538859
Application Number:	62556706
Application Number:	62567524
Application Number:	62567616
Application Number:	62573871
Application Number:	62573928
Application Number:	62589261
Application Number:	62617938
Application Number:	62652788

CORRESPONDENCE DATA

Fax Number: (800)494-7512

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

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Address Line 2: COGENCY GLOBAL INC.

Address Line 4: WASHINGTON, D.C. 20005

ATTORNEY DOCKET NUMBER: F178174 PAT 2L IPSA

NAME OF SUBMITTER: SONYA JACKMAN

SIGNATURE: /Sonya Jackman/

DATE SIGNED: 07/20/2018

Total Attachments: 21

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NOTICE AND CONFIRMATION OF GRANT OF
SECURITY INTEREST IN PATENTS

NOTICE AND CONFIRMATION OF GRANT OF SECURITY INTEREST IN PATENTS (the "Agreement"), dated as of June 26, 2018, made by SOLENIS TECHNOLOGIES, L.P., a Delaware limited partnership having a principal place of business at 3 Beaver Valley Road, Wilmington, DE 19803 (the "Grantor"), in favor of CREDIT SUISSE AG, CAYMAN ISLANDS BRANCH, having a principal place of business at Eleven Madison Avenue, New York, NY 10010 (in such capacity, the "Collateral Agent"), as administrative agent for the banks and other financial institutions (collectively, the "Lenders") from time to time parties to the Second Lien Credit Agreement (as defined below) and as collateral agent for the Secured Parties (as defined in the Second Lien Credit Agreement). Unless otherwise defined herein or the context otherwise requires, terms used in this Agreement, including its preamble and recitals, have the meanings provided or provided by reference in the Second Lien Credit Agreement and the Second Lien Guarantee and Collateral Agreement (as defined below), as applicable.

WHEREAS, pursuant to that certain Second Lien Credit Agreement, dated as of the date hereof (as amended, supplemented or otherwise modified from time to time, the "Second Lien Credit Agreement"), among (x) prior to the Redomiciling Date (as defined in Subsection 1.1 of the Credit Agreement) and the execution and delivery by U.K. HoldCo III of the Redomiciling Date Joinder and Withdrawal, SOLENIS INTERNATIONAL, L.P., a Delaware limited partnership ("Solenis") and (y) on and following the Redomiciling Date, U.K. HoldCo III, a company organized under the laws of England and Wales, the Parent Borrower (as defined in the Credit Agreement), the other subsidiaries from time to time party thereto as a Borrower (together with the Parent Borrower, the "Borrowers"), the Collateral Agent and the Lenders, the Lenders have severally agreed to make the Initial Term Loans and the Initial Revolving Loans (collectively, the "Loans") to the Borrowers upon the terms and subject to the conditions set forth therein; and

WHEREAS, in connection with the Second Lien Credit Agreement, (x) prior to the Redomiciling Date, Solenis, the Parent Borrower, certain U.S. subsidiaries of Solenis from time to time party thereto and (y) on and following the Redomiciling Date, the Parent Borrower and certain U.S. subsidiaries of U.K. HoldCo III from time to time party thereto are, or are to become, parties to a Second Lien Guarantee and Collateral Agreement, dated as of the date hereof (as amended, supplemented or otherwise modified from time to time, the "Second Lien Guarantee and Collateral Agreement"), in favor of the Collateral Agent; and

WHEREAS, pursuant to the Second Lien Guarantee and Collateral Agreement, the Grantor granted to the Collateral Agent, for the benefit of the Secured Parties, a security interest in all of its Intellectual Property, including, without limitation, Patents; and

WHEREAS, the Grantor has duly authorized the execution, delivery and performance of this Agreement;

NOW THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, and in order to induce the Lenders to make the Loans and other financial accommodations to the Borrowers pursuant to the Second Lien Credit Agreement, the Grantor agrees, for the benefit of the Secured Parties, as follows:

SECTION 1. Confirmation of Grant of Security Interest. The Grantor hereby confirms that, subject to existing licenses to use the Patents granted by the Grantor, pursuant to the Second Lien Guarantee and Collateral Agreement it granted to the Collateral Agent, for the benefit of the Secured Parties, a security interest in all of the Patents of the Grantor (including, without limitation, those items listed on Schedule I hereto) and to the extent not otherwise included, all Proceeds and products of any and all of the Patents, as collateral security for the prompt and complete payment and performance when due (whether at the stated maturity, by acceleration or otherwise) of the Obligations of the Grantor, except that no security interest is or will be granted pursuant hereto in any right, title or interest of the Grantor under or in any Patent License for so long as, and to the extent that, the granting of such a security interest pursuant hereto would result in a breach, default or termination of such Patent License.

SECTION 2. Purpose. This Agreement has been executed and delivered by the Grantor for the purpose of recording the grant of security interest with the United States Patent and Trademark Office. This Agreement is expressly subject to the terms and conditions of the Second Lien Guarantee and Collateral Agreement. The Second Lien Guarantee and Collateral Agreement (and all rights and remedies of the Secured Parties thereunder) shall remain in full force and effect in accordance with its terms.

SECTION 3. Acknowledgment. The Grantor does hereby further acknowledge and affirm that the rights and remedies of the Secured Parties with respect to the security interest in the Patents are more fully set forth in the Second Lien Credit Agreement and the Second Lien Guarantee and Collateral Agreement, the terms and provisions of which (including the remedies provided for therein) are incorporated by reference herein as if fully set forth herein. In the event of a conflict between this Agreement and the Second Lien Guarantee and Collateral Agreement, the provisions of the Second Lien Guarantee and Collateral Agreement shall prevail.

SECTION 4. Counterparts. This Agreement may be executed in counterparts, each of which will be deemed an original, but all of which together constitute one and the same instrument.

* * *

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IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed and delivered by their respective officers thereunto duly authorized as of the day and year first above written.

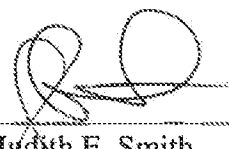
SOLENIS TECHNOLOGIES, L.P.


By: 

Name: Philip Patterson

Title: Chief Financial Officer

CREDIT SUISSE AG, CAYMAN ISLANDS
BRANCH, as Collateral Agent

By: 
Name: Judith E. Smith
Title: Authorized Signatory

By: 
Name: Lingzi Huang
Title: Authorized Signatory

SCHEDULE I

PATENTS AND PATENT APPLICATIONS

Registered Patents

<u>Grantor</u>	<u>Title</u>	<u>App. No.</u>	<u>Filing Date</u>	<u>Patent No.</u>	<u>Issue Date</u>
Solenis Technologies, L.P.	Adhesive compositions	13/020069	03-Feb-2011	8399544	19-Mar-2013
Solenis Technologies, L.P.	Alkanolamine-stabilized dispersed rosin sizing agents and their preparation	12/069377	08-Feb-2008	7854800	21-Dec-2010
Solenis Technologies, L.P.	Alkenyl succinic anhydride compositions and the use thereof	09/583129	30-May-2000	6348132	19-Feb-2002
Solenis Technologies, L.P.	All-organic corrosion inhibitor composition and uses thereof	09/419524	18-Oct-1999	6403028	11-Jun-2002
Solenis Technologies, L.P.	Anionic copolymers prepared in an inverse emulsion matrix and their use in preparing cellulosic fiber compositions	10/313632	06-Dec-2002	7250448	31-Jul-2007
Solenis Technologies, L.P.	Anionic copolymers prepared in an inverse emulsion matrix and their use in preparing cellulosic fiber compositions	11/880544	23-Jul-2007	7507781	24-Mar-2009
Solenis Technologies, L.P.	Anionic water-in-water polymer dispersion, method for the production thereof and its use	10/593293	07-Mar-2005	8476391	02-Jul-2013
Solenis Technologies, L.P.	Apparatuses and systems for monitoring fouling of aqueous systems including enhanced heat exchanger tubes	11/393943	31-Mar-2006	7581874	01-Sep-2009
Solenis Technologies, L.P.	Automated process for inhibiting corrosion in an inactive boiler containing an aqueous system	11/287876	28-Nov-2005	7208117	24-Apr-2007
Solenis Technologies, L.P.	Bio-based oil composition and method for producing the same	13/117301	27-May-2011	8962059	24-Feb-2015
Solenis Technologies, L.P.	Biomolecular inverse emulsion polymer	13/264842	09-Apr-2010	8633278	21-Jan-2014
Solenis Technologies, L.P.	Cationic cross-linked polymers in water-in-water polymer dispersions	13/399300	17-Feb-2012	8609757	17-Dec-2013

<u>Grantor</u>	<u>Title</u>	<u>App. No.</u>	<u>Filing Date</u>	<u>Patent No.</u>	<u>Issue Date</u>
Solenis Technologies, L.P.	Cationic or amphoteric copolymers prepared in an inverse emulsion matrix and their use in preparing cellulosic fiber compositions	10/728145	04-Dec-2003	7396874	08-Jul-2008
Solenis Technologies, L.P.	Cationic polymer dispersions, methods for producing said dispersions and use thereof	11/813136	30-Nov-2005	8822586	02-Sept-2014
Solenis Technologies, L.P.	Cationic wet strength resin modified pigments in barrier coating applications	12/477432	03-Jun-2009	8758567	24-Jun-2014
Solenis Technologies, L.P.	Cationic wet strength resin modified pigments in water-based latex coating applications	12/789918	28-May-2010	9580866	28-Feb-2017
Solenis Technologies, L.P.	Cationic wet strength resin modified pigments in water-based latex coating applications	14/461793	18-Aug-2014	9587354	07-Mar-2017
Solenis Technologies, L.P.	Cellulase composition containing cellulase and papermaking polymers for paper dry strength applications	14/048404	08-Oct-2013	9011643	21-Apr-2015
Solenis Technologies, L.P.	Cellulose products and processes for preparing the same	09/459891	14-Dec-1999	6379501	30-Apr-2002
Solenis Technologies, L.P.	Chemical additives and use thereof in stillage processing operations	13/370456	10-Feb-2012	8841469	23-Sep-2014
Solenis Technologies, L.P.	Clay slurries and use thereof in pulp and papermaking applications	12/381549	13-Mar-2009	8691052	08-Apr-2014
Solenis Technologies, L.P.	Composition and use of hydrogenated alkyl ketene dimers	14/060921	23-Oct-2013	9005398	14-Apr-2015
Solenis Technologies, L.P.	Composition for inhibiting microbial adhesion on surfaces	08/993085	09-Dec-1997	5942219	24-Aug-1999
Solenis Technologies, L.P.	Composition for removing dissolved oxygen from a fluid	09/927844	09-Aug-2001	6669853	30-Dec-2003
Solenis Technologies, L.P.	Compositions and methods for preparing dispersions and methods for using the dispersions	09/184458	28-Oct-1998	6123760	26-Sep-2000

<u>Grantor</u>	<u>Title</u>	<u>App. No.</u>	<u>Filing Date</u>	<u>Patent No.</u>	<u>Issue Date</u>
Solenis Technologies, L.P.	Control of barium sulfate scaling	10/117014	05-Apr-2002	6620328	16-Sep-2003
Solenis Technologies, L.P.	Copolymer blend compositions for use to increase paper filler content	12/562446	18-Sep-2009	8163134	24-Apr-2012
Solenis Technologies, L.P.	Copolymer blend compositions for use to increase paper filler content	13/293170	10-Nov-2011	8518216	27-Aug-2013
Solenis Technologies, L.P.	Copolymer blend compositions for use to increase paper filler content	13/873827	30-Apr-2013	9034146	19-May-2015
Solenis Technologies, L.P.	Copolymers for avoiding deposits in water supply systems, production and use thereof	10/517614	14-Jun-2003	7547753	16-Jun-2009
Solenis Technologies, L.P.	Corrosion inhibiting composition	10/215218	08-Aug-2002	6613249	02-Sep-2003
Solenis Technologies, L.P.	Corrosion inhibiting composition	10/624444	22-Jul-2003	6982062	03-Jan-2006
Solenis Technologies, L.P.	Creping adhesives made from amine-terminated polyamidoamines	12/016494	18-Jan-2008	7943705	17-May-2011
Solenis Technologies, L.P.	Creping adhesives obtained by the reaction of polyamide and polyvinylalcohol with epichlorohydrin	09/224113	29-Dec-1998	6214932	10-Apr-2001
Solenis Technologies, L.P.	Creping release agents	14/640654	06-Mar-2015	9267239	23-Feb-2016
Solenis Technologies, L.P.	Defoamer emulsion compositions for pulp mill applications	11/297025	08-Dec-2005	7893115	22-Feb-2011
Solenis Technologies, L.P.	Defoamers for pulp and papermaking applications	11/297024	08-Dec-2005	7879917	01-Feb-2011
Solenis Technologies, L.P.	Device and method for detecting deposits	14/367268	20-Dec-2012	9772312	26-Sept-2017
Solenis Technologies, L.P.	Device and process for treating cutting fluids using ultrasound	10/734103	10-Dec-2003	7048863	23-May-2006
Solenis Technologies, L.P.	Devices and methods for treating cooling fluids utilized in tire manufacturing	11/747079	10-May-2007	7448859	11-Nov-2008

<u>Grantor</u>	<u>Title</u>	<u>App. No.</u>	<u>Filing Date</u>	<u>Patent No.</u>	<u>Issue Date</u>
Solenis Technologies, L.P.	Devices and methods for treating fluids utilized in electrocoating processes with ultrasound	11/629758	21-Jun-2005	9102553	11-Aug-2015
Solenis Technologies, L.P.	Devices and processes for use in ultrasound treatment	11/327193	06-Jan-2006	7514009	07-Apr-2009
Solenis Technologies, L.P.	Diluents for crosslinker-containing adhesive compositions	12/287394	09-Oct-2008	8147968	03-Apr-2012
Solenis Technologies, L.P.	Dispersible articles and methods of making the same	14/255369	17-Apr-2014	9121137	1-Sep-2015
Solenis Technologies, L.P.	Emulsions for removal and prevention of deposits	13/771860	12-Aug-2011	8871701	28-Oct-2014
Solenis Technologies, L.P.	Enhanced dry strength and drainage performance by combining glyoxalated acrylamide-containing polymers with cationic aqueous dispersion polymers	13/354893	20-Jan-2012	8636875	28-Jan-2014
Solenis Technologies, L.P.	Enhanced surface sizing of paper	12/178904	24-Jul-2008	7998311	16-Aug-2011
Solenis Technologies, L.P.	Enzymatic press felt treatment	10/412512	11-Apr-2003	7306702	11-Dec-2007
Solenis Technologies, L.P.	Enzymatic press felt treatment	12/001103	10-Dec-2007	7578904	25-Aug-2009
Solenis Technologies, L.P.	Esterified polysaccharide products and b-lactone ring opened ketene dimer products containing the compositions, and process of making the same	09/564575	05-May-2000	6528643	04-Mar-2003
Solenis Technologies, L.P.	Esterified polysaccharide products and b-lactone ring opened ketene dimer products containing the compositions, and process of making the same	10/068501	06-Feb-2002	6624298	23-Sep-2003
Solenis Technologies, L.P.	Felt and equipment surface conditioner	11/472754	22-Jun-2006	7534324	19-May-2009
Solenis Technologies, L.P.	Fungicidal method	09/543733	05-Apr-2000	6428654	06-Aug-2002

<u>Grantor</u>	<u>Title</u>	<u>App. No.</u>	<u>Filing Date</u>	<u>Patent No.</u>	<u>Issue Date</u>
Solenis Technologies, L.P.	Galvanized metal corrosion inhibitor	09/287206	05-Apr-1999	6458320	01-Oct-2002
Solenis Technologies, L.P.	Gypsum scale inhibitors for ore slurry systems in hydro-metallurgical applications	14/510616	09-Oct-2014	9719008	01-Aug-2017
Solenis Technologies, L.P.	Hydrophobically modified poly (ethylene glycol) for use in pitch and stickies control in pulp and papermaking process	11/881128	25-Jul-2007	8388806	05-Mar-2013
Solenis Technologies, L.P.	Hydrophobically modified poly(aminoamines)	12/620962	18-Nov-2009	8506757	13-Aug-2013
Solenis Technologies, L.P.	Inversion of inverse emulsion polymers	11/011985	14-Dec-2004	7429625	30-Sep-2008
Solenis Technologies, L.P.	Membrane separation process for removing residuals from polyamine-epihalohydrin resins	11/856224	17-Sep-2007	7932349	26-Apr-2011
Solenis Technologies, L.P.	Membrane separation process for removing residuals from polyamine-epihalohydrin resins	13/093527	25-Apr-2011	8101710	24-Jan-2012
Solenis Technologies, L.P.	Metal oxides dispersant composition	10/340318	10-Jan-2003	7204937	17-Apr-2007
Solenis Technologies, L.P.	Metal oxides dispersant composition	11/685408	13-Mar-2007	7857989	28-Dec-2010
Solenis Technologies, L.P.	Method and apparatus for estimating fouling factor and/or inverse soluble scale thickness in heat transfer equipment	14/105323	13-Dec-2013	9568375	14-Feb-2017
Solenis Technologies, L.P.	Method and apparatus for measuring deposition of particulate contaminants in pulp and paper slurries	12/276655	24-Nov-2008	8160305	17-Apr-2012
Solenis Technologies, L.P.	Method and apparatus for producing synergistic biocide	11/509141	24-Aug-2006	7311878	25-Dec-2007
Solenis Technologies, L.P.	Method and device for detecting and analyzing deposits	14/367262	20-Dec-2012	9587935	7-Mar-2017
Solenis Technologies, L.P.	Method for controlling pitch and stickies deposition	10/444522	23-May-2003	7166192	23-Jan-2007

<u>Grantor</u>	<u>Title</u>	<u>App. No.</u>	<u>Filing Date</u>	<u>Patent No.</u>	<u>Issue Date</u>
Solenis Technologies, L.P.	Method for increasing the advantages of starch in pulped cellulosic material in the production of paper and paperboard	13/818763	25-Aug-2011	8758562	24-Jun-2014
Solenis Technologies, L.P.	Method for increasing the advantages of strength aids in the production of paper and paperboard	14/240854	24-Aug-2012	9388533	12-Jul-2016
Solenis Technologies, L.P.	Method for making hydrophobically associative polymers, methods of use and compositions	09/455024	06-Dec-1999	6417268	09-Jul-2002
Solenis Technologies, L.P.	Method for making lignocellulosic paper and paper product	14/835931	26-Aug-2015	9663899	30-May-2017
Solenis Technologies, L.P.	Method for producing an aqueous acrylamide solution with a biocatalyst	10/475100	25-Apr-2002	7309590	18-Dec-2007
Solenis Technologies, L.P.	Method for production of water-in water polymer dispersions.	10/432624	01-Dec-2001	7323510	29-Jan-2008
Solenis Technologies, L.P.	Method for treating aqueous sludge, material so produced and the use thereof	10/565236	28-May-2004	7553423	30-Jun-2009
Solenis Technologies, L.P.	Method for treating aqueous sludge, material so produced and the use thereof	12/477957	04-Jun-2009	7811458	12-Oct-2010
Solenis Technologies, L.P.	Method for treatment of microorganisms during propagation, conditioning and fermentation using hops acid extracts and organic acid	13/833522	15-Mar-2013	8778646	15-Jul-2014
Solenis Technologies, L.P.	Method for treatment of microorganisms during propagation, conditioning and fermentation using hops acid extracts and organic acid	14/212251	14-Mar-2014	8772002	08-Jul-2014
Solenis Technologies, L.P.	Method of increasing drainage performance of a pulp slurry during manufacture of paper products, and products therefrom	14/880873	12-Oct-2015	9873982	23-Jan-2018

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Solenis Technologies, L.P.	Method of making a paper and paperboard and the paper and paperboard thereof	14/641479	09-Mar-2015	9580868	28-Feb-2017
Solenis Technologies, L.P.	Method of producing a creping paper and the creping paper thereof	14/965932	11-Dec-2015	9945076	17-Apr-2018
Solenis Technologies, L.P.	Method of treating cellulose containing waste water sludge for the manufacture of linerboard and cellulosic ethanol production	15/186608	20-Jun-2016	9896358	20-Feb-2018
Solenis Technologies, L.P.	Method of treating paper forming wire surface	13/214708	22-Aug-2011	8524042	03-Sep-2013
Solenis Technologies, L.P.	Methods for creping paper	11/454360	15-Jun-2006	7744722	29-Jun-2010
Solenis Technologies, L.P.	Methods for monitoring fouling of aqueous systems including enhanced heat exchanger tubes	11/393823	31-Mar-2006	7594430	29-Sep-2009
Solenis Technologies, L.P.	Methods of making and using creping adhesives comprised of polyamine-epihalohydrin resin/poly(vinyl alcohol) mixtures	10/191952	09-Jul-2002	6808597	26-Oct-2004
Solenis Technologies, L.P.	Methods of using hop acids to control organisms	09/521222	08-Mar-2000	6547971	15-Apr-2003
Solenis Technologies, L.P.	Methyl acrylate-diamine based polyamide resins and processes for producing the same	10/032651	27-Dec-2001	6667384	23-Dec-2003
Solenis Technologies, L.P.	Michael addition adducts as additives for paper and papermaking	11/804360	18-May-2007	7902312	08-Mar-2011
Solenis Technologies, L.P.	Modified of improving dry strength and/or drainage of a paper or paperboard	15/447726	02-Mar-2017	9879380	30-Jan-2018
Solenis Technologies, L.P.	Modified vinylamine containing polymers and their use in papermaking	14/683906	10-Apr-2015	9885155	06-Feb-2018
Solenis Technologies, L.P.	Modified vinylamine-containing polymers as additives in papermaking	12/221220	31-Jul-2008	8604134	10-Dec-2013

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Solenis Technologies, L.P.	Modified vinylamine-containing polymers as additives in papermaking	15/154238	13-May-2016	9783933	10-Oct-2017
Solenis Technologies, L.P.	Non-aqueous release from paper machine equipment	09/866830	29-May-2001	6558513	06-May-2003
Solenis Technologies, L.P.	Oil extraction aids in grain processing	14/121391	29-Aug-2014	9353332	31-May-2016
Solenis Technologies, L.P.	Oil/grease- and water-sizing agent for treatment of cellulotics	10/121880	12-Apr-2002	6951962	04-Oct-2005
Solenis Technologies, L.P.	On-line removal of copper deposits on steam turbine blades	10/067090	04-Feb-2002	6557348	06-May-2003
Solenis Technologies, L.P.	Onsite emulsification of defoamer for brownstock washing of pulp	14/601368	21-Jan-2015	9371613	21-Jun-2016
Solenis Technologies, L.P.	Organopolysilicone polyether drainage aid	13/455768	25-Apr-2012	9181398	10-Nov-2015
Solenis Technologies, L.P.	Oxidation in solid state of oxidizable galactose type of alcohol configuration containing polymer	09/001789	31-Dec-1997	6124124	26-Sep-2000
Solenis Technologies, L.P.	Paper sized with a sizing agent and a selected sizing promoter	10/424502	28-Apr-2003	7270727	18-Sep-2007
Solenis Technologies, L.P.	Paper sizing composition	12/971172	17-Dec-2010	8632659	21-Jan-2014
Solenis Technologies, L.P.	Paper sizing composition	09/293051	16-Apr-1999	6268414	31-Jul-2001
Solenis Technologies, L.P.	Method of sizing paper	14/097711	05-Dec-2013	9028650	12-May-2015
Solenis Technologies, L.P.	Papermaking additives for roll release improvement	13/214472	22-Aug-2011	8865263	21-Oct-2014
Solenis Technologies, L.P.	Performance-based control system	09/221601	29-Dec-1998	6068012	30-May-2000
Solenis Technologies, L.P.	Performance-based control system	09/548626	13-Apr-2000	6510368	21-Jan-2003
Solenis Technologies, L.P.	Phosphate stabilizing compositions	09/737534	15-Dec-2000	6503400	07-Jan-2003

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Solenis Technologies, L.P.	Polyalkyldiallylamine-epihalohydrin resins as wet strength additives for papermaking and process for making the same	10/336468	03-Jan-2003	6906133	14-Jun-2005
Solenis Technologies, L.P.	Process and apparatus for generating haloamine biocide	11/698475	25-Jan-2007	8747740	10-Jun-2014
Solenis Technologies, L.P.	Process and composition for removing precious metals from activated carbon	09/457592	09-Dec-1999	6238632	29-May-2001
Solenis Technologies, L.P.	Process for controlling deposit of sticky material	09/363225	30-Jul-1999	6171445	09-Jan-2001
Solenis Technologies, L.P.	Process for digesting woodchips and digester additives	09/917868	26-Jul-2001	6551452	22-Apr-2003
Solenis Technologies, L.P.	Process for dispersing iron oxide in steam generating boilers	09/183428	30-Oct-1998	6337047	08-Jan-2002
Solenis Technologies, L.P.	Process for improving the flow rate of an aqueous dispersion	14/003599	16-Mar-2012	9290642	22-Mar-2016
Solenis Technologies, L.P.	Process for increasing the dry strength of paper	10/118384	08-Apr-2002	6723204	20-Apr-2004
Solenis Technologies, L.P.	Process for increasing the refiner production rate and/or decreasing the specific energy of pulping wood	11/002594	02-Dec-2004	7726592	01-Jun-2010
Solenis Technologies, L.P.	Process for increasing the refiner production rate and/or decreasing the specific energy of pulping wood	12/752241	01-Apr-2010	7981247	19-Jul-2011
Solenis Technologies, L.P.	Process for inhibiting scale	10/147660	16-May-2002	6858180	22-Feb-2005
Solenis Technologies, L.P.	Process for inhibiting scale and fouling on the metal surfaces exposed to an aqueous system	10/198781	18-Jul-2002	6797177	28-Sep-2004
Solenis Technologies, L.P.	Process for isomerization of alpha olefin to internal olefins	10/968608	19-Oct-2004	7271308	18-Sep-2007
Solenis Technologies, L.P.	Process for reducing contaminants in condensate resulting from the conversion of bauxite to alumina	11/143914	02-Jun-2005	7264729	04-Sep-2007

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Solenis Technologies, L.P.	Process for removing rust from metal surfaces	09/952489	14-Sep-2001	6514350	04-Feb-2003
Solenis Technologies, L.P.	Process for safely decontaminating the chill water used in meat processing	10/693812	24-Oct-2003	7244365	17-Jul-2007
Solenis Technologies, L.P.	Process for treating a liquid medium using ultrasound	10/533679	04-Nov-2003	7632413	15-Dec-2009
Solenis Technologies, L.P.	Process for treating an aqueous system with chlorine dioxide	11/269156	08-Nov-2005	7261821	28-Aug-2007
Solenis Technologies, L.P.	Process to improve performance of wet-strength resins through base activation	14/825605	13-Aug-2015	9719212	01-Aug-2017
Solenis Technologies, L.P.	Process to produce an acylated vinylamine-containing polymer and its application as a papermaking additive	13/446486	13-Apr-2012	8614279	24-Dec-2013
Solenis Technologies, L.P.	Protein adhesive formulations with amine-epichlorohydrin and isocyanate additives	13/116359	26-May-2011	8845851	30-Sep-2014
Solenis Technologies, L.P.	Proteins for use as pitch and stickies control agents in pulp and papermaking processes	09/815367	22-Mar-2001	6527915	04-Mar-2003
Solenis Technologies, L.P.	Proteins for use as pitch and stickies control agents in pulp and papermaking processes	09/816735	22-Mar-2001	6461477	08-Oct-2002
Solenis Technologies, L.P.	Pulping additives for a reduction of resin from kraft pulp	12/535983	05-Aug-2009	8052840	08-Nov-2011
Solenis Technologies, L.P.	Quaternized polyvinylamines as dry strength additives for paper	12/696237	29-Jan-2010	8518215	27-Aug-2013
Solenis Technologies, L.P.	Reactive cationic resins for use as dry and wet strength agents in sulfite ion- containing papermaking systems	11/304345	15-Dec-2005	7828934	09-Nov-2010
Solenis Technologies, L.P.	Reactive cationic resins for use as dry and wet strength agents in sulfite ion- containing papermaking systems	12/941620	08-Nov-2010	8771469	08-Jul-2014
Solenis Technologies, L.P.	Reduced byproduct high solids polyamine-epihalohydrin compositions	10/013049	10-Dec-2001	7303652	04-Dec-2007

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Solenis Technologies, L.P.	Reduced byproduct polyamine-epihalohydrin resins	09/592681	12-Jun-2000	6554961	29-Apr-2003
Solenis Technologies, L.P.	Reduced byproduct polyamine-epihalohydrin resins	10/396155	25-Mar-2003	7175740	13-Feb-2007
Solenis Technologies, L.P.	Retention and drainage aids	11/301804	13-Dec-2005	7615135	10-Nov-2009
Solenis Technologies, L.P.	Retention and drainage in the manufacture of paper	12/437887	08-May-2009	8308902	13-Nov-2012
Solenis Technologies, L.P.	Retention and drainage in the manufacture of paper	11/313505	21-Dec-2005	8206553	26-Jun-2012
Solenis Technologies, L.P.	Retention and drainage in the manufacture of paper	13/551202	17-Jul-2012	8932433	13-Jan-2015
Solenis Technologies, L.P.	Scale and/or corrosion inhibiting composition	09/238850	28-Jan-1999	6207079	27-Mar-2001
Solenis Technologies, L.P.	Scale and/or corrosion inhibiting composition	09/630673	01-Aug-2000	6464900	15-Oct-2002
Solenis Technologies, L.P.	Scale inhibitor for an aqueous system	10/156990	29-May-2002	6846452	25-Jan-2005
Solenis Technologies, L.P.	Sizing composition	13/435107	30-Mar-2012	8871055	28-Oct-2014
Solenis Technologies, L.P.	Stabilizer for creping adhesives	09/135428	17-Aug-1998	6280571	28-Aug-2001
Solenis Technologies, L.P.	Stable acid denatured soy/urea adhesives and methods of making same	12/869848	27-Aug-2010	8465581	18-Jun-2013
Solenis Technologies, L.P.	Stable and aqueous compositions of polyvinylamines with cationic starch, and utility for papermaking	13/081763	07-Apr-2011	8444818	21-May-2013
Solenis Technologies, L.P.	Surface application of polymers and polymer mixtures to improve paper strength	12/940197	05-Nov-2010	8696869	15-Apr-2014
Solenis Technologies, L.P.	Surface application of polymers to improve paper strength	13/285382	31-Oct-2011	8900412	2-Dec-2014

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Solenis Technologies, L.P.	Surfactant based brown stock wash aid treatment for papermachine drainage and dry strength agents	07-Nov-2014	14/535692	9598819	21-Mar-2017
Solenis Technologies, L.P.	Synergistic combinations of organic acids useful for controlling microorganisms in industrial processes	13/834259	15-Mar-2013	9555018	31-Jan-2017
Solenis Technologies, L.P.	Synergistic biocidal mixtures	10/266509	08-Oct-2002	7008545	07-Mar-2006
Solenis Technologies, L.P.	Synergistic biocide and process for controlling growth of microorganisms	11/509158	24-Aug-2006	7820060	26-Oct-2010
Solenis Technologies, L.P.	Synergistic biocide and process for controlling growth of microorganisms	12/911463	25-Oct-2010	8613859	24-Dec-2013
Solenis Technologies, L.P.	Synthesis of high solids resins from amine terminated polyamides	10/404940	01-Apr-2003	6908983	21-Jun-2005
Solenis Technologies, L.P.	Treatment of resins to lower levels of cpd-producing species and improve gelation stability	10/838636	04-May-2004	7081512	25-Jul-2006
Solenis Technologies, L.P.	Use of monochlorea to treat industrial waters	12/823253	25-Jun-2010	8420012	16-Apr-2013
Solenis Technologies, L.P.	Vinylamine containing copolymer microparticles as additives in papermaking	13/666443	01-Nov-2012	8894816	25-Nov-2014
Solenis Technologies, L.P.	Water-resistant vegetable protein adhesive dispersion compositions	11/099175	04-Apr-2005	7345136	18-Mar-2008
Solenis Technologies, L.P.	Dry strength system	08/900805	25-Jul-1997	6294645	25-Sep-2001
Solenis Technologies, L.P.	Tertiary amine polyamidoamine-epihalohydrin polymers	09/071902	04-May-1998	6111032	29-Aug-2000
Solenis Technologies, L.P.	Coacervate stabilizer system	09/207834	07-Dec-1998	6315824	13-Nov-2001
Solenis Technologies, L.P.	Method and device for treating a liquid medium	09/214398	04-Jul-1997	6540922	01-Apr-2003

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Solenis Technologies, L.P.	Process to reduce the aox level of wet strength resins by treatment with base	09/224107	22-Dec-1998	6429267	06-Aug-2002
Solenis Technologies, L.P.	Process for repulping wet strength paper having cationic thermosetting resin	09/336217	04-Dec-1998	6171440	09-Jan-2001
Solenis Technologies, L.P.	Device and process for treating a liquid medium	10/358445	04-Feb-2003	6736979	18-May-2004
Solenis Technologies, L.P.	Method for controlling pitch and stickies deposition	10/444522	23-May-2003	7166192	23-Jan-2007
Solenis Technologies, L.P.	Device and process for treating a liquid medium	10/838945	03-May-2004	7267778	11-Sep-2007
Solenis Technologies, L.P.	Process for treating a liquid medium	12/778959	12-May-2010	8097170	17-Jan-2012
Solenis Technologies, L.P.	Creping adhesive modifier and methods for producing paper products	12/825079	28-Jun-2010	8147649	03-Apr-2012
Solenis Technologies, L.P.	Creping adhesive modifier and methods for producing paper products	13/437724	02-Apr-2012	8608904	17-Dec-2013
Solenis Technologies, L.P.	Organic acid antimicrobial compositions	14/657680	13-Mar-2015	9603362	28-Mar-2017
Solenis Technologies, L.P.	Solid chemical dissolver and methods	13/031724	22-Feb-2011	8852442	07-Oct-2014
Solenis Technologies, L.P.	Compositions for imparting desired properties to materials	09/613425	10-Jul-2000	7317053	08-Jan-2008

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Solenis Technologies, L.P.	Biopolymer sizing agents	15/493773	21-Apr-2017
Solenis Technologies, L.P.	Apparatus, system and method for emulsifying oil and water	13/382177	04-Jan-2012

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Solenis Technologies, L.P.	Composition and method of scale control in regulated evaporative systems	14/250459	11-Apr-2014
Solenis Technologies, L.P.	Composition comprising a non-ionic surfactant and an ionic polymer	14/348977	01-Apr-2014
Solenis Technologies, L.P.	Device and method determining scale thickness on heated surfaces in fluid process applications	15/699464	08-Sep-2017
Solenis Technologies, L.P.	Device and method determining scale thickness on non-heated surfaces in fluid process applications	15/699408	08-Sep-2017
Solenis Technologies, L.P.	Device and method for controlling deposit formation	15/105352	16-Jun-2016
Solenis Technologies, L.P.	Device and method for detecting and analyzing deposits	14/784096	16-Apr-2014
Solenis Technologies, L.P.	High performance fabric release composition and use thereof	15/878155	23-Jan-2018
Solenis Technologies, L.P.	Hydrolyzed starches as grinding aids for mineral ore processing	14/299508	09-Jun-2014
Solenis Technologies, L.P.	Increased drainage performance in papermaking systems using microfibrillated cellulose	15/704583	14-Sep-2017
Solenis Technologies, L.P.	Method for improving solid-liquid separation in waste water processes or conditioning potable water	15/815820	17-Nov-2017
Solenis Technologies, L.P.	Method for regulating the concentration of a treatment chemical inside a liquid bearing system	15/105315	29-Dec-2014
Solenis Technologies, L.P.	Method of enhancing adhesion of liquid toner printed on a substrate, and products therefrom	15/598145	17-May-2017
Solenis Technologies, L.P.	Method of manufacturing paper with unbleached cellulose pulp suspension containing organic residues	15/677370	15-Aug-2017
Solenis Technologies, L.P.	Methods for inhibiting the deposition of organic contaminants in pulp and papermaking systems	15/192188	24-Jun-2016

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Solenis Technologies, L.P.	Powdery water-soluble cationic polymer composition	15/503283	10-Feb-2017
Solenis Technologies, L.P.	Process for filtration enhancement of aqueous dispersions	15/619076	09-Jun-2017
Solenis Technologies, L.P.	Process for improved composite board manufacture	15/441303	24-Feb-2017
Solenis Technologies, L.P.	Process for improving the rheological properties of aqueous dispersions	14/030529	18-Sep-2013
Solenis Technologies, L.P.	Side-stream foam monitor and control system	15/592868	11-May-2017
Solenis Technologies, L.P.	Synergistic blends of antimicrobials useful for controlling microorganisms in industrial processes	15/706993	18-Sep-2017
Solenis Technologies, L.P.	Wet mineral ore processing in mining applications	14/843411	02-Sep-2015
Solenis Technologies, L.P.	Apparatus, system and method for emulsifying oil and water	13/382177	04-Jan-2012
Solenis Technologies, L.P.	System and methods of determining liquid phase turbidity of multiphase wastewater	14/075613	08-Nov-2013
Solenis Technologies, L.P.	Composition and method of scale control in regulated evaporative systems	14/250459	11-Apr-2014
Solenis Technologies, L.P.	Bio-based oil composition and method for producing the same	14/627618	20-Feb-2015
Solenis Technologies, L.P.	Method of making lignocellulosic paper and paper products	15/242654	22-Aug-2016
Solenis Technologies, L.P.	Composition and method of scale control in regulated evaporative systems	15/710042	20-Sep-2017
Solenis Technologies, L.P.	Oil extraction aids in bioproduct production	15/848560	20-Dec-2017
Solenis Technologies, L.P.	Systems and methods for reducing formation of scale in phosphoric acid production	15/918079	12-Mar-2018
Solenis Technologies, L.P.	A composition and method of producing a creping paper and the creping paper thereof	15/926947	20-Mar-2018

<u>Grantor</u>	<u>Title</u>	<u>App. No.</u>	<u>Filing Date</u>
Solenis Technologies, L.P.	Compositions and methods for treating a substrate and for improving adhesion of an image to a treated substrate	15/940659	29-Mar-2018
Solenis Technologies, L.P.	Systems and methods for forming a speciated solution of ammonium carbamate	15/947182	06-Apr-2018
Solenis Technologies, L.P.	Treatment of printing substrate	15/979084	14-May-2018
Solenis Technologies, L.P.	Adiabatic gel polymerization process for the production of water-soluble polyelectrolytes	15/981840	16-May-2018
Solenis Technologies, L.P.	Hydrophobic vinylamine-containing polymer compositions and their use in papermaking applications	62/538859	31-Jul-2017
Solenis Technologies, L.P.	Method for enhanced oxygen delignification of chemical wood pulps	62/556706	11-Sep-2017
Solenis Technologies, L.P.	Chemical efficiency increase in papermaking process	62/567524	03-Oct-2017
Solenis Technologies, L.P.	Low foaming alkylaryl sulfonate composition	62/567616	03-Oct-2017
Solenis Technologies, L.P.	Compositions exhibiting synergy in biofilm control	62/573871	18-Oct-2017
Solenis Technologies, L.P.	Compositions exhibiting synergy in biofilm control	62/573928	18-Oct-2017
Solenis Technologies, L.P.	Pitch detection, quantification and treatment optimization method for pulping and papermaking	62/589261	21-Nov-2017
Solenis Technologies, L.P.	Process for making décor paper with high filler retention and opacity while maintaining wet tensile strength	62/617938	16-Jan-2018
Solenis Technologies, L.P.	Foam assisted application of strength additives to paper products	62/652788	04-Apr-2018