

05-13-2009

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United States Patent and Trademark Office



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

**1. Name of conveying party(ies)**

Lyondell Chemical Technology, L.P.

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

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

Execution Date(s) 03/03/2009

☐ Assignment

☐ Merger

☒ Security Agreement

☐ Change of Name

☐ Joint Research Agreement

☐ Government Interest Assignment

☐ Executive Order 9424, Confirmatory License

☐ Other

**2. Name and address of receiving party(ies)**

Name: \_\_\_\_\_

Internal Address: Citibank, N.A., as Administrative

Agent and Collateral Agent

Street Address: 390 Greenwich Street, 1st Floor

City: New York

State: New York

Country: USA Zip: 10013

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

**4. Application or patent number(s):**

☐ This document is being filed together with a new application.

A. Patent Application No.(s)

B. Patent No.(s)

See Schedule 1

See Schedule 1

Additional numbers attached? ☒ Yes ☐ No

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

Name: Tina Qualls

Internal Address: Corporation Service Company

Street Address: 1133 Avenue of the Americas

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Phone Number: 212-768-4260 ext 2015

Fax Number: \_\_\_\_\_

Email Address: tqualls@cscinfo.com

**6. Total number of applications and patents involved: 287**

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

☐ Authorized to be charged by credit card

☐ Authorized to be charged to deposit account

☒ Enclosed

☐ None required (government interest not affecting title)

**8. Payment Information**

a. Credit Card Last 4 Numbers \_\_\_\_\_

Expiration Date \_\_\_\_\_

b. Deposit Account Number \_\_\_\_\_

Authorized User Name \_\_\_\_\_

**9. Signature:**

Tina Qualls Signature

5/4/09 Date

Name of Person Signing

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

13

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

**LYONDELL CHEMICAL TECHNOLOGY, LP**

**PATENTS AND PATENT APPLICATIONS**

App. No./Patent No.	Title
11/346500	PREPARATION OF PALLADIUM-GOLD CATALYSTS
4975266	PRODUCTION OF HYDROGEN PEROXIDE
5039508	PRODUCTION OF HYDROGEN PEROXIDE
5000825	MONOEPOXIDE PURIFICATION
5043522	PRODUCTION OF OLEFINS
5107001	PROPYLENE OXIDE PRODUCTION
5166371	ASYMMETRIC EPOXIDATION USING A CHIRAL HYDROPEROXIDE
5091163	PARTIALLY PROTONATED SODIUM-ZSM-5 METHOD OF MAKING (AS AMENDED)
5107042	PREPARATION OF OLEFINS USING SELECTIVELY PROTONATED ZEOLITE
5026935	ENHANCED PRODUCTION OF ETHYLENE FROM HIGHER HYDROCARBONS
5026936	ENHANCED PRODUCTION OF PROPYLENE FROM HIGHER HYDROCARBONS
4994625	PRODUCTION OF HYDROGEN PEROXIDE
5129996	LOWER ALKYLENE OXIDE PURIFICATION
5043481	CYCLOHEXANE OXIDATION
5107050	OLEFIN SKELETAL ISOMERIZATION
5166370	PREPARATION OF TETRAHYDROFURAN USING A SUPPORTED TRANSITION METAL
5171921	PRODUCTION OF OLEFINS
5202463	PROCESS FOR THE PREPARATION OF A GLYCOL ETHER ESTER
5162593	TERTIARY BUTYL ALCOHOL PREPARATION
5239007	OIL-ABSORBENT COMPOSITIONS
5146034	CONVERSION OF PARAFFINS TO OLEFINS
5352807	PROPYLENE OXIDE PURIFICATION
5198590	HYDROCARBON CONVERSION
5208385	PREPARATION OF TETRAHYDROFURAN POLYMERS HAVING A NARROW MOLECULAR WEIGHT DISTRIBUTION USING AN AMORPHOUS SILICA-ALUMINA CATALYST
5208194	RECOVERY OF GROUP VIII TRANSITION METALS FROM ORGANIC SOLUTIONS USING ACIDIC ION-EXCHANGE RESINS
5262371	ALKYLENE OXIDE ISOMERIZATION PROCESS AND CATALYST
5292974	ALKYLENE OXIDE ISOMERIZATION PROCESS AND CATALYST
5171868	EPOXIDATE TREATMENT
5319006	PREPARATION OF POLYESTERS FROM POLYETHERS BY AN ESTER-INSERTION PROCESS
5233093	HYDROFORMYLATION PROCESS AND BIMETALLIC CATALYST THEREFOR
5276210	HYDROFORMYLATION PROCESS AND BIMETALLIC CATALYST THEREFOR

App. No./Patent No.	Title
5276235	RESIDUAL STREAM UPGRADING IN A PROPYLENE OXIDE-STYRENE MONOMER PROCESS
5314511	DIESEL FUEL
5290743	PROCESS FOR REGENERATING A DEACTIVATED RHODIUM HYDROFORMYLATION CATALYST SYSTEM
5312998	INTEGRATED PROCESS FOR THE PRODUCTION OF DITERTIARY BUTYL PEROXIDE
5859167	CURED POLYESTER PLASTIC COMPOSITIONS DERIVED FROM RECYCLED POLYURETHANES
5420357	PREPARATION OF DIALKYL PEROXIDES
5938835	CEMENT COMPOSITION
5374747	EPOXIDATION PROCESS AND CATALYST THEREFORE
5684170	EPOXIDATION PROCESS (AS AMENDED)
5695736	EPOXIDATION PROCESS AND CATALYST THEREFORE
5308365	DIESEL FUEL
5466836	CATALYTIC CONVERTER AND METHOD FOR HIGHLY EXOTHERMIC REACTIONS
5573736	CATALYTIC CONVERTER AND METHOD FOR HIGHLY EXOTHERMIC REACTIONS
5436313	PROCESS FOR MAKING A POLYETHERESTER
5436314	PROCESS FOR MAKING A POLYETHERESTER BY INSERTION OF A CARBOXYLIC ACID INTO A POLYETHER
5569737	PROCESS FOR MAKING A POLYETHERESTER BY INSERTION OF A CARBOXYLIC ACID INTO A POLYETHER
5610205	PROCESS FOR MAKING A POLYETHERESTER BY INSERTION OF A CARBOXYLIC ACID INTO A POLYETHER
5554796	REMOVAL OF PRIMARY AND SECONDARY HYDROPEROXIDE IMPURITIES FROM TERTIARY HYDROPEROXIDES
5504261	PRODUCTION OF HYDROXY COMPOUNDS
5444141	PROCESS FOR MAKING VINYL AROMATIC/ALLYLIC ALCOHOL COPOLYMERS
5512642	PROCESS FOR MAKING VINYL AROMATIC/ALLYLIC ALCOHOL COPOLYMERS
5600033	IMPROVED EPOXIDE ISOMERIZATION CATALYSTS
5475073	HYDROXY-FUNCTIONAL ACRYLATE RESINS
5525693	HYDROXY-FUNCTIONAL ACRYLATE RESINS
5571884	HYDROXY-FUNCTIONAL ACRYLATE RESINS
5646314	IMPROVED PROCESS FOR TITANIUM SILICALITE-CATALYZED EPOXIDATION
5475147	PRODUCTION OF TERTIARY BUTYL HYDROPEROXIDE
5436382	ISOBUTYLENE RECOVERY PROCESS
5468885	EPOXIDIZER OXYGEN RECOVERY
5476971	GLYCERINE DITERTIARY BUTYL ETHER PREPARATION
5567853	PURIFICATION OF ACETONE
5493035	PROPYLENE OXIDE PURIFICATION
5753576	REGENERATION OF A TITANIUM-CONTAINING MOLECULAR SIEVE
5591875	IMPROVED EPOXIDATION PROCESS
5585077	MOLYBDENUM EPOXIDATION CATALYST RECOVERY
5688484	NON-HYDROTHERMAL METHOD OF MAKING A TITANIUM-CONTAINING ZEOLITE (AS AMENDED)
5763630	PROPYLENE OXIDE PROCESS USING ALKALINE EARTH METAL COMPOUND-SUPPORTED SILVER CATALYSTS

App. No./Patent No.	Title
6083870	ALKALINE EARTH METAL COMPOUND-SUPPORTED SILVER CATALYSTS
5679749	NIObIUM-CONTAINING ZEOLITES
5681789	ACTIVATION OF AS-SYNTHESIZED TITANIUM-CONTAINING ZEOLITES
5741749	REGENERATION OF A TITANIUM-CONTAINING MOLECULAR SIEVE
5659102	PRODUCTION OF ISO OLEFIN OLIGOMERS
5731446	MOLYBDENUM EPOXIDATION CATALYST RECOVERY
5883268	PROCESS STREAM PURIFICATION
5886114	PROCESS FOR MAKING VINYL AROMATIC/ALLYLIC ALCOHOL COPOLYMERS
5916835	HETEROGENEOUS CATALYST REGENERATION
5840933	CATALYTIC CONVERTER SYSTEM AND PROCESS
6153153	CATALYTIC CONVERTER SYSTEM AND PROCESS
5760253	CATALYTIC CONVERTER AND METHOD FOR HIGHLY EXOTHERMIC REACTIONS
5759945	PREPARATION OF TITANIUM-CONTAINING CATALYSTS USING TITANOSILOXANE POLYMERS
6462117	COATINGS AND INKS BASED ON SOLVENTS HAVING NEGLIGIBLE PHOTOCHEMICAL REACTIVITY
5994578	ESTER PREPARATION
5770746	EPOXIDATION PROCESS USING SUPPORTED SILVER CATALYSTS PRETREATED WITH ORGANIC CHLORIDE
5780558	PROCESS FOR MAKING DICYCLOPENTADIENE POLYETHERESTER RESINS
6011162	EPOXIDATION PROCESS USING IMPROVED HETEROGENEOUS CATALYST COMPOSITION
5912367	HIGH EFFICIENCY EPOXIDATION PROCESS
6066750	HIGH EFFICIENCY EPOXIDATION PROCESS
6153713	PROCESS FOR MAKING HYDROXY-FUNCTIONAL ACRYLIC RESINS HAVING LOW RESIDUAL ALLYL MONOMER CONTENT
5776848	MOLYBDENUM EPOXIDATION CATALYST RECOVERY
6024840	PROPYLENE OXIDE PURIFICATION
5863391	PURIFICATION OF A METHANOL STREAM
5849938	SEPARATION OF METHANOL AND PROPYLENE OXIDE FROM A REACTION MIXTURE
5866714	ESTER PREPARATION
6018076	ESTER PREPARATION
5770659	PROCESS FOR MAKING STORAGE-STABLE EPOXY-CAPPED POLYETHERESTER RESINS
5849937	EPOXIDATION PROCESS USING SERIALLY CONNECTED CASCADE OF FIXED BED REACTORS
5877372	SELECTIVE OLEFIN OLIGOMERIZATION
5854359	PROCESS FOR MAKING POLYETHERESTER RESINS HAVING HIGH AROMATIC DIESTER CONTENT
5880225	PROCESS FOR MAKING POLYETHERESTER RESINS HAVING HIGH AROMATIC DIESTER CONTENT
5939569	EPOXIDATION PROCESS
6194602	TERTIARY ALKYL ESTER PREPARATION
6005123	EPOXIDATION PROCESS
6008388	EPOXIDATION PROCESS
6103840	PROCESS FOR MAKING ALLYLIC/ETHYLENIC COPOLYMERS
5932751	EPOXIDATION CATALYST AND PROCESS

App. No./Patent No.	Title
6037484	IMPROVED EPOXIDATION PROCESS
5993673	PURIFICATION PROCESS
5973171	PROPYLENE OXIDE PRODUCTION
5972173	ALLYL ALCOHOL PURIFICATION
6127584	BUTANEDIOL PRODUCTION
6306263	IMPURITIES SEPARATION BY DISTILLATION
6478930	IMPURITIES SEPARATION BY DISTILLATION
6114552	HETEROGENEOUS EPOXIDATION CATALYST
6383966	HETEROGENEOUS EPOXIDATION CATALYST
6063942	CATALYST PREPARATION AND EPOXIDATION PROCESS
6242640	TERTIARY ALKYL ESTER PREPARATION USING LARGE-PORE ZEOLITE CATALYSTS
6225509	ALLYL ALCOHOL HYDROFORMYLATION
6376731	SELECTIVE OLEFIN OLIGOMERIZATION
6194591	AQUEOUS EPOXIDATION PROCESS USING MODIFIED TITANIUM ZEOLITE
6232505	METHOXYACETONE PREPARATION
6426437	HYDROFORMYLATION PROCESS
6307073	DIRECT EPOXIDATION PROCESS USING A MIXED CATALYST SYSTEM
6264800	PURIFICATION PROCESS
6781010	NON-PHOSGENE ROUTE TO THE MANUFACTURE OF ORGANIC ISOCYANATES
6281369	EPOXIDATION CATALYST AND PROCESS
6555493	SOLID EPOXIDATION CATALYST AND PREPARATION
6376718	DEHYDROGENATION OF ALKYLENE GLYCOL ETHERS TO ETHER KETONES AND ALDEHYDES
6414085	POLYESTER RESINS BASED ON TEREPHTHALIC ACID AND 2-METHYL-1,3-PROPANEDIOL AND PROCESSES FOR THE PREPARATION THEREOF
6310224	EPOXIDATION CATALYST AND PROCESS
6468496	PROCESS FOR PRODUCING HYDROGEN PEROXIDE
6403714	PREPARATION OF EPOXY-FUNCTIONAL RESINS
6455657	PREPARATION OF VINYL AROMATIC-ALLYLIC ALCOHOL COPOLYMERS
6376686	DIRECT EPOXIDATION PROCESS
6375804	TERTIARY BUTYL ACETATE RECOVERY
6376724	COBALT-CATALYZED PROCESS FOR PREPARING 1,3-PROPANEDIOL
6376720	COBALT-CATALYZED PROCESS FOR PREPARING 1,3-PROPANEDIOL
6441203	DIRECT EPOXIDATION PROCESS USING A PALLADIUM ON NIOBIUM-CONTAINING SUPPORT
6441204	DIRECT EPOXIDATION PROCESS USING A MIXED CATALYST SYSTEM
6498259	DIRECT EPOXIDATION PROCESS USING A MIXED CATALYST SYSTEM
6417378	DIRECT EPOXIDATION PROCESS USING PRE-TREATED TITANIUM ZEOLITE
6710192	DENSE PHASE EPOXIDATION
6492487	PROCESS FOR MAKING REACTIVE UNSATURATED POLYESTER RESINS FROM 2-METHYL-1,3-PROPANEDIOL
6512066	PROCESS FOR MAKING CROSSLINKED POLYVINYLPIRROLIDONE WITH LOW SWELL VOLUME

App. No./Patent No.	Title
6500311	PROPYLENE OXIDE PURIFICATION
6930143	ACRYLIC LATEX COMPOSITION
6399794	DIRECT EPOXIDATION PROCESS USING CARBONATE MODIFIERS
6403815	DIRECT EPOXIDATION PROCESS USING A MIXED CATALYST SYSTEM
6417412	PURIFICATION OF TERTIARY BUTYL ALCOHOL
6512129	EPOXIDATION PROCESS
6555623	PREPARATION OF UNSATURATED POLYESTERS
6562987	REACTOR SYSTEM AND METHOD FOR HIGHLY EXOTHERMIC REACTIONS
6759541	EPOXIDATION PROCESS USING A SUPPORTED NIOBIUM OXIDE CATALYST
6872679	HETEROGENEOUS CATALYST REGENERATION
6563010	ADSORBENT BED LOADING AND REGENERATION
6914167	VENT RECOVERY SYSTEM
6660800	PROCESS FOR MAKING CROSSLINKED POLYVINYLPIRROLIDONE
6696521	HIGH PERFORMANCE ORTHO UPR
6755979	PEROXIDE IMPURITIES REMOVAL
6583300	EPOXIDATION SYSTEM WITH FIXED BED REACTORS
6906200	PRODUCTION OF N-VINYL PYRROLIDONE
6960671	PROCESS FOR DIRECT OXIDATION OF PROPYLENE TO PROPYLENE OXIDE AND LARGE PARTICLE SIZE TITANIUM SILICALITE CATALYSTS FOR USE THEREIN
7399726	PROCESS FOR DIRECT OXIDATION OF PROPYLENE TO PROPYLENE OXIDE AND LARGE PARTICLE SIZE TITANIUM SILICALITE CATALYSTS FOR USE THEREIN
7022885	PURIFICATION OF METHYL TERTIARY BUTYL ETHER
6710194	EPOXIDATION PROCESS
10/387849	ORGANOSULFUR OXIDATION PROCESS
7270742	ORGANOSULFUR OXIDATION PROCESS
7279145	MULTIPHASE REACTOR DESIGN INCORPORATING FILTRATION SYSTEM FOR FIXED-BED CATALYST
11/890183	MULTIPHASE REACTOR DESIGN INCORPORATING FILTRATION SYSTEM FOR FIXED-BED CATALYST
7078539	CARBONATE DECOLORIZATION
7087094	DRYCLEANING METHOD USING DIPROPYLENE GLYCOL N-PROPYL ETHER
6762262	PREPARATION OF ACRYLIC POLYOLS
7256149	CATALYST REGENERATION PROCESS
6770790	PURIFICATION OF TERTIARY BUTYL ALCOHOL
7012167	DIISOBUTYLENE PROCESS
6870060	PRODUCT RECOVERY FROM SUPERCRITICAL MIXTURES
10/770924	EPOXIDATION PROCESS USING A MIXED CATALYST SYSTEM
7144499	DESULFURIZATION PROCESS
6884898	PROPYLENE OXIDE PROCESS
6803491	PREPARATION OF LITHIUM PHOSPHATE CATALYSTS
11/977363	DESULFURIZATION PROCESS
7182932	CATALYST PREPARATION
6958405	POLYMER-ENCAPSULATED TITANIUM ZEOLITES FOR OXIDATION REACTIONS

App. No./Patent No.	Title
7030255	OXIDATION PROCESS WITH IN-SITU H <sub>2</sub> O <sub>2</sub> GENERATION AND POLYMER-ENCAPSULATED CATALYSTS THEREFOR
6984606	EPOXIDATION CATALYST
7153978	METHOD FOR PURIFYING N-METHYL-2-PYRROLIDONE
7138528	METHOD FOR CRYSTALLIZING N-VINYL-2-PYRROLIDONE
6867312	PROPYLENE OXIDE PROCESS
10/867507	CATALYST REGENERATION PROCESS
7271117	EPOXIDATION CATALYST
7414164	DIISOBUTYLENE PROCESS
7276464	TITANIUM ZEOLITE CATALYSTS
7470800	TITANIUM ZEOLITE CATALYSTS
6936740	DENSE PHASE OXIDATION OF BENZENE
6972337	EPOXIDATION PROCESS
7002026	REMOVAL OF PROPYLENE GLYCOL AND PROPYLENE GLYCOL ETHERS FROM AQUEOUS STREAMS
7288237	EPOXIDATION CATALYST
6977282	PREPARATION OF DICYCLOPENTADIENE-CONTAINING UNSATURATED POLYESTERS
6982337	PROCESS FOR MAKING N-VINYL-2-PYRROLIDONE
7141679	PROCESS FOR MAKING N-VINYL-2-PYRROLIDONE
7144850	DRYCLEANING METHOD USING DIPROPYLENE GLYCOL DIMETHYL ETHER
7045639	METHOD FOR PURIFYING N-(2-HYDROXYETHYL)-2-PYRROLIDONE
7026492	DIRECT EPOXIDATION PROCESS USING MODIFIERS
7084284	SEPARATION PROCESS
7057056	EPOXIDATION CATALYST
7238260	PURIFICATION OF N-(2-HYDROXYETHYL)-2-PYRROLIDONE
10/994513	DIISOBUTYLENE PROCESS
7138535	DIRECT EPOXIDATION PROCESS
6969780	PRODUCTION OF BUTANEDIOL
11/104122	CATALYST PREPARATION
11/111572	METHOD FOR RECOVERING SOLVENTS
7273826	EPOXIDATION CATALYST
7476770	EPOXIDATION CATALYST
7232783	PROPYLENE OXIDE CATALYST AND USE
7425652	PREPARATION OF ALKANOLAMINES
11/879265	PREPARATION OF ALKANOLAMINES
7253305	TERTIARY ALKYL ACETATE PREPARATION
11/254829	DIRECT EPOXIDATION PROCESS
7432384	DIRECT EPOXIDATION PROCESS
11/245708	SELECTIVE OLEFIN OLIGOMERIZATION
11/249241	POLYMER-ENCAPSULATED ION-EXCHANGE RESIN
11/312036	PROCESS FOR OXIDIZING ORGANIC COMPOUNDS
7238817	DIRECT EPOXIDATION PROCESS
7365217	OXIDATION PROCESS
7482495	PROCESS FOR MAKING ALKYLENE GLYCOL ETHER COMPOSITIONS USEFUL FOR METAL RECOVERY
7105687	PROPYLENE OXIDE PURIFICATION AND RECOVERY
7259280	PROCESS FOR PRODUCING ALKENYL ALCOHOLS
7357909	PROCESS FOR PRODUCING HYDROGEN PEROXIDE
11/484906	DIRECT EPOXIDATION PROCESS USING A MIXED CATALYST SYSTEM
11/489086	DIRECT EPOXIDATION PROCESS USING IMPROVED CATALYST COMPOSITION

App. No./Patent No.	Title
11/415598	REACTION SYSTEM
11/641317	DIRECT EPOXIDATION PROCESS
11/641482	INORGANIC OXIDE EXTRUDATES
11/544326	DRYCLEANING METHOD
7271295	HYDROFORMYLATION PROCESS
7208625	REMOVING PERMANGANATE-REDUCING IMPURITIES FROM ACETIC ACID
11/588453	ALKYLENE OXIDE PROCESS
11/633196	PROPYLENE OXIDE SYSTEM
11/641230	PROPYLENE PRODUCTION
7381675	DIRECT EPOXIDATION CATALYST
11/728098	PROPYLENE OXIDE RECOVERY PROCESS
11/784911	DIRECT EPOXIDATION PROCESS USING A MIXED CATALYST SYSTEM
7279606	HYDROFORMYLATION PROCESS
7294602	HYDROFORMYLATION PROCESS
11/809109	SLURRY REACTION SYSTEM
11/801935	PREPARATION OF PALLADIUM-GOLD CATALYSTS
7345197	PREPARATION OF ACETIC ACID
11/818318	PROPYLENE PRODUCTION
11/890728	PROPYLENE AND ISOPRENE PRODUCTION
7387981	DIRECT EPOXIDATION CATALYST AND PROCESS
12/011659	SPRAY-DRIED TRANSITION METAL ZEOLITE AND ITS USE
7453003	DIRECT EPOXIDATION CATALYST AND PROCESS
11/891460	DIRECT EPOXIDATION CATALYST AND PROCESS
11/999222	DIISOBUTENE PROCESS
11/986124	PROCESS FOR PRODUCING HYDROGEN PEROXIDE
7390919	METHYL ACETATE PURIFICATION AND CARBONYLATION
11/977360	DIRECT EPOXIDATION PROCESS USING IMPROVED CATALYST COMPOSITION
7470801	DIRECT EPOXIDATION PROCESS USING A MIXED CATALYST SYSTEM
7439405	PURIFICATION OF PROPYLENE GLYCOL MONOALKYL ETHER
12/009212	PRODUCTION OF PROPYLENE GLYCOL MONOALKYL ETHER
12/079823	PROPYLENE OXIDE PROCESS
12/079796	DIRECT EPOXIDATION PROCESS
12/154730	DIRECT EPOXIDATION PROCESS
12/072575	EPOXIDATION CATALYST
12/231220	PROPYLENE OXIDE PROCESS
12/077252	PREPARATION OF GLYCEROL TERT-BUTYL ETHERS
12/077098	REMOVING HYDROCARBON IMPURITIES FROM ACETIC ACID PRODUCTION PROCESS
12/156004	DIISOBUTYLENE PROCESS
12/315605	DIISOBUTYLENE PROCESS
12/151554	REMOVING HYDROCARBON IMPURITIES FROM ACETIC ACID BY IONIC LIQUID EXTRACTION
12/157110	PROPYLENE OXIDE PROCESS
12/316829	CATALYST REGENERATION METHOD
12/284727	EPOXIDATION CATALYST
12/283329	PREPARATION OF ACETIC ACID
12/286229	RESIDUAL STREAM UPGRADING IN A PROPYLENE OXIDE-STYRENE MONOMER PROCESS
12/313814	DIRECT HYDROCARBONYLATION PROCESS
12/290757	REMOVING IODOBENZENE COMPOUNDS FROM ACETIC ACID



App. No./Patent No.	Title
12/291628	SUPPORTED PALLADIUM-GOLD CATALYSTS AND PREPARATION OF VINYL ACETATE THEREWITH
12/316948	PURIFICATION OF ULTRALOW SULFUR DIESEL FUEL
12/315887	PREPARATION OF ACETIC ACID
12/317012	DIRECT EPOXIDATION PROCESS USING IMPROVED CATALYST
12/317749	SPRAY DRIED ZEOLITE CATALYST
12/317873	CATALYST REGENERATION
12/317794	PROPYLENE PRODUCTION
12/319247	PROPYLENE OXIDE REACTOR GAS DISTRIBUTION SYSTEM
7060787	EXTRACTION OF IMPURITIES FROM GRAFTED POLYOLEFINS
7175918	POLYOLEFIN COMPOSITIONS

# PATENT SECURITY AGREEMENT

(Patents, Patent  
Applications and Patent Licenses)

March 3, 2009

WHEREAS, Lyondell Chemical Technology, L.P., a Delaware limited partnership (herein referred to as the "**Grantor**") owns, or in the case of licenses is a party to, the Patent Collateral (as defined below);

WHEREAS, LYONDELL CHEMICAL COMPANY, a Delaware corporation, as a Borrower and as Borrowers' Agent; EQUISTAR CHEMICALS, LP, a Delaware limited partnership, HOUSTON REFINING LP, a Delaware limited partnership, BASELL USA INC., a Delaware corporation and MILLENNIUM CHEMICALS INC., a Delaware corporation, and MILLENNIUM PETROCHEMICALS INC., a Virginia corporation, each as a Borrower (collectively, the "**Borrowers**"), the other US Guarantors party thereto, Citibank, N.A. as Administrative Agent and Collateral Agent, Citibank, N.A. as Fronting Bank and the other agents and parties thereto have entered into that Debtor-In-Possession Credit Agreement dated as of March 3, 2009 (as amended from time to time, the "**Credit Agreement**"); and

WHEREAS, pursuant to (i) a Guarantee and Security Agreement dated as of March 3, 2009 (as amended and/or supplemented from time to time, the "**Security Agreement**") among the Borrowers, the US Guarantors party thereto and Citibank, N.A. as Administrative Agent for the Secured Parties referred to therein (in such capacity, together with its successors in such capacity, the "**Grantee**"), and (ii) certain other Security Documents (including this Patent Security Agreement), the Grantor has guaranteed certain obligations of the Borrowers and secured such guarantee (the "**Grantor's Secured Guarantee**") by granting to the Grantee for the benefit of such Secured Parties a continuing security interest in personal property of the Grantor, including all right, title and interest of the Grantor in, to and under the Patent Collateral (as defined below);

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Grantor hereby pledges and grants to the Grantee, to secure the Grantor's Secured Guarantee, a continuing security interest in all of the Grantor's right, title and interest in, to and under the following (all of the following items or types of property being herein collectively referred to as the "**Patent Collateral**"), whether now owned or hereafter acquired:

(vii) each Patent owned by the Grantor, including, without limitation, each Patent or Patent application identified in Schedule I hereto;

(viii) each Patent License to which the Grantor is a party; and

(ix) all Grantor's claims for, and rights to sue for, past, present or future infringements of any Patent (including, without limitation, any Patent owned by the Grantor and identified in Schedule 1), and all income, royalties, damages and payments now or hereafter due or payable with respect to any such Patent, including damages and payments for past, present or future infringements thereof, and all rights and benefits of the Grantor under any Patent License (including, without limitation, any Patent License identified in Schedule 1).


The foregoing security interest is granted in conjunction with the security interests granted by the Grantor to the Grantee pursuant to the Security Agreement. The Grantor acknowledges and affirms that the rights and remedies of the Grantee with respect to the security interest in the Patent Collateral granted hereby are more fully set forth in the Security Agreement, the terms and provisions of which are incorporated by reference herein as if fully set forth herein in their entireties.

Unless otherwise defined herein or the context otherwise requires, terms used in this agreement have the meanings provided or provided by reference in the Credit Agreement and the Security Agreement.

In the event of any inconsistency between the terms or conditions of this Patent Security Agreement and the terms and conditions of the Security Agreement or Credit Agreement, the terms and conditions of the Security Agreement or Credit Agreement, as applicable, shall control.

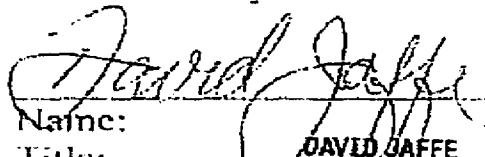
IN WITNESS WHEREOF, the Grantor has caused this Patent Security Agreement to be duly executed by its officer thereunto duly authorized as of the day first above written.

LYONDELL CHEMICAL TECHNOLOGY, L.P

By:   
Name: Alan Bigman  
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[SIGNATURE PAGE TO PATENT SECURITY GRANT (ABL)]

Citibank, N A., as Collateral Agent

By   
Name: DAVID JAFFE  
Title: Director/Vice President

[SIGNATURE PAGE TO PATENT SECURITY GRANT (ABL)]