

PATENT ASSIGNMENT

Electronic Version v1.1

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SUBMISSION TYPE:	NEW ASSIGNMENT										
NATURE OF CONVEYANCE:	ASSIGNMENT										
CONVEYING PARTY DATA											
<table border="1"><thead><tr><th>Name</th><th>Execution Date</th></tr></thead><tbody><tr><td>Chronopol, Inc.</td><td>02/29/2000</td></tr><tr><td>Ecopol, LLC</td><td>02/29/2000</td></tr></tbody></table>	Name	Execution Date	Chronopol, Inc.	02/29/2000	Ecopol, LLC	02/29/2000					
Name	Execution Date										
Chronopol, Inc.	02/29/2000										
Ecopol, LLC	02/29/2000										
RECEIVING PARTY DATA											
<table border="1"><tr><td>Name:</td><td>Cargill Dow Polymers, LLC</td></tr><tr><td>Street Address:</td><td>2030 Abbott Road</td></tr><tr><td>City:</td><td>Midland</td></tr><tr><td>State/Country:</td><td>MICHIGAN</td></tr><tr><td>Postal Code:</td><td>48674</td></tr></table>	Name:	Cargill Dow Polymers, LLC	Street Address:	2030 Abbott Road	City:	Midland	State/Country:	MICHIGAN	Postal Code:	48674	
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Street Address:	2030 Abbott Road										
City:	Midland										
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Postal Code:	48674										
PROPERTY NUMBERS Total: 1											
<table border="1"><thead><tr><th>Property Type</th><th>Number</th></tr></thead><tbody><tr><td>Patent Number:</td><td>6323307</td></tr></tbody></table>	Property Type	Number	Patent Number:	6323307							
Property Type	Number										
Patent Number:	6323307										
CORRESPONDENCE DATA											
Fax Number: (303)863-0223 <i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i>											
Email: GConnell@SheridanRoss.com											
Correspondent Name: Sheridan Ross P.C.											
Address Line 1: 1560 Broadway Street											
Address Line 2: Suite 1200											
Address Line 4: Denver, COLORADO 80202											
ATTORNEY DOCKET NUMBER:	4070										
NAME OF SUBMITTER:	Gary J Connell										
Total Attachments: 45 source=doc 3-Asset Sale and Purchase Agreement#page1.tif source=doc 3-Asset Sale and Purchase Agreement#page2.tif source=doc 3-Asset Sale and Purchase Agreement#page3.tif											

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PATENT
REEL: 019872 FRAME: 0535

ASSET SALE AND PURCHASE AGREEMENT

THIS ASSET SALE AND PURCHASE AGREEMENT (the "Agreement"), dated as of February 29, 2000, is made and entered into by and among Chronopol, Inc., a Colorado corporation, and Ecopol, LLC, a Colorado limited liability company, both located at 4455 Table Mountain Drive, Golden, Colorado 80403 (Chronopol, Inc. and Ecopol, LLC hereinafter collectively referred to as the "Seller"), Cargill Dow Polymers LLC, a Delaware limited liability company, located at 2030 Abbott Road, Midland, Michigan 48674, (the "Purchaser"), and, for the limited purpose of the guarantee as set forth on the signature page hereto, ACX Technologies, Inc., a Colorado corporation ("ACX").

RECITALS

- A. The Seller has been engaged in a business involving the development and sale of polylactide based resins (the "Business") and Seller is the owner of certain intellectual property and other assets used in that Business; and
- B. The Purchaser is also in the business of developing and selling polylactide resins; and
- C. The Seller desires to sell and the Purchaser desires to purchase all of the Seller's intellectual property assets and certain other assets related to the Business; and
- D. The Purchaser and the Seller are willing to transfer said assets from the Seller to the Purchaser, all in accordance with the terms and conditions hereinafter set forth.

DEFINITIONS

Specific Definitions. As used in this Agreement, the following terms have the following meanings

"Affiliate" means any entity directly or indirectly controlling, controlled by or under common control of Purchaser or Seller where "control" means the direct or indirect power to direct that entity's management and policies.

"Assignment" means the assignment document, substantially in the form of Attachment I to be executed by Seller at the Closing.

"Background Agreements" means the agreements listed in Schedule E.

"Books and Records" means all books of account, records, files and invoices, including all production data, employee files, accounting records, sales and sales promotional data and materials, advertising materials, sales training materials, educational support program materials, customer lists, supplier lists, and manuals, blueprints, research and development files, records and laboratory books, patent

disclosures, correspondence, litigation files, computer files and electronic records and any other records and data, including files relating to the Transferred Intellectual Property and the Contracts, owned by Seller and used in connection with the Business except in each case to the extent included in or related to any Excluded Assets.

"Business" has the meaning specified in the recitals hereto.

"Claim Notice" has the meaning specified in Section 10.03(a).

"Closing" has the meaning specified in Section 2.

"Closing Date" has the meaning specified in Section 2.

"Confidentiality Agreement" means the Agreement, dated April 1, 1999, between Seller and Purchaser.

"Consent" means any consent, waiver, approval, authorization, exemption, registration or declaration.

"Contracts" means all agreements, contracts, purchase and sale orders, commitments and licenses to which the Seller is a party that are identified on Schedule D

"Damages" has the meaning specified in Section 10.01.

"Direct Claim" has the meaning specified in Section 10.03(a).

"Excluded Assets" means all assets, properties and rights of the Seller other than the Transferred Assets, including, but not limited to, the Retained Obligations (as defined below) and the Seller's real estate or any interest in real estate, equipment, inventory, and employment contracts, as specified in Schedule C.

"GTC" means Golden Technologies Company, Inc., a Colorado corporation located at 4455 Table Mountain Drive, Golden, Colorado 80403.

"Judgments" means any judgments, injunctions, orders, writs, rulings or awards of any court or other judicial authority or any governmental, administrative or regulatory authority of competent jurisdiction.

"Liability" means any liabilities or obligations, in each case of the Business, of any nature, whether known or unknown, accrued, absolute, contingent or otherwise, and whether due or to become due.

"Liens" means all liens, mortgages, charges, security interests, sureties, options or other encumbrances whatsoever.

GRA BS

"Melt Crystallization Lactide Patents" means U.S. Patent Application Serial No. 08/231,964 entitled "Melt Crystallization of Lactides" (Sheridan Ross, P.C. Docket No. 4042-64-36-1) and any and all related U.S. and foreign patents and patent applications, including without limitation reissues, extensions, substitutions, confirmations, registrations, revalidations, additions, continuations, continuations-in-part and divisions of the foregoing.

"Proceeding" means any action, suit, demand, claim or legal, administrative, arbitration or other alternative dispute resolution proceeding, hearing or investigation.

"Purchase Price" has the meaning specified Section 3.1.

"Purchaser Indemnified Party" means Purchaser, Purchaser's Affiliates, directors, officers, shareholders, attorneys, accountants, agents and employees, and their respective heirs, successors and assigns.

"Retained Obligations" has the meaning set forth in Section 1.1.

"Seller Indemnified Party" means the Seller, the Seller's Affiliates, directors, officers, shareholders, members, attorneys, accountants, agents and employees, and their respective heirs, successors and assigns.

"Sulzer" means Sulzer Chemtech AG, having a registered office at CH-8404 Winterthur, Switzerland.

"Sulzer Agreement" means any agreement(s) between Seller and Sulzer to provide a nonexclusive license to Sulzer concerning purification of lactide by melt stabilization.

"Sulzer Claims" means any and all claims of Sulzer to ownership of or rights to the Melt Crystallization Lactide Patents.

"Third Party Claim" has the meaning specified in Section 10.03(a).

"Transferred Assets" has the meaning specified in Section 1.1.

"Transferred Intellectual Property" means (i) all the patents and patent applications owned by Seller and GTC relating to the Business, including those identified on Schedule A, and including all rights, to the extent permitted by law, to file corresponding applications in any country in the world, as well as any continuations, continuations-in-part, divisional applications, and any Letters Patent issued therefrom including reissues, together with all non-U.S. counterparts, (ii) all inventions, trade secrets, know-how and formulae, whether patentable or unpatentable, owned by Seller and relating to the Business, including those related to products under development, and further including any rights as permitted by law to obtain patents thereon in any country in the world, (iii) all the trademarks (registered or unregistered), trademark applications

and copyrights relating to the Business, including those items identified on Schedule A, all of the foregoing of (i) – (iii) subject to existing licenses and rights to third parties (if any) and existing ownership interests of third parties under the Background Agreements and (iv) all of Seller's right, title and interest in and to each license, contract or other agreement listed in Schedule D.

AGREEMENT

In consideration of the above premises and the mutual covenants and agreements hereinafter set forth, the parties agree as follows:

1. PURCHASE OF ASSETS

1.1 Transferred Assets

The Seller shall, and shall cause its Affiliates to, sell, transfer, convey, assign and deliver to the Purchaser, and the Purchaser shall purchase, acquire and accept on the Closing Date all of the right, title and interest of the Seller in and to the following assets, except as specifically excluded by listing in Schedule C, as the same exist on the Closing Date (the "Transferred Assets"):

- (i) the Transferred Intellectual Property;
- (ii) the Books and Records; and
- (iii) the Seller's rights under the Contracts to the extent permitted by the Contracts.

The Purchaser shall not acquire, and the Seller shall have no obligation to sell, any assets, except the Transferred Assets, of the Seller pursuant to this Agreement.

Seller is, and shall remain, responsible for any outstanding obligations of Seller in connection with the Background Agreements ("Retained Obligations"). The Purchaser shall perform or pay promptly, when required or due, all other liabilities and obligations in connection with the Transferred Assets.

1.2 Closing Documents

The purchase and sale of the Transferred Assets as herein provided shall be effected by bills of sale, certificates of title, assignments, and other instruments of transfer delivered to the Purchaser on the Closing Date in form reasonably satisfactory to the parties and sufficient to transfer the Transferred Assets as contemplated by this Agreement.

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

Purchaser

Cargill Dow Polymers LLC

By: James R. Stoppert
Name: James R. Stoppert
Title: President

Seller

Chronopol, Inc.

By: Jill B.W. Sisson
Name: Jill B.W. Sisson
Title: Secretary

Ecopol, LLC

By: Jill B.W. Sisson
Name: Jill B.W. Sisson
Title: as Secretary of Chronopol, Inc., sole member

We hereby irrevocably and unconditionally guarantee to the Purchaser as primary obligor full, prompt and complete performance by the Seller of its obligations hereunder.

ACX Technologies, Inc.

By: Jill B.W. Sisson
Name: Jill B.W. Sisson
Title: Secretary

SCHEDULE A

PATENTS AND PATENT APPLICATIONS

PATENT NO.	S.R. MATTER NO.	STATUS ¹	COUNTRY	APPL. NO.	APPLICATION DATE	ISSUE DATE	TITLE	INVENTORS (U.S. CASES ONLY)
	4070-67-PAU	A	AUSAL	32353/95	08/14/1995		Integrated Process for the Manufacture of Lactide	
549698	4042-7-1EPAT	A	AUSTR	91917419.3	09/18/1991	11/09/1994	Catalytic Production of Lactide Directly from Lactic Acid	
0632807	4042-11-1-1	I	BELGM	93907579.2	03/17/1993	08/19/1998	Process for the Production of Cyclic Esters	
549698	4042-7-1EPBE	A	BELGM	91917419.3	09/18/1991	11/09/1994	Catalytic Production of Lactide Directly from Lactic Acid	
552226	4042-8-1EPBE	A	BELGM	91917931.7	09/18/1991	07/27/1994	Lactide Production From Dehydration of Aqueous Lactic Acid Feed	
0428620	4070-64-EPBE	I	BELGM	89910376.6	08/04/1989	03/03/1999	Degradable Thermoplastic From Lactides	
0777664	4070-67-EPBE	P	BELGM	95928694.9	08/14/1995	02/24/1999	Integrated Process for the Manufacture of Lactide	
	4042-11-1-1B	P	BRAZL	PI9306101	03/17/1993		Process for the Production of Cyclic Esters	
	4042-36-2PBR	A	BRAZL	PI9604801	04/01/1996		Method to Produce and Purify Cyclic Esters	
	4042-36-PBR	P	BRAZL	PI9407655	09/13/1994		Method to Produce Cyclic Esters	
	4042-64-10BR	A	BRAZL	PI8901255	03/20/1989		Atmospheric Pressure Process for Preparing Cyclic Esters	
	4042-7-1-BR	A	BRAZL	PI9106854	09/18/1991		Catalytic Production of Lactide Directly From Lactic Acid	

¹ A = Abandoned; I = Issued; P = Pending; E = Expired
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PATENT NO.	S.R. MATTER NO.	STATUS'	COUNTRY	APPL. NO.	APPLICATION DATE	ISSUE DATE	TITLE	INVENTORS (U.S. CASES ONLY)
	4042-8-1-BR	A	BRAZL	PI9106855	09/18/1991		Lactide Production From Dehydration of Aqueous Lactic Acid Feed	
	4070-30-PBR	A	BRAZL	PI9007686	09/05/1990		Yttrium and Rare Earth Compound Catalyzed Lactone Polymerization	
	4070-44-P-BR	A	BRAZL	PI9106821	09/04/1991		Packaging Thermoplastics From Lactic Acid	
PI8907604	4070-64-PBR	A	BRAZL	PI8907604	08/04/1989	06/24/1997	Degradable Thermoplastic From Lactides	
	4070-65-1PBR	A	BRAZL	PI9608074	04/01/1996		Method to Produce and Purify Cyclic Esters	
	4070-67-PBR	A	BRAZL	PI9508618	08/14/1995		Integrated Process for the Manufacture of Lactide	
	4042-11-1-1C	P	CANAD	2132843	03/17/1993		Process for the Production of Cyclic Esters	
	4042-36-PCA	P	CANAD	2172798	09/13/1994		Method to Produce Cyclic Esters	
1281729	4042-64-10CA	I	CANAD	592471	03/01/1989	03/19/1991	Atmospheric Pressure Process for Preparation of Cyclic Esters	
	4042-64-16CA	A	CANAD	2093354	10/15/1991		Solvent Scrubbing Recovery of Cyclic Esters	
	4042-64-28CA	A	CANAD	2113799	07/23/1992		Thin Film Depolymerization to Dimeric Cyclic Esters	
	4042-64-35CA	A	CANAD	2131788	03/15/1993		Solventless Dimeric Cyclic Ester Distillation Process	
	4042-64-36CA	P	CANAD	2115472	02/11/1994		Melt Crystallization of Lactides	
	4042-64-40CA	P	CANAD	2104478	02/21/1992		Process for the Preparation of 1,4-Dioxane-Dioxane-2,5-Diones	
	4042-7-1-CA	P	CANAD	2091689	09/18/1991		Catalytic Production of Lactide Directly from Lactic Acid	

PATENT

REEL: 019872 FRAME: 0543

PATENT NO.	S.R. MATTER NO.	STATUS'	COUNTRY	APPL. NO.	APPLICATION DATE	ISSUE DATE	TITLE	INVENTORS (U.S. CASES ONLY)
	4042-8-1-CA	A	CANAD	2091691	09/18/1991		Lactide Production From Dehydration of Aqueous Lactic Acid Feed	
	4070-1-CA	A	CANAD	2128581	07/21/1994		Stabilization of Poly(Hydroxy Acid)s	
	4070-15-CA	A	CANAD	2098220	06/11/1993		Recovery of Hydroxy Acids From Trash	
	4070-19-PCA	A	CANAD	2155862	02/16/1993		Star-Shaped Hydroxyacid Polymers	
	4070-2-PCA	A	CANAD	forthcomin	03/13/1995		Easily Degradable Star-Block Copolymers	
	4070-24-CA	A	CANAD	2155678	02/16/1993		Alternating (ABA)n Polylactic Block Copolymers	
	4070-30-PCA	A	CANAD	2066029-5	09/05/1990		Yttrium and Rare Earth Compounds Catalyzed Lactone Production	
1292818	4070-32-CA	A	CANAD	554345	12/15/1987	12/03/1991	Poly lactide Compositions	
	4070-36-CA	A	CANAD				Rapidly Degradable Poly (Hydroxy Acid)	
	4070-40-CA	A	CANAD	2113939	01/21/1994		Continuous Poly(Hydroxy Acid) Polymerization Using a Counter Current Impeller Mixing System	
	4070-41-PCA	A	CANAD	2090977	09/09/1991		Films Containing Polyhydroxy Acids	
	4070-42-PCA	A	CANAD	2153998	01/21/1994		Metalized Poly(Lactic Acid) Films	
	4070-44-P-CA	A	CANAD	2091185	09/04/1991		Packaging Thermoplastics from Lactic Acid	
	4070-45-PCA	A	CANAD	2142631	09/15/1993		Degradable Polymer Composition	
	4070-46-PCA	A	CANAD	2144310	09/15/1993		Degradation Control of Environmentally Degradable Disposable Materials	

PATENT NO.	S.R. MATTER NO.	STATUS ¹	COUNTRY	APPL. NO.	APPLICATION DATE	ISSUE DATE	TITLE	INVENTORS (U.S. CASES ONLY)
	4070-48-PCA	A	CANAD	2173114	09/14/1994		Degradable Polydioxaneone-Based Materials	
1339026	4070-64-CA	I	CANAD	607548	08/04/1989	03/25/1997	Degradable Thermoplastic From Lactides	
	4070-67-PCA	P	CANAD	2197644	08/14/1995		Integrated Process for the Manufacture of Lactide	
	4070-69-CA	A	CANAD	2091186	09/09/1991		Fluidized Bed Ring-Opening Polymerization	
	4070-8-PCA	A	CANAD	2115546	08/12/1992		Degradable Repellant Coated Articles	
	4070-9-PCA	A	CANAD	2125646	12/30/1992		Rare Earth Metal Coordination Compounds as Lactone Polymerization Catalysts	
	4070-64-CL	A	CHILE	760/89	10/04/1989		Degradable Thermoplastic From Lactides	
	4042-11-1-CN	A	CHINA	93104488.X	03/19/1993		Process for the Production of Cyclic Esters	
	4042-36-2PCN	A	CHINA	96194422.6	04/01/1996		Method to Produce and Purify Cyclic Cyclic Esters	
	4042-36-PCN	A	CHINA	94194326.7	09/13/1994		Method to Produce Cyclic Esters	
	4042-64-10CN	A	CHINA	89102086.1	04/04/1989		Atmospheric Pressure Process for Preparing Cyclic Esters	
	4042-7B	A	CHINA	91108486.X	09/18/1991		Catalytic Production of Lactide Directly from Lactic Acid	
	4042-8B	A	CHINA	91108029.5	09/18/1991		Lactide Production From Dehydration of Aqueous Lactic Acid Feed	
	4070-2-PCN	A	CHINA	95192679.9	03/13/1995		Easily Degradable Star-Block Copolymers	
	4070-44-CN	A	CHINA	91109785.6	09/06/1991		Packaging Thermoplastics From Lactic Acid	

PATENT NO.	S.R. MATTER NO.	STATUS ¹	COUNTRY	APPL. NO.	APPLICATION DATE	ISSUE DATE	TITLE	INVENTORS (U.S. CASES ONLY)
35157	4070-64-CN	A	CHINA	89107233.0	09/11/1989	09/21/1996	Degradable Thermoplastic From Lactides	
	4070-64-CN-1	A	CHINA	96104122.6	09/11/1989		Degradable Thermoplastic From Lactides	
	4070-65-1PCN	A	CHINA	96194404.8	04/01/1996		Method to Produce and Purify Cyclic Esters	
	4070-64-CO	A	COLMB	23949	10/31/1989	08/21/1992	Degradable Thermoplastic From Lactides	
23949	4070-64-CO	A	COLMB	312313	10/31/1989	08/21/1992	Degradable Thermoplastic From Lactides	
	4070-64-CZ	A	CZECH	477789	08/11/1989		Degradable Thermoplastic From Lactides	
549698	4042-7-1EPDK	A	DENMR	91917419.3	09/18/1991	11/09/1994	Catalytic Production of Lactide Directly from Lactic Acid	
552226	4042-8-1EPDK	A	DENMR	91917931.7	09/18/1991	07/27/1994	Lactide Production From Dehydration of Aqueous Lactic Acid Feed	
	4070-64-P-DK	A	DENMR	0503/91	08/04/1989		Degradable Thermoplastics From Lactides	
0632807	4042-11-1-1E	I	EPO	93907579.2	03/17/1993	08/19/1998	Process for the Production of Cyclic Esters	
	4042-36-2PEP	A	EPO	forthcomin	04/01/1996		Method to Produce and Purify Cyclic Esters	
	4042-36-PEP	P	EPO	94928095.2	09/13/1994		Method to Produce Cyclic Esters	
0385000	4042-64-10EP	A	EPO	89301958.8	02/28/1989	09/05/1990	Atmospheric Pressure Process for Preparation of Cyclic Esters	
	4042-64-13EP	A	EPO	91913421.3	06/21/1991		High Yield Recycle Process for Lactide	
0531462	4042-64-14EP	I	EPO	91921000.5	04/29/1991	04/09/1997	Process for the Purification of Cyclic Esters	
0531458	4042-64-15EP	A	EPO	91920939.5	04/30/1991	08/13/1997	One-Step Continuous Process for Preparing Cyclic Esters	

PATENT NO.	S.R. MATTER NO.	STATUS ¹	COUNTRY	APPL. NO.	APPLICATION DATE	ISSUE DATE	TITLE	INVENTORS (U.S. CASES ONLY)
	4042-64-16EP	A	EPO	92900986.8	10/15/1991		Solvent Scrubbing Recovery of Cyclic Esters	
	4042-64-19EP	A	EPO	91912657.3	06/07/1991		Continuous Catalyzed Vapor Phase Dimeric Cyclic Ester Process	
	4042-64-23EP	A	EPO	91916712.2	09/09/1991		Films Containing Polyhydroxy Acids and a Compatibilizer	
	4042-64-28EP	A	EPO	92915974.7	07/23/1992		Thin Film Depolymerization To Dimeric Cyclic Esters	
630371	4042-64-35EP	A	EPO	93907478.7	03/15/1993	03/13/1996	Solventless Dimeric Cyclic Ester Distillation Process	
549698	4042-7-1-EP	I	EPO	91917419.3	09/18/1991	11/09/1994	Catalytic Production of Lactide Directly from Lactic Acid	
552226	4042-8-1-EP	A	EPO	91917931.7	09/18/1991	07/27/1994	Lactide Production From Dehydration of Aqueous Lactic Acid Feed	
	4070-15-EP	A	EPO	93109098.9	06/07/1993		Recovery of Hydroxy Acids From Trash	
0684962	4070-19-PEP	I	EPO	93905993.7	02/16/1993	10/14/1998	Star-Shaped Hydroxyacid Polymers	
	4070-2-PEP	P	EPO	95912859.6	03/13/1995		Easily Degradable Star-Block Copolymers	
0684961	4070-24-PEP	I	EPO	93905994.5	02/16/1993	11/11/1998	Alternating (ABA) _N Poly(lactic Block Copolymers	
	4070-29-EP	P	EPO	91913883.4	06/25/1991		Polyhydroxy Acid Films	
0493529	4070-30-PEP	A	EPO	90916131.7	09/05/1990	07/05/1995	Yttrium and Rare Earth Compounds Catalyzed Lactone Production	
	4070-32-EP	A	EPO	87311239.5	12/21/1987		Poly(lactide Compositions	
0438426	4070-32-PEP	A	EPO	89910762.7	09/13/1989	11/18/1993	Poly(lactide Compositions	
	4070-39-1PEP	A	EPO	95930927.9	08/28/1995		Composition and Method for Packaging Moisture Containing Foodstuffs	

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PATENT

REEL: 019872 FRAME: 0547

PATENT NO.	S.R. MATTER NO.	STATUS'	COUNTRY	APPL. NO.	APPLICATION DATE	ISSUE DATE	TITLE	INVENTORS (U.S. CASES ONLY)
548225	4070-41-PEP	I	EPO	91916923.5	09/09/1991	10/25/1995	Heat Shrinkable Films Containing Polyhydroxy Acids	
680522	4070-42-PEP	I	EPO	94907862.0	01/21/1994	10/02/1996	Metalized Poly(Lactic Acid) Films	
	4070-44-P-EP	A	EPO	91919263.3	09/04/1991		Packaging Thermoplastics from Lactic Acid	
	4070-45-PEP	P	EPO	93922208.9	09/15/1993		Degradable Polymer Composition	
	4070-46-PEP	A	EPO	93921600.8	09/15/1993		Degradation Control of Environmentally Degradable Disposable Materials	
	4070-48-PEP	P	EPO	94929219.7	09/14/1994		Degradable Polydioxaneone-Based Materials	
0428620	4070-64-PEP	I	EPO	89910376.6	08/04/1989	03/03/1999	Degradable Thermoplastic From Lactides	
	4070-65-1PEP	A	EPO	forthcomin	04/01/1996		Method to Produce and Purify Cyclic Esters	
0777664	4070-67-PEP	I	EPO	95928694.9	08/14/1995	02/24/1999	Integrated Process for the Manufacture of Lactide	
	4070-68-PEP	A	EPO	91911836.4	06/21/1991		Degradable Foam Materials	
0627453	4070-6EP	A	EPO	94303291.2	05/06/1994	02/04/1998	Method for Making Polymers of Alpha-Hydroxy Acids	
	4070-8-PEP	A	EPO	92917795.4	08/12/1992		Degradable Repellant Coated Articles	
0619833	4070-9-PEP	A	EPO	93902827.0	12/30/1992	07/12/1995	Rare Earth Metal Coordination Compounds as Lactone Polymerization Catalysts	
	4042-11-1-1F	P	FINLN	944275	03/17/1993		Process for the Production of Cyclic Esters	
	4042-36-PFI	A	FINLN	961402	09/13/1994		Method to Produce Cyclic Esters	

PATENT

REEL: 019872 FRAME: 0548

PATENT NO.	S.R. MATTER NO.	STATUS'	COUNTRY	APPL. NO.	APPLICATION DATE	ISSUE DATE	TITLE	INVENTORS (U.S. CASES ONLY)
95696	4042-7-1-FI	A	FINLN	931184	09/18/1991	03/11/1996	Catalytic Production of Lactide Directly from Lactic Acid	
95697	4042-8-1-FI	A	FINLN	931185	09/18/1991	03/11/1996	Lactide Production From Dehydration of Aqueous Lactic Acid Feed	
	4070-19-PFI	A	FINLN	953853	02/16/1993		Star-Shaped Hydroxyacid Polymers	
	4070-2-PFI	A	FINLN	964217	03/13/1995		Easily Degradable Star-Block Copolymers	
	4070-24-PFI	A	FINLN	95/003852	02/16/1993		Alternating (ABA) _n Poly(lactic Block Copolymers	
	4070-30-PFI	A	FINLN	921351	09/05/1990		Yttrium and Rare Earth Compound Catalyzed Lactone Production	
	4070-44-P-FI	A	FINLN	930992	09/04/1991		Packaging Thermoplastics From Lactic Acid	
	4070-64-P-FI	A	FINLN	910611	08/04/1989		Degradable Thermoplastic From Lactides	
0632807	4042-11-1-1	I	FRANC	93907579.2	03/17/1993	08/19/1998	Process for the Production of Cyclic Esters	
0385000	4042-64-10FR	A	FRANC	89301958.8	02/28/1989	09/05/1990	Atmospheric Pressure Process for Preparation of Cyclic Esters	
0531462	4042-64-14FR	A	FRANC	91921000.5	04/29/1991	04/09/1997	Process for the Purification of Cyclic Esters	
0531458	4042-64-15FR	A	FRANC	91920939.5	04/30/1991	08/13/1997	One-Step Continuous Process for Preparing Cyclic Esters	
630371	4042-64-35FR	A	FRANC	93707478.7	03/15/1993	03/13/1996	Solventless Dimeric Cyclic Ester Distillation Process	
94 01754	4042-64-36FR	I	FRANC	94 01754	02/16/1994	10/13/1995	Melt Crystallization Purification of Lactides	
549698	4042-7-1EPFR	I	FRANC	91917419.3	09/18/1991	11/09/1994	Catalytic Production of Lactide Directly from Lactic Acid	

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552226	4042-8-1EPFR	A	FRANC	91917931.7	09/18/1991	07/27/1994	Lactide Production From Dehydration of Aqueous Lactic Acid Feed	
2709130	4070-1-FR	I	FRANC	94 09899	08/10/1994	05/23/1997	Stabilization of Poly(Hydroxy Acid)s	
0684962	4070-19-EPFR	I	FRANC	93905993.7	02/16/1993	10/14/1998	Star-Shaped Hydroxyacid Polymers	
0684961	4070-24-EPFR	I	FRANC	93905994.5	02/16/1993	11/11/1998	Alternating (ABA) _N Polylactic Block Copolymers	
0493529	4070-30-EPFR	A	FRANC	90916131.7	09/05/1990	07/05/1995	Yttrium and Rare Earth Compounds Catalyzed Lactone Polymerization	
94 00538	4070-40-FR	A	FRANC	94 00538	01/19/1994	12/27/1996	Continuous Poly(Hydroxy Acid) Polymerization Using a Counter Current Impeller Mixing System	
548225	4070-41-EPFR	I	FRANC	91916923.5	09/09/1991	10/25/1995	Heat Shrinkable Films Containing Polyhydroxy Acids	
680522	4070-42-EPFR	I	FRANC	94907862.0	01/21/1994	10/02/1996	Metalized Poly(Lactic Acid) Films	
0627453	4070-6-EPFR	A	FRANC	94303291.2	05/06/1994	02/04/1998	Method for Making Polymers of Alpha-Hydroxy Acids	
0428620	4070-64-EPFR	I	FRANC	89910376.6	08/04/1989	03/03/1999	Degradable Thermoplastic From Lactides	
0777664	4070-67-EPFR	I	FRANC	95928694.9	08/14/1995	02/24/1999	Integrated Process for the Manufacture of Lactide	
0619833	4070-9-EPFR	A	FRANC	93902827.0	12/30/1992	07/12/1995	Rare Earth Metal Coordination Compounds as Lactone Polymerization Catalysts	
	4070-64-DE	A	GEREA	3319996	08/22/1989		Degradable Thermoplastic From Lactides	
0632807	4042-11-1-1	I	GERWE	DE6932046 7	03/17/1993	08/19/1998	Process for the Production of Cyclic Esters	

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DE6892073 2	4042-64-10DE	A	GERWE	89301958.8	02/28/1989	09/05/1990	Atmospheric Pressure Process for Preparation of Cyclic Esters	
69125606.3	4042-64-14DE	A	GERWE	91921000.5	04/29/1991	04/09/1997	Process for the Purification of Cyclic Esters	
6912560 6.3	4042-64-15DE	A	GERWE	91920939.5	04/30/1991	08/13/1997	One-Step Continuous Process for Preparing Cyclic Esters	
DE6930181 7	4042-64-35DE	A	GERWE	93907478.7	03/15/1993	03/13/1996	Solventless Dimeric Cyclic Ester Distillation Process	
DE4494838	4042-64-36DE	I	GERWE	P4404838.6	02/16/1994	10/27/1994	Melt Crystallization Purification of Lactides	
P69105144	4042-7-1EPDE	I	GERWE	91917419.3	09/18/1991	11/09/1994	Catalytic Production of Lactide Directly from Lactic Acid	
P69103159	4042-8-1EPDE	A	GERWE	91917931.7	09/18/1994	07/27/1994	Lactide Production From Dehydration of Aqueous Lactic Acid Feed	
	4070-1-DE	P	GERWE	P4428819.0	08/13/1994		Stabilization of Poly(Hydroxy Acid)s	
69321612.3	4070-19-EPDE	I	GERWE	93905993.7	02/16/1993	10/14/1998	Star-Shaped Hydroxyacid Polymers	
DE6932209 9	4070-24-EPDE	I	GERWE	93905994.5	02/16/1993	11/11/1998	Alternating (ABA)N Polylactide Block Copolymers	
298247	4070-30-DE	A	GERWE	344273.2	09/29/1990	02/13/1992	Yttrium and Rare Earth Compound Catalyzed Lactone Polymerization	
DE6902073 9	4070-30-EPDE	A	GERWE	90916131.7	09/05/1990	07/05/1995	Yttrium and Rare Earth Compounds Catalyzed Lactone Polymerization	
68910833.8	4070-32-EPDE	I	GERWE	89910762.7	09/13/1989	11/18/1993	Poly lactide Compositions	
	4070-39-EPDE	A	GERWE	19506395.3	02/24/1994		Composition and Method for Packaging Moisture-Containing Foodstuffs	

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	4070-40-DE	A	GERWE	P4401424.4	01/19/1994		Continuous Poly(Hydroxy Acid) Polymerization Using a Counter Current Impeller Mixing System	
P69114140	4070-41-EPDE	I	GERWE	91916923.5	09/09/1991	10/25/1995	Heat Shrinkable Films Containing Polyhydroxy Acids	
69400638.6	4070-42-EPDE	I	GERWE	94907862.0	01/21/1994	10/02/1996	Metalized Poly(Lactic Acid) Films	
0627453	4070-6-EPDE	A	GERWE	94303291.2	05/06/1994	02/04/1998	Method for Making Polymers of Alpha-Hydroxy Acids	
68928938.3	4070-64-EPDE	I	GERWE	89910376.6	08/04/1989	03/03/1999	Degradable Thermoplastic From Lactides	
DE6950795 7	4070-67-EPDE	I	GERWE	95928694.9	08/14/1995	02/24/1999	Integrated Process for the Manufacture of Lactide	
DE6920346 2	4070-9-EPDE	A	GERWE	93902827.0	12/30/1992	07/12/1995	Rare Earth Metal Coordination Compounds as Lactone Polymerization Compounds	
	4070-64-GR	A	GREEC	890100509	08/16/1989		Degradable Thermoplastic From Lactides	
0531462	4042-64-14NL	A	HOLLN	91921000.5	04/29/1991	04/09/1997	Process for the Purification of Cyclic Esters	
0531458	4042-64-15NL	A	HOLLN	91920939.5	04/30/1991	08/13/1997	One-Step Continuous Process for Preparing Cyclic Esters	
549698	4042-7-1EPNL	I	HOLLN	91917419.3	09/18/1991	11/09/1994	Catalytic Production of Lactide Directly from Lactic Acid	
552226	4042-8-1EPNL	A	HOLLN	91917931.7	09/18/1991	07/27/1994	Lactide Production From Dehydration of Aqueous Lactic Acid Feed	
0777664	4070-67-EPNL	I	HOLLN	95928694.9	08/14/1995	02/24/1999	Integrated Process for the Manufacture of Lactide	

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1756	4042-7-1EPHK	I	HONKN	91917419.3	09/18/1991	11/09/1994	Catalytic Production of Lactide Directly from Lactic Acid	
552226	4042-8-1EPHK	I	HONKN	91917931.7	09/18/1991	07/27/1994	Lactide Production From Dehydration of Aqueous Lactic Acid Feed	
	4070-64-P-HU	A	HUNGR	5791/89	08/04/1989		Degradable Thermoplastic From Lactides	
	4042-11-1-IN	A	INDIA	159DEL/93	02/19/1993		Method to Produce Cyclic Esters	
	4042-36-IN	P	INDIA	1148/94	09/15/1994		Method to Produce Cyclic Esters	
	4042-7D	A	INDIA	705/MAS/91	09/18/1991		Catalytic Production of Lactide Directly from Lactic Acid	
	4042-8D	A	INDIA	706/MAS/91	09/18/1991		Lactide Production From Dehydration of Aqueous Lactic Acid Feed	
	4070-44-IN	A	INDIA	682/MAS/91	09/10/1991		Packaging Thermoplastics From Lactic Acid	
	4070-48-IN	A	INDIA	1132/94	09/08/1994		Degradable Polydioxaneone-Based Materials	
	4070-64-IN	A	INDIA	610/MAS/89	08/16/1989		Degradable Thermoplastic From Lactides	
	4070-65-1-IN	P	INDIA	1892/Del/9	10/17/1995		Method to Produce and Purify Cyclic Esters	
63141	4042-7E	A	IRELN	3273/91	09/17/1991	09/17/1991	Catalytic Production of Lactide Directly from Lactic Acid	
62721	4042-8E	A	IRELN	3272/91	09/17/1991	03/23/1995	Lactide Production From Dehydration of Aqueous Lactic Acid Feed	
	4070-64-IE	A	IRELN	254489	08/08/1989		Degradable Thermoplastic From Lactides	
	4042-11-1-IL	A	ISREA	104765	02/17/1993		Production of Cyclic Esters From Hydroxy Acids	

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	4042-64-10IL	A	ISREA	89497	03/06/1989		Atmospheric Pressure Process for Preparing Cyclic Esters	
	4042-7F	A	ISREA	99520	09/19/1991		Catalytic Production of Lactide Directly from Lactic Acid	
	4042-8F	A	ISREA	99519	09/19/1991		Lactide Production From Dehydration of Aqueous Lactic Acid Feed	
	4070-64-1L	A	ISREA	91253	08/08/1989		Degradable Thermoplastic From Lactides	
0549698	4042-7-1EPIT	I	ITALY	29923/94	09/18/1991	11/09/1994	Catalytic Production of Lactide from Lactic Acid	
26663/BE	4042-8-1EPIT	A	ITALY	91917931.7	09/18/1991	07/27/1994	Lactide Production From Dehydration of Aqueous Lactic Acid Feed	
2922303	4042-11-1-1D	I	JAPAN	5-516722	03/17/1993	05/30/1999	Process for the Production of Cyclic Esters	
	4042-36-2PJP	P	JAPAN	08-530411	04/01/1996		Method to Produce and Purify Cyclic Esters	
	4042-36-PJP	P	JAPAN	07-510327	09/13/1994		Method to Produce Cyclic Esters	
	4042-64-10JP	A	JAPAN	70270/89	03/22/1989		Atmospheric Pressure Process for Preparing Cyclic Esters	
2744696	4042-64-13JP	I	JAPAN	512609/91	06/21/1991	02/06/1998	High Yield Recycle Process for Lactide	
	4042-64-14JP	A	JAPAN	508675/91	04/29/1991		Process for the Purification of Cyclic Esters	
	4042-64-15JP	A	JAPAN	508678/91	04/30/1991		Improved Process for the Rapid Production of Cyclic Esters	
	4042-64-16JP	A	JAPAN	500661/92	10/15/1991		Solvent Scrubbing Recovery of Cyclic Esters	
	4042-64-19JP	A	JAPAN	511748/91	06/07/1991		Continuous Catalyzed Vapor Phase Dimeric Cyclic Ester Process	

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	4042-64-20JP	A	JAPAN	512608/91	06/21/1991		Electrostatic Dry Toners Containing Degradable Resins	
	4042-64-23JP	A	JAPAN	unknown	09/09/1991		Films Containing Polyhydroxy Acids and a Compatibilizer	
	4042-64-28JP	P	JAPAN	502988/93	07/23/1992		Thin Film Depolymerization to Dimeric Cyclic Esters	
	4042-64-35JP	A	JAPAN	516033/93	03/15/1993		Solventless Dimeric Cyclic Ester Distillation Process	
2880063	4042-64-36JP	I	JAPAN	20338/1994	02/17/1994	01/29/1999	Melt Crystallization Purification of Lactides	
	4042-7-1-JP	P	JAPAN	03-516063	09/18/1991		Catalytic Production of Lactide Directly from Lactic Acid	
	4042-8-1-JP	A	JAPAN	03-516738	09/18/1991		Lactide Production From Dehydration of Aqueous Lactic Acid Feed	
2714538	4070-1-JP	I	JAPAN	195161/94	08/19/1994	10/31/1997	Stabilization of Poly(Hydroxy Acid)s	
	4070-15-JP	A	JAPAN	143107/93	06/15/1993		Recovery of Hydroxy Acids From Trash	
2984373	4070-19-PJP	I	JAPAN	518908/94	02/16/1993	09/24/1999	Star-Shaped Hydroxyacid Polymers and Process	
	4070-2-PJP	P	JAPAN	527629/95	03/13/1995		Easily Degradable Star-Block Copolymers	
2984374	4070-24-PJP	I	JAPAN	94/518909	02/16/1993	09/24/1999	Alternating (ABA) _n Polylactic Block Copolymers	
2945758	4070-29-PJP	I	JAPAN	91/512895	06/25/1991	06/25/1999	Polyhydroxy Acid Films	
2858947	4070-30-PJP	I	JAPAN	514939/90	09/05/1990	12/04/1998	Yttrium and Rare Earth Compounds Catalyzed Lactone Polymerization	
	4070-32-JP	A	JAPAN	319086/87	12/22/1986		Poly(lactide Compositions	
	4070-32-PJP	A	JAPAN	510110/89	09/13/1989		Poly(lactide Compositions	

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	4070-39-PJP	A	JAPAN	35117/95	02/24/1994		Composition and Method for Packaging Moisture Containing Foodstuffs	
	4070-40-JP	A	JAPAN	4612/94	01/20/1994		Continuous Poly(Hydroxy Acid) Polymerization Using a Counter Current Impeller Mixing System	
	4070-41-PJP	P	JAPAN	515884/91	09/09/1991		Films Containing Polyhydroxy Acids	
2635218	4070-42-PJP	I	JAPAN	517226/94	01/21/1994		Metalized Poly(Lactic Acid) Films	
	4070-44-P-JP	A	JAPAN	03-516685	09/04/1991		Packaging Thermoplastics From Lactic Acid	
	4070-45-PJP	P	JAPAN	06-508289	09/15/1993		Degradable Polymer Composition	
	4070-48-PJP	P	JAPAN	07-510334	09/14/1994		Degradable Polydioxaneone-Based Materials	
2725870	4070-64-PJP	I	JAPAN	509669/89	08/04/1989	12/05/1997	Degradable Thermoplastic from Lactides	
	4070-65-1PJP	P	JAPAN	08-530412	04/01/1996		Method to Produce and Purify Cyclic Esters	
	4070-67-PJP	P	JAPAN	08-508081	08/14/1995		Integrated Process for the Manufacture of Lactide	
	4070-68-PJP	A	JAPAN	511016/91	06/21/1991		Degradable Form Materials	
	4070-6JP	A	JAPAN	94507/97	05/06/1994		Method for Making Polymers of Alpha-Hydroxy Acids	
	4070-71-PJP	A	JAPAN	512887/91	06/18/1991		Degradable Resins For Electrostatic Liquid Developers	
	4070-8-PJP	P	JAPAN	504327/93	08/12/1992		Degradable Repellant Coated Articles	
	4070-9-PJP	A	JAPAN	511947/93	12/30/1992		Rare Earth Metal Coordination Compounds as Lactone Polymerization Catalysts	

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	4042-11-1-G	A	KORSO	94-703230	03/17/1993		Process for the Production of Cyclic Esters	
171431	4042-7-1-KR	I	KORSO	93-700791	09/18/1991	10/20/1998	Catalytic Production of Lactide Directly from Lactic Acid	
171432	4042-8-1-KR	I	KORSO	93-700809	09/18/1991	10/20/1998	Lactide Production From Dehydration of Aqueous Lactic Acid Feed	
	4070-30-PKR	A	KORSO	700686/92	09/05/1990		Yttrium and Rare Earth Compound Catalyzed Lactone Polymerization	
	4070-44-P-KR	A	KORSO	93-700677	09/04/1991		Packaging Thermoplastics From Lactic Acid	
	4070-64-PKR	A	KORSO	700727	08/04/1989		Degradable Thermoplastic From Lactides	
	4070-65-PKR	A	KORSO	96-701581	09/13/1994		Method to Produce Cyclic Esters	
	4042-36-MY	P	MALAS	PI9402566	09/27/1994		Method to Produce Cyclic Esters	
	4070-48-MY	A	MALAS	PI9402567	09/27/1994		Degradable Polydioxaneone-Based Materials	
	4042-11-1-MY	P	MALAY	PI9300472	03/17/1993		Process for the Production of Cyclic Esters	
MY106760-A	4042-7G	A	MALAY	PI9101694	09/18/1991	07/31/1995	Catalytic Production of Lactide Directly from Lactic Acid	
	4042-8G	A	MALAY	PI9101692	09/18/1991		Lactide Production from Dehydration of Aqueous Lactic Acid Feed	
	4070-44-MY	A	MALAY	PI9101616	09/06/1991		Packaging Thermoplastics From Lactic Acid	
	4070-64-MY	A	MALAY	PI8901242	09/11/1989		Degradable Thermoplastic From Lactides	
183291	4042-11-1-MX	I	MEXIC	9301558	03/19/1993	11/18/1996	Process for the Production of Cyclic Esters	

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	4042-36-MX	A	MEXIC	947484	09/28/1994		Method to Produce Cyclic Esters	
	4042-64-10MX	A	MEXIC	15283	03/15/1989		Atmospheric Pressure Process for Preparing Cyclic Esters	
179297	4042-7H	I	MEXIC	9101130	09/18/1991	08/25/1995	Method for Making Lactide From Lactic Acid	
178125	4042-8H	I	MEXIC	9101131	09/18/1991	05/24/1995	Lactide Production From Dehydration of Aqueous Lactic Acid Feed	
	4070-2-PMX	P	MEXIC	964958	03/13/1995		Easily Degradable Star-Block Copolymers	
	4070-30-MX	A	MEXIC	22628	09/28/1990		Yttrium and Rare Earth Compound Catalyzed Lactone Polymerization	
	4070-44-MX	A	MEXIC	9100986	09/06/1991		Packaging Thermoplastics From Lactic Acid	
	4070-45-PMX	P	MEXIC	935815	09/22/1993		Degradable Polymer Composition	
	4070-46-MX	A	MEXIC	935814	09/22/1993		Degradation Control of Environmentally Degradable Disposable Materials	
	4070-48-MX	P	MEXIC	947485	09/28/1994		Degradable Polydioxaneone-Based Materials	
170287	4070-64-MX	I	MEXIC	17288	08/23/1989	08/13/1993	Degradable Thermoplastic From Lactides	
251210	4042-11-1-1H	I	NEWZL	251210	03/17/1993	02/04/1997	Process for the Production of Cyclic Esters	
238006	4042-64-15NZ	A	NEWZL	238006	05/01/1991	05/01/1991	One-Step Continuous Process for Preparing Cyclic Esters	
	4042-64-16NZ	A	NEWZL	240299	10/21/1991		Solvent Scrubbing Recovery of Cyclic Esters	

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239825	4042-7I	A	NEWZL	239825	09/17/1991	04/05/1994	Catalytic Production of Lactide Directly from Lactic Acid	
239824	4042-8I	A	NEWZL	239824	09/17/1991	09/17/1991	Lactide Production From Dehydration of Aqueous Lactic Acid Feed	
	4070-30-NZ	A	NEWZL	235503	09/28/1990		Yttrium and Rare Earth Compound Catalyzed Lactone Polymerization	
	4070-44-NZ	A	NEWZL	239678	09/05/1991		Packaging Thermoplastics From Lactic Acid	
	4070-64-NZ	A	NEWZL	230246	08/08/1989		Bio-Degradable Lactides	
	4042-11-1-II	A	NORWA	94.3464	03/17/1993		Process for the Production of Cyclic Esters	
	4070-30-PNO	A	NORWA	921190	09/05/1990		Yttrium and Rare Earth Compound Catalyzed Lactone Polymerization	
	4070-64-P-NO	A	NORWA	91/0471	08/04/1989		Degradable Thermoplastics From Lactides	
	4070-64-PK	A	PAKST	332/89	08/16/1989		Degradable Thermoplastic From Lactides	
	4042-11-1-I	E	PCT	US93/02483	03/17/1993		Process for the Production of Cyclic Esters	
	4042-36-2PCT	E	PCT	US96/04464	04/01/1996		Method to Produce and Purify Cyclic Esters	
	4042-36-PCT	E	PCT	US94/10286	09/13/1994		Method to Produce Cyclic Esters	
	4042-53-13PC	E	PCT	US91/04243	06/21/1991		High Yield Recycle Process for Lactide	
	4042-64-14PC	E	PCT	US91/02815	04/29/1991		Process for The Purification of Cyclic Esters	
	4042-64-15PC	E	PCT	US91/02835	04/30/1991		One-Step Continuous Process for Preparing Cyclic Esters	
	4042-64-16PC	E	PCT	US91/07354	10/15/1991		Solvent Scrubbing Recovery of Cyclic Esters	

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	4042-64-18PC	E	PCT	US92/04967	06/18/1992		Co-Vaporization Process for Preparing Lactide	
	4042-64-20PC	E	PCT	US91/04242	06/21/1991		Electrostatic Dry Toners Containing Degradable Resins	
	4042-64-25PC	E	PCT	US92/11319	12/30/1992		Solvent Scrubbing Recovery of Lactide	
	4042-64-28PC	E	PCT	US92/06003	07/23/1992		Thin Film Depolymerization to Dimeric Cyclic Esters	
	4042-64-29PC	E	PCT	US93/02300	03/15/1993		Thin Film Oligomerization of Hydroxycarboxylic Acid Compositions	
	4042-64-30PC	E	PCT	US93/02299	03/15/1993		Rare Earth Metal Catalyzed Oligomerization of Alpha-hydroxy Acids and Conversion to Dimeric Cyclic Esters	
	4042-64-32PC	E	PCT	US93/02163	03/10/1993		Continuous Reduced Pressure Dimeric Cyclic Ester Production	
	4042-64-35PC	E	PCT	US93/02298	03/15/1993		Solventless Dimeric Cyclic Ester Distillation Process	
	4042-7-1	E	PCT	US91/06775	09/18/1991		Catalytic Production of Lactide Directly from Lactic Acid	
	4042-8-1	E	PCT	US91/06774	09/18/1991		Lactide Production From Dehydration of Aqueous Lactic Acid Feed	
	4045-23-PCT	E	PCT	US96/09532	06/04/1996		Method and Apparatus for the Recovery and Purification of Organic Acids	
	4070-11-PCT	E	PCT	US93/01383	02/16/1993		L,D-Polylactide Copolymers With Controlled Morphology	
	4070-17-PCT	E	PCT	US92/11308	12/30/1992		Polymerization of Lactide	

PATENT NO.	S.R. MATTER NO.	STATUS ¹	COUNTRY	APPL. NO.	APPLICATION DATE	ISSUE DATE	TITLE	INVENTORS (U.S. CASES ONLY)
	4070-19-PCT	E	PCT	US93/01381	02/16/1993		Star-Shaped Hydroxyacid Polymers	
	4070-2-PCT	E	PCT	US95/03014	03/13/1995		Easily Degradable Star-Block Copolymers	
	4070-24-PCT	E	PCT	US93/01382	02/16/1993		Alternating (ABA) _n Polylactic Block Copolymers	
	4070-29-PCT	E	PCT	US91/04307	06/25/1991		Polyhydroxy Acid Films	
	4070-30-PCT	E	PCT	US90/04951	09/05/1990		Yttrium and Rare Earth Compounds Catalyzed Lactone Polymerization	
	4070-32-PCT	E	PCT	US89/03876	09/13/1989		Poly lactide Compositions	
	4070-37-PCT	E	PCT	US95/14427	11/08/1995		Poly(Lactic Acid) Composition Having Improved Physical Properties	
	4070-39-1PCT	E	PCT	US95/10725	08/28/1995		Composition and Method for Packaging Moisture Containing Foodstuffs	
	4070-41-PCT	E	PCT	US91/06298	09/09/1991		Heat Shrinkable Films Containing Polyhydroxy Acids	
	4070-42-PCT	E	PCT	US94/00794	01/21/1994		Metalized Poly(Lactic Acid) Films	
	4070-44-PCT	E	PCT	US91/06327	09/04/1991		Packaging Thermoplastics from Lactic Acid	
	4070-45-PCT	E	PCT	US93/08719	09/15/1993		Degradable Polymer Composition	
	4070-46-PCT	E	PCT	US93/08717	09/15/1993		Degradation Control for Environmentally Degradable Disposable Materials	
	4070-48-PCT	E	PCT	US94/10426	09/14/1994		Degradable Polydioxaneone-Based Materials	

PATENT NO.	S.R. MATTER NO.	STATUS'	COUNTRY	APPL. NO.	APPLICATION DATE	ISSUE DATE	TITLE	INVENTORS (U.S. CASES ONLY)
	4070-52-PCT	E	PCT	US96/16683	10/18/1996		Method for the Synthesis of Environmentally Degradable Block Copolymers	
	4070-61-PCT	E	PCT	US96/20758	12/19/1996		Method for Determining Degradation of Degradable Materials	
	4070-64-PCT	E	PCT	US89/03380	08/04/1989		Degradable Thermoplastic From Lactides	
	4070-65-1PCT	E	PCT	US96/04465	04/01/1996		Method to Produce and Purify Cyclic Esters	
	4070-67-PCT	E	PCT	US95/09643	08/14/1995		Integrated Process for the Manufacture of Lactide	
	4070-68-PCT	E	PCT	US91/04241	06/21/1991		Degradable Foam Materials	
	4070-69-PCT	E	PCT	US91/06300	09/09/1991		Fluidized Bed Ring-Opening Polymerization	
	4070-71-PCT	E	PCT	US91/04133	06/18/1991		Degradable Resins for Electrostatic Liquid Developers	
	4070-8-PCT	E	PCT	US92/06471	08/12/1992		Degradable Repellant Coated Articles	
	4070-9-PCT	E	PCT	US92/11309	12/30/1992		Rare Earth Metal Coordination Compounds as Lactone Polymerization Catalysts	
29574	4042-11-1-PH	I	PHILP	45798	03/02/1993	04/01/1996	Process for the Production of Cyclic Esters	
	4042-36-PH	A	PHILP	49051	09/13/1994		Method to Produce Cyclic Esters	
28801	4042-7J	I	PHILP	43128	09/18/1991	03/14/1995	Catalytic Production of Lactide Directly from Lactic Acid	
28632	4042-8J	A	PHILP	43127	09/18/1991	11/21/1994	Lactide Production from Dehydration of Aqueous Lactic Acid Feed	
	4070-44-PH	A	PHILP	43064	09/06/1991		Packaging Thermoplastics From Lactic Acid	

PATENT NO.	S.R. MATTER NO.	STATUS'	COUNTRY	APPL. NO.	APPLICATION DATE	ISSUE DATE	TITLE	INVENTORS (U.S. CASES ONLY)
	4070-48-PH	A	PHILP	49052	09/23/1994		Degradable Polydioxaneone-Based Materials	
	4070-64-PH	A	PHILP	39109	08/17/1989		Degradable Thermoplastic From Lactides	
166942	4042-64-14PL	A	POLND	P-296950	04/22/1991	11/07/1994	Purification of Cyclic Esters	
	4042-7-1-PL	A	POLND	P298521	09/18/1991		Catalytic Production of Lactide Directly from Lactic Acid	
	4042-8-1-PL	A	POLND	P298520	09/18/1991		Lactide Production From Dehydration of Aqueous Lactic Acid Feed	
	4070-44-P-PL	A	POLND	P298222	09/04/1991		Packaging Thermoplastics from Lactic Acid	
	4070-64-PL	A	POLND	P281508	09/20/1989		Degradable Thermoplastic From Lactides	
	4042-7K	A	PORTG	98999	09/18/1991		Catalytic Production of Lactide Directly from Lactic Acid	
	4042-8K	A	PORTG	98998	09/18/1991		Lactide Production From Dehydration of Aqueous Lactic Acid Feed	
91598	4070-64-PT	A	PORTG	91598	08/31/1989	11/21/1994	Degradable Thermoplastic From Lactides	
	4070-64-P-RU	A	RUSSA	4894943/05	08/04/1989		Degradable Thermoplastics from Lactides	
	4042-64-10RU	A	RUSSIA	4613745	03/13/1989		Atmospheric Pressure Process for Preparing Cyclic Esters	
	4042-11-IESG	A	SINGP	9608306	03/17/1993		Process for the Production of Cyclic Esters	
	4042-36-PSG	A	SINGP	9606942-2	09/13/1994		Method to Produce Cyclic Esters	
P9690820-7	4042-7-1EPSG	A	SINGP	91917419.3	09/18/1991	07/29/1996	Catalytic Production of Lactide Directly from Lactic Acid	

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PATENT NO.	S.R. MATTER NO.	STATUS'	COUNTRY	APPL. NO.	APPLICATION DATE	ISSUE DATE	TITLE	INVENTORS (U.S. CASES ONLY)
P9690708-4	4042-8-1EP5G	A	SINGP	91917931.7	09/18/1991	06/15/1996	Lactide Production From Dehydration of Aqueous Lactic Acid Feed	
93/1145	4042-11-1-ZA	I	SOFR	93/1145	02/18/1993	01/25/1995	Process for the Production of Cyclic Esters	
94/7211	4042-36-ZA	A	SOFR	94/7211	09/16/1994	09/16/1994	Method to Produce Cyclic Esters	
96/1426	4042-36-ZA1	A	SOFR	96/1426	02/22/1996	08/28/1996	Method to Produce Cyclic Esters	
	4042-64-10ZA	A	SOFR	89/1773	03/08/1989		Atmospheric Pressure Process for Preparing Cyclic Esters	
91/7452	4042-7M	A	SOFR	91/7452	09/18/1991	05/27/1992	Catalytic Production of Lactide Directly from Lactic Acid	
91/7410	4042-8M	A	SOFR	91/7410	09/17/1991	05/27/1992	Lactide Production from Dehydration of Aqueous Lactic Acid Feed	
90/7797	4070-30-ZA	A	SOFR	90/7797	09/28/1990	05/27/1992	Yttrium and Rare Earth Compound Catalyzed Lactone Polymerization	
94/6975	4070-48-ZA	A	SOFR	94/6975	09/09/1994	10/25/1995	Degradable Polydioxaneone-Based Materials	
89/6040	4070-64-ZA	A	SOFR	89/6040	08/08/1989	05/30/1991	Degradable Thermoplastic From Lactides	
	4070-30-PSU	A	SCVIE	5011294.04	09/05/1990		Yttrium and Rare Earth Compound Catalyzed Lactone Polymerization	
549698	4042-7-1EPES	I	SPAIN	91917419.3	09/18/1991	11/09/1994	Catalytic Production of Lactide Directly from Lactic Acid	
552226	4042-8-1EPES	A	SPAIN	91917931.7	09/18/1991	07/27/1994	Lactide Production From Dehydration of Aqueous Lactic Acid Feed	
89/03503	4070-64-ES	A	SPAIN	89/03503	10/18/1989	02/16/1991	Degradable Thermoplastic From Lactides	

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0531462	4042-64-14SE	A	SWEDN	91921000.5	04/29/1991	04/09/1997	Process for the Purification of Cyclic Esters	
0531458	4042-64-15SE	A	SWEDN	91920939.5	04/30/1991	08/13/1997	One-Step Continuous Process for Preparing Cyclic Esters	
549698	4042-7-1EPSE	A	SWEDN	91917419.3	09/18/1991	11/09/1994	Catalytic Production of Lactide Directly from Lactic Acid	
0684962	4070-19-EPSE	I	SWEDN	93905993.7	02/16/1993	10/14/1998	Star-Shaped Hydroxyacid Polymers	
0684961	4070-24-EPSE	I	SWEDN	93905994.5	02/16/1993	11/11/1998	Alternating (ABA)N Poly(lactic Block Copolymers	
0438426	4070-32-EPSE	A	SWEDN	89910762.7	09/13/1989	11/18/1993	Poly(lactide Compositions	
0531462	4042-64-14CH	A	SWITZ	91921000.5	04/29/1991	04/09/1997	Process for the Purification of Cyclic Esters	
0531458	4042-64-15CH	A	SWITZ	91920939.5	04/30/1991	08/13/1997	One-Step Continuous Process for Preparing Cyclic Esters	
552226	4042-8-1EPCH	A	SWITZ	91917931.7	09/18/1991	07/27/1994	Lactide Production From Dehydration of Aqueous Lactic Acid Feed	
548225	4070-41-EPCH	A	SWITZ	91916923.5	09/09/1991	10/25/1995	Heat Shrinkable Films Containing Polyhydroxy Acids	
0428620	4070-64-EPCH	I	SWITZ	89910376.6	08/04/1989	03/03/1999	Degradable Thermoplastic From Lactides	
92036	4042-11-1-TW	I	TAIWN	82103587	05/07/1993	04/29/1998	Process for the Production of Cyclic Esters	
95820	4042-36-2-TW	I	TAIWN	85104477	04/15/1996	11/10/1998	Method to Produce and Purify Cyclic Esters	
	4042-36-TW	A	TAIWN	83112073	12/22/1994		Method to Produce Cyclic Esters	
	4042-64-10TW	A	TAIWN	78101607	03/04/1989		Atmospheric Pressure Process for Preparing Cyclic Esters	

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PATENT NO.	S.R. MATTER NO.	STATUS'	COUNTRY	APPL. NO.	APPLICATION DATE	ISSUE DATE	TITLE	INVENTORS (U.S. CASES ONLY)
	4042-64-29TW	A	TAIWN	82101291	02/23/1993		Thin Film Oligomerization of Hydroxycarboxylic Acid Compositions	
	4042-64-30TW	A	TAIWN	82101288	02/23/1993		Rare Earth Metal Catalyzed Oligomerization of Alpha-hydroxy Acids and Conversion to Dimeric Cyclic Esters	
	4042-7N	A	TAIWN	80107388	09/18/1991		Catalytic Production of Lactide Directly from Lactic Acid	
	4042-8N	A	TAIWN	80107389	09/18/1991		Lactide Production from Dehydration of Aqueous Lactic Acid Feed	
	4070-17-TW	A	TAIWN	81110506	12/30/1992		Polymerization of Lactide	
	4070-29-TW	A	TAIWN	80105485	07/15/1991		Polyhydroxy Acid Films	
058534	4070-30-TW	A	TAIWN	79108130	09/26/1990	01/15/1993	Yttrium and Rare Earth Compound Catalyzed Lactone Polymerization	
	4070-44-TW	A	TAIWN	80107106	09/06/1991		Packaging Thermoplastics From Lactic Acid	
	4070-48-TW	A	TAIWN	83112072	12/22/1994		Degradable Polydioxaneone-Based Materials	
46803	4070-64-TW	A	TAIWN	78106299	08/15/1989	04/11/1991	Degradable Thermoplastic From Lactides	
	4070-65-1-TW	P	TAIWN	84112588	11/25/1995		Method to Produce and Purify Cyclic Esters	
	4042-11-1-TH	A	THALN	018377	03/09/1993		Method to Produce Cyclic Esters	
	4042-7O	A	THALN	014414	09/18/1991		Catalytic Production of Lactide Directly from Lactic Acid	
	4042-8O	A	THALN	014415	09/18/1991		Lactide Production From Dehydration of Aqueous Lactic Acid Feed	

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PATENT NO.	S.R. MATTER NO.	STATUS ¹	COUNTRY	APPL. NO.	APPLICATION DATE	ISSUE DATE	TITLE	INVENTORS (U.S. CASES ONLY)
	4070-44-TH	A	THALN	014299	09/05/1991		Packaging Thermoplastics From Lactic Acid	
	4070-64-TH	A	THALN	009909	12/15/1989		Degradable Thermoplastic From Lactides	
	4070-65-1-TH	P	THALN	028489	10/24/1995		Method to Produce and Purify Cyclic Esters	
0632807	4042-11-1-1	I	UK	93907579.2	03/17/1993	08/19/1998	Process for the Production of Cyclic Esters	
0385000	4042-64-10GB	A	UK	89301958.8	02/28/1989	09/05/1990	Atmospheric Pressure Process for Preparation of Cyclic Esters	
0531462	4042-64-14GB	A	UK	91921000.5	04/29/1991	04/09/1997	Process for the Purification of Cyclic Esters	
0531458	4042-64-15GB	A	UK	91920939.5	04/30/1991	08/13/1997	One-Step Continuous Process for Preparing Cyclic Esters	
549698	4042-7-1EPGB	I	UK	91917419.3	09/18/1991	11/09/1994	Catalytic Production of Lactide Directly from Lactic Acid	
552226	4042-8-1EPGB	A	UK	91917931.7	09/18/1991	07/27/1994	Lactide Production From Dehydration of Aqueous Lactic Acid Feed	
0684962	4070-19-EPGB	I	UK	93905993.7	02/16/1993	10/14/1998	Star-Shaped Hydroxyacid Polymers	
0684961	4070-24-EPGB	I	UK	93905994.5	02/16/1993	02/16/1999	Alternating (ABA) _n Polylactic Block Copolymers	
	4070-39-EPGB	A	UK	9503669.5	02/23/1995		Composition and Method for Packaging Moisture Containing Foodstuffs	
548225	4070-41-EPGB	I	UK	91916923.5	09/09/1991	10/25/1995	Heat Shrinkable Films Containing Polyhydroxy Acids	
680522	4070-42-EPGB	I	UK	94907862.0	01/21/1994	10/02/1996	Metalized Poly(Lactic Acid) Films	

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PATENT NO.	S.R. MATTER NO.	STATUS ¹	COUNTRY	APPL. NO.	APPLICATION DATE	ISSUE DATE	TITLE	INVENTORS (U.S. CASES ONLY)
0627453	4070-6-EPGB	A	UK	94303291.2	05/06/1994	02/04/1998	Method for Making Polymers of Alpha-Hydroxy Acids	
0428620	4070-64-EPGB	I	UK	89910376.6	08/04/1989	03/03/1999	Degradable Thermoplastic From Lactides	
0777664	4070-67-EPGB	I	UK	95928694.9	08/14/1995	02/24/1999	Integrated Process for the Manufacture of Lactide	
5319107	4042-11-1	I	USA	07/854559	03/19/1992	06/07/1994	Method to Produce Cyclic Esters	Benecke, Cheung, Cremeans, Hillman, Lipinsky, Sinclair, Markle
5420304	4042-36	I	USA	08/128797	09/29/1993	05/30/1995	Method to Produce Cyclic Esters	Verser, Cheung, Eggeman, Evanko, Schilling, Meiser, Allen, Hillman, Cremeans, Lipinsky
5686630	4042-36-2	I	USA	08/473400	06/06/1995	11/11/1997	Purifying Cyclic Esters By Aqueous Solvent Extraction	Miao, Eggeman
5750732	4042-36-3	I	USA	08/444954	05/19/1995	05/12/1998	Method to Produce Cyclic Esters	Verser, Cheung, Eggeman, Evanko, Schilling, Meiser, Allen, Hillman, Cremeans, Lipinsky
5856523	4042-36-4	I	USA	08/940592	09/30/1997	01/05/1999	Purifying Cyclic Esters by Aqueous Solvent Extraction and Further Purification	Miao, Eggeman
5756651	4042-61	I	USA	08/682095	07/17/1996	05/26/1998	Impact Modified Polylactide	Chen, Schilling, Kelly Jr.
5908918	4042-61-1	I	USA	09/084563	05/26/1998	06/01/1999	Impact Modified Polylactide	Chen, Schilling, Kelly Jr.
4835293	4042-64-10	I	USA	07/017418	02/24/1987	05/30/1989	Atmospheric Pressure Process for Preparing Pure Cyclic Esters	Bhatia
5110868	4042-64-11	I	USA	07/640562	01/14/1991	05/05/1992	Biodegradable Compositions for Controlled Release of Chemical Agents	Bellis, Osterman
5221362	4042-64-12	I	USA	07/749163	08/23/1991	06/22/1993	Non-Halogenated Aqueous Cleaning Systems	Porta, Ridgway Jr., Svadlenak

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PATENT NO.	S.R. MATTER NO.	STATUS ¹	COUNTRY	APPL. NO.	APPLICATION DATE	ISSUE DATE	TITLE	INVENTORS (U.S. CASES ONLY)
	4042-64-13	A	USA	07/780821	10/22/1991		High Yield Recycle Process for Lactide	Bhatia
5136057	4042-64-13-1	I	USA	07/780821	10/22/1991	08/04/1992	High Yield Recycle Process for Lactide	Bhatia
5023350	4042-64-14	I	USA	07/528632	05/24/1990	06/11/1991	Process for the Purification of Cyclic Esters	Bhatia
5043458	4042-64-15	I	USA	07/521063	05/03/1990	08/27/1991	One-Step Continuous Process for Preparing Cyclic Esters	Bhatia
5117008	4042-64-16	I	USA	07/602346	10/23/1990	05/26/1992	Solvent Scrubbing Recovery of Lactide and Other Dimeric Cyclic Esters	Bhatia, Drysdale, Kosak
5023349	4042-64-17	I	USA	07/520348	05/08/1990	06/11/1991	Continuous Process for Rapid Conversion of Oligomers to Cyclic Esters	Bhatia
5196551	4042-64-18	I	USA	07/719952	06/24/1991	03/23/1993	Co-Vaporization Process for Preparing Lactide	Bhatia, Tarbell
5138074	4042-64-19	I	USA	07/545379	06/28/1990	08/11/1992	Continuous Catalyzed Vapor Phase Dimeric Cyclic Ester Process	Bellis, Bhatia
	4042-64-20	A	USA	07/552287	07/13/1990		Electrostatic Dry Toners Containing Degradable Resins	Drysdale, Ford
	4042-64-20-1	A	USA	07/812720	12/23/1991		Electrostatic Toners Containing Degradable Resins	Drysdale, Ford
5091544	4042-64-22	I	USA	07/586157	09/21/1990	02/25/1992	Process for Rapid Conversion of Oligomers to Cyclic Esters	Bhatia
	4042-64-23	A	USA	07/580527	09/11/1990		Films Containing Polyhydroxy Acids and a Compatibilizer	Bellis
5089632	4042-64-24	I	USA	07/648003	01/30/1991	02/18/1992	Process for Preparing Cyclic Esters Using a Fluorocarbon	Paul

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5266706	4042-64-25	I	USA	07/818547	01/28/1992	11/30/1993	Solvent Scrubbing Recovery of Lactide and Other Dimeric Cyclic Esters	Bhatia
	4042-64-26	A	USA	07/739296	08/01/1991		Method for Improving Rate of Polymerization	Ford
	4042-64-28	A	USA	07/734977	07/24/1991		Thin Film Depolymerization to Dimeric Cyclic Esters	Bhatia, Lin, Nash, Stambaugh
	4042-64-28-1	A	USA	08/065692	05/26/1993		Thin Film Depolymerization to Dimeric Cyclic Esters	Bhatia, Lin, Nash, Stambaugh
	4042-64-29	A	USA	07/814540	03/13/1992		Thin Film Oligomerization of Hydroxycarboxylic Acid Compositions	Bhatia, Drysdale, Lin, Nash
	4042-64-30	A	USA	07/814133	03/13/1992		Rare Earth Metal Catalyzed Oligomerization of Alpha-Hydroxy Acids and Conversion to Dimeric Cyclic Esters	Drysdale, Lin, Stambaugh
	4042-64-31	A	USA	07/831253	01/29/1992		Improved Atmospheric Pressure Process for Preparing, Recovering and Purifying Dimeric Cyclic Esters	Bhatia, Kaplan
	4042-64-31-1	A	USA	08/069467	06/01/1993		Improved Atmospheric Pressure Process for Preparing, Recovering and Purifying Dimeric Cyclic Esters	Bhatia, et al.
5288881	4042-64-32	I	USA	07/848188	03/12/1992	02/22/1994	Continuous Reduced Pressure Dimeric Cyclic Ester Production	Drysdale, Lin, Stambaugh
	4042-64-33	A	USA	07/814134	12/30/1992		Solventless Dimeric Cyclic Ester Separation and Recovery Process	Drysdale, Stambaugh, Tarbell

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	4042-64-33-1	A	USA	08/070636	06/01/1993		Solventless Dimeric Cyclic Ester Separation and Recovery Process	Drysdale, Stambaugh, Tarbell
	4042-64-33-2	A	USA	08/248838	05/24/1994		Solventless Dimeric Cyclic Ester Separation and Recovery Process	Drysdale, Stambaugh, Tarbell
	4042-64-33-3	A	USA	08/389984	02/14/1995		Solventless Dimeric Cyclic Ester Separation and Recovery Process	Drysdale, Stambaugh, Tarbell
	4042-64-34	A	USA	07/809154	12/16/1991		Preparation of Diaminediols	Brake, Drysdale
5236560	4042-64-35	I	USA	07/813189	03/13/1992	08/17/1993	Solventless Dimeric Cyclic Ester Distillation Process	Drysdale, Stambaugh, Tarbell
	4042-64-36-1	P	USA	08/231964	04/22/1994		Melt Crystallization Purification of Lactices	O'Brien, Sloan
	4042-64-37	A	USA	08/008899	01/21/1993		Laminates Comprising of Cellulosic Substrate and Printed Polylactice Outer Layer	O'Brien
	4042-64-38	A	USA	07/979591	11/20/1992		Fertilizer Compositions From Whey and Process for Their Preparation	Cockrem, Johnson
	4042-64-38-1	A	USA	08/124184	09/21/1993		Fertilizer Compositions From Whey and Process for Their Preparation	Cockrem, Johnson
5374743	4042-64-39	I	USA	08/128433	09/30/1993	12/20/1994	Improved Process for the Synthesis of Lactide or Glycolide from Lactic Acid or Glycolic Acid Oligomers	Thayer, Bellis
	4042-64-40	A	USA	07/661783	02/27/1991		Process for the Preparation of 1,4-Dioxane-2,5-Diones	Di Cosimo, Moran, Nakamura
5326887	4042-64-40-1	I	USA	07/836228	02/14/1992	07/05/1994	Process for the Preparation of 1,4-Dioxane-2,5-Diones	Di Cosimo, Moran, Nakamura
5332839	4042-7	I	USA	07/584466	09/18/1990	07/26/1994	Catalytic Production of Lactide Directly From Lactic Acid	Benecke, Markle, Sinclair

PATENT NO.	S.R. MATTER NO.	STATUS ¹	COUNTRY	APPL. NO.	APPLICATION DATE	ISSUE DATE	TITLE	INVENTORS (U.S. CASES ONLY)
5274127	4042-8	I	USA	07/584126	09/18/1990	12/28/1993	Lactide Production From Dehydration of Aqueous Lactic Acid Feed	Sinclair, Markle, Smith
	4042-80-PROV	A	USA	60/037491	02/07/1997		Cyclic Ester Catalyst Composition	Eggeman, Evanko, Lee
4698303	4045-2-1	I	USA	844819	03/27/1986	10/06/1987	Production of Lactic Acid by Continuous Production of Lactic Acid by Continuous Fermentation Using an Inexpensive Raw Material and a Simplified Method of Lactic Acid Purification	Bailey, Joshi, Michaels, Wisdom
4771001	4045-2-2	I	USA	910949	09/24/1986	09/13/1988	Production of Lactic Acid by Continuous Production of Lactic Acid by Continuous Fermentation Using an Inexpensive Raw Material and a Simplified Method of Lactic Acid Purification	Bailey, Joshi, Michaels, Wisdom
5681728	4045-23	I	USA	08/481753	06/07/1995	10/28/1997	Method and Apparatus for the Recovery and Purification of Organic Acids	Miao
5382617	4070-1	I	USA	107646	08/20/1993	01/17/1995	Stabilization of Poly(hydroxy Acid)s from Lactic or Glycolic Acid	Kelly Jr., Baird
5288841	4070-10	I	USA	984005	11/30/1992	02/22/1994	Fluidized Bed Ring-Opening Polymerization Process	Bellis, Paul
5270400	4070-11	I	USA	816433	12/31/1991	12/14/1993	L,D-Polylactide Copolymers with Controlled Morphology	Spinu
5268507	4070-12	I	USA	796272	11/22/1991	12/07/1993	Preparation of Amide Derivatives of Hydroxy Acids	Brake
5264626	4070-14	I	USA	797503	11/22/1991	11/23/1993	Rapid Depolymerization of Polyhydroxy Acids	Brake, Subramanian

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PATENT NO.	S.R. MATTER NO.	STATUS ¹	COUNTRY	APPL. NO.	APPLICATION DATE	ISSUE DATE	TITLE	INVENTORS (U.S. CASES ONLY)
5264617	4070-15	I	USA	797502	11/22/1991	11/23/1993	Preparation of Alkyl Esters by Depolymerization	Brake
5264614	4070-16	I	USA	796274	11/22/1991	11/23/1993	Recovery of Polyhydroxy Acids	Brake
5235031	4070-17	I	USA	815107	03/13/1992	08/10/1993	Polymerization of Lactide	Drysdale, Ford, McLain
5229528	4070-18	I	USA	796273	11/22/1991	07/20/1993	Rapid Depolymerization of Polyhydroxy Acids	Brake, Subramanian
5225521	4070-19	I	USA	815995	12/31/1991	07/06/1993	Star-Shaped Hydroxyacid Polymers	Spinu
5399666	4070-2	I	USA	230994	04/21/1994	03/21/1995	Easily Degradable Star-Block Copolymers	Ford
5208297	4070-22	I	USA	814135	12/30/1991	05/04/1993	Rare Earth Metal Coordination Compounds as Lactone Polymerization Catalysts	Ford, McLain
5208131	4070-23	I	USA	820012	01/10/1992	05/04/1993	Degradable Resins for Electrostatic Liquid Developers	Felder, Ford
5202413	4070-24	I	USA	816201	12/31/1991	04/13/1993	Alternating (ABA) _n Polylactide Block Copolymers	Spinu
5134171	4070-25	I	USA	826357	01/27/1992	07/28/1992	Degradable Foam Materials	Hammel, York
5095098	4070-27	I	USA	680165	04/03/1991	03/10/1992	Yttrium and Rare Earth Compounds Catalyzed Lactone Polymerization	McLain, Drysdale
5076983	4070-29	I	USA	552551	07/16/1990	12/31/1991	Polyhydroxy Acid Films	Loomis, Ostapchenko
5346966	4070-3	I	USA	141183	10/26/1993	09/13/1994	L,D-Polylactide Copolymers With Controlled Morphology	Spinu
5028667	4070-30	I	USA	414964	09/29/1989	07/02/1991	Yttrium and Rare Earth Compounds Catalyzed Lactone Polymerization	McLain, Drysdale
4719246	4070-32	I	USA	944588	12/22/1986	01/12/1988	Poly lactide Compositions	Murdoch, Loomis
4766182	4070-32DIV-1	I	USA	108531	10/15/1987	08/23/1988	Poly lactide Compositions	Murdoch, Loomis
4800219	4070-32DIV-2	I	USA	187350	04/28/1988	01/24/1989	Poly lactide Compositions	Murdoch, Loomis
4902515	4070-32DIV2A	I	USA	256471	10/12/1988	02/20/1990	Poly lactide Compositions	Loomis, Murdoch

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4981696	4070-32DIV2B	I	USA	438123	11/20/1989	01/01/1991	Poly lactide Compositions	Loomis, Murdoch
5278256	4070-36	I	USA	945853	09/16/1992	01/11/1994	Rapidly Degradable Poly(Hydroxyacid) compositions	Bellis
5498650	4070-37	I	USA	08/393773	02/24/1995	03/12/1996	Poly(Lactic Acid) Composition Having Improved Physical Properties	Flexman, Kelly Jr.
	4070-39	A	USA	08/201496	02/24/1994		Composition and Method for Packaging Moisture Containing Foodstuffs	Ford
5639466	4070-39-1	I	USA	08/393775	02/24/1995	06/17/1997	Method For Packaging Foodstuffs	Ford, Kelly Jr.
	4070-39-1-1	A	USA	08/874264	06/13/1997		Cyclic Ester Compositions for Inhibiting Growth of Infectious Agents	Kelly Jr., Lee, Flynn
5342969	4070-4	I	USA	025923	03/03/1993	08/30/1994	Recovery of Hydroxycarboxylic Acid Values from Poly(Hydroxycarboxylic Acids)	Ford, Tarbell
5420235	4070-40	I	USA	006726	01/21/1993	05/30/1995	Continuous Poly (Hydroxy Acid) Polymerization Using a Counter-Current Impeller Mixing System	Hochberg
	4070-41	A	USA	07/580526	09/11/1990		Films Containing Polyhydroxy Acids	Sinclair
	4070-41-1	A	USA	08/323300	10/14/1994		Films Containing Polyhydroxy Acids	Sinclair
6027677	4070-41-2	I	USA	08/437713	05/09/1995	02/22/2000	Films Containing Polyhydroxy Acids	Sinclair
	4070-42	A	USA	08/171080	12/21/1993		Metalized Poly(Lactic Acid) Films	O'Brien
5631066	4070-42-1	I	USA	08/427635	04/21/1995	05/20/1997	Process for Making Metalized Films and Films Produced Therefrom	O'Brien

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PATENT NO.	S.R. MATTER NO.	STATUS'	COUNTRY	APPL. NO.	APPLICATION DATE	ISSUE DATE	TITLE	INVENTORS (U.S. CASES ONLY)
	4070-42-1-1	A	USA	08/858777	05/19/1997		Metalized Biodegradable Films	O'Brien
5502158	4070-45	I	USA	07/950854	09/22/1992	03/26/1996	Degradable Polymer Composition	Sinclair, Lipinski
5834582	4070-45-1	I	USA	08/603578	02/20/1996	11/10/1998	Degradable Polymer Composition	Sinclair, Lipinsky
	4070-46	A	USA	07/949675	09/22/1992		Degradation of Degradable Polymers	Sinclair, Lipinsky, Litchfield, Allen
	4070-46-1	A	USA	08/482422	06/07/1995		Degradation Control of Environmentally Degradable Disposable Materials	Sinclair, Lipinsky, Litchfield, Allen
	4070-46-1-1-1	P	USA	09/244324	02/03/1999		Degradation Control of Environmentally Degradable Disposable Materials	Sinclair
	4070-46-1-1	P	USA	08/515696	08/16/1995		Degradation Control of Environmentally Degradable Disposable Materials	Sinclair, Lipinsky, Litchfield, Allen, Bigg
	4070-46-1-2	A	USA	08/787809	01/23/1997		Degradation Control of Environmentally Degradable Disposable Materials	Sinclair, Lipinsky, Litchfield, Allen
	4070-47	A	USA	07/229896	08/08/1988		Biodegradable Packaging Thermoplastics	Sinclair
	4070-47-1	A	USA	07/387678	07/31/1989		Biodegradable Packaging Thermoplastics	Sinclair
5180765	4070-47-2	I	USA	07/579005	09/06/1990	01/19/1993	Biodegradable Packaging Thermoplastics from Lactides	Sinclair
5767222	4070-48	I	USA	08/127907	09/29/1993	06/16/1998	Degradable Polydioxaneone-Based Materials	Cheung, Verser, Schilling, Lipinsky, Sinclair, Browning
5556895	4070-48-1	I	USA	08/455990	05/31/1995	09/17/1996	Degradable Polydioxaneone-Based Materials	Lipinsky, Sinclair, Browning, Cheung, Schilling, Verser

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5801223	4070-48-2	I	USA	08/457017	06/01/1995	09/01/1998	Degradable Polydioxaneone-Based	Lipinsky, Sinclair, Browning, Cheung, Schilling, Verser
6025458	4070-48-5	I	USA	09/097404	06/15/1998		Degradable Polydioxaneone-Based Materials	Cheung, Schilling, Verser
5444113	4070-49	I	USA	08/128520	09/29/1993	08/22/1995	End Use Applications of Biodegradable Polymers	Sinclair, Lipinsky, Browning, Bigg, Rogers
	4070-49-1	A	USA	08/461029	06/05/1995		End Use Applications of Biodegradable Polymers	Sinclair, Lipinsky, Browning, Bigg, Rogers
5760118	4070-49-2	I	USA	08/465462	06/05/1995	06/02/1998	End Use Applications of Biodegradable Polymers	Sinclair, Lipinsky, Browning, Bigg, Rogers
5210108	4070-5	I	USA	922269	07/29/1992	05/11/1993	Degradable Foam Materials	Spinu, Ford
	4070-50	A	USA	07/229939	08/08/1988		Biodegradable Replacement of Crystal Polystyrene	Sinclair
	4070-50-1	A	USA	07/387670	07/31/1989		Biodegradable Replacement of Crystal Polystyrene	Sinclair
	4070-50-2	A	USA	07/579465	09/06/1990		Biodegradable Replacement of Crystal Polystyrene	Sinclair
5424346	4070-50-2-1	I	USA	08/240085	05/09/1994	06/13/1995	Biodegradable Replacement of Crystal Polystyrene	Sinclair
5633342	4070-52	I	USA	08/549567	10/27/1995	05/27/1997	Method for the Synthesis of Environmentally Degradable Block Copolymers	Verser, Schilling, Chen
	4070-53	A	USA	07/229894	08/08/1988		Blends of Polylactic Acid	Sinclair
	4070-53-1	A	USA	07/387676	07/31/1989		Blends of Polylactic Acid	Sinclair
5216050	4070-53-2	I	USA	07/579000	09/06/1990	06/01/1993	Blends of Polylactic Acid	Sinclair
	4070-53-2-1	A	USA	08/069987	05/28/1993		Blends of Polylactic Acid	Sinclair
5310599	4070-6	I	USA	08/057817	05/06/1993	05/10/1994	Method for Making Polymers of Alpha-Hydroxy Acids	Ford

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	4070-60	A	USA	07/317391	03/01/1989		Degradable Impact Modified Polylactic Acid	Sinclair, Preston
	4070-60-1	A	USA	07/386844	07/31/1989		Degradable Impact Modified Polylactic Acid	Sinclair, Preston
5252642	4070-60-2	I	USA	07/579460	09/06/1990	10/12/1993	Degradable Impact Modified Polylactic Acid	Sinclair, Preston
	4070-60-2-1	A	USA	08/134528	10/08/1993		Degradable Impact Modified Polylactic Acid	Sinclair, Preston
	4070-61	A	USA	08/769734	12/19/1996		Method for Determining Degradation of Degradable Materials	Schilling
	4070-61-PROV	A	USA	60/008880	12/19/1995		Method For Determining Degradation of Degradable Materials	Siparsky, Schilling, Hoskinson
5675021	4070-65-1	I	USA	08/417597	04/05/1995	10/07/1997	Method to Produce and Purify Cyclic Esters	Eggeman, Benecke
5317064	4070-66	I	USA	989048	12/11/1992	05/31/1994	Manufacture of Polylactide Stereocomplexes	Spinu
5521278	4070-67	I	USA	08/292756	08/18/1994	05/28/1996	Integrated Process for the Manufacture of Lactide	O'Brien, Cariello, Wells
	4070-69	A	USA	07/580525	09/11/1990		Fluidized Bed Ring-Opening Polymerization	Bellis, Paul
5300358	4070-7	I	USA	956325	11/24/1992	04/05/1994	Degradable Absorbant Structures	Evers
	4070-70	A	USA	07/811284	12/20/1991		Yttrium and Rare Earth Compounds Catalyzed Lactone Polymerization	McLain, Drysdale
5296282	4070-8	I	USA	743850	08/12/1991	03/22/1994	Degradable Repellant Coated Articles	Evers
5292859	4070-9	I	USA	995457	12/22/1992	03/08/1994	Rare Earth Metal Coordination Compounds as Lactone Polymerization Catalysts	Ford, McLain
	4042-64-10VE	A	VENEZ	432-89	03/29/1989		Atmospheric Pressure Process for Preparing Cyclic Esters	

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PATENT NO.	S.R. MATTER NO.	STATUS ¹	COUNTRY	APPL. NO.	APPLICATION DATE	ISSUE DATE	TITLE	INVENTORS (U.S. CASES ONLY)
	4070-30-VE	A	VENEZ	1447-90	09/26/1990		Yttrium and Rare Earth Compound Catalyzed Lactone Polymerization	
	4042-7P	A	VENZL	00007-92	01/07/1992		Catalytic Production of Lactide Directly from Lactic Acid	
	4042-8P	A	VENZL	00009-92	01/08/1992		Lactide Production From Dehydration of Aqueous Lactic Acid Feed	
	4070-64-VE	A	VENZL	168189	11/07/1989		Degradable Thermoplastic From Lactides	
	4042-7Q	A	YUGSL	P-1553/91	09/18/1991		Catalytic Production of Lactide Directly from Lactic Acid	
	4042-8Q	A	YUGSL	P-1551/91	09/18/1991		Lactide Production From Dehydration of Aqueous Lactic Acid Feed	
	4070-64-P-YU	A	YUGSL	P-1765/89			Degradable Thermoplastic From Lactides	

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Eggeman, Timothy J.	Chronopol
Evanko, William A.	Chronopol
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Felder, Thomas C.	duPont
Flexman, Edmund A.	duPont
Flynn, Allison	Chronopol
Ford, Thomas M.	duPont
Hammel, Howard S.	duPont
Hillman, Melville E.D.	Battelle
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Lin, Kang	duPont
Litchfield, John H.	Battelle
Loomis, Gary L.	duPont
Markle, Richard A.	Battelle
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Meiser, Manfred	Chronopol
Miao, Fudu	Chronopol
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 Osterman, Virginia M.
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 Porta, Earnest W.
 Preston, Joseph
 Ridgway, Jr., James M.
 Rogers, Thomas A.
 Schilling, Kevin H.
 Sinclair, Richard G.
 Siparsky, Georgette L.
 Sloan, Gilbert J.
 Smith, Russell K.
 Spinu, Moira
 Stambaugh
 Subramanian, Morayonan S.
 Svadlenak, Rudolf E.
 Tarbell, James V.
 Thayer, Chester A.
 Verser, Dan W.
 Wells, Theodore F.
 Wisdom, Richard A.
 York, Robert O.

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Note: Battelle	=	Battelle Memorial Institute
DuPont	=	E.I. duPont DeNemour & Co.
Chronopol	=	Chronopol, Inc.
Engenics	=	Engenics, Inc.

TRADEMARK REGISTRATIONS

Mark	Sr. Matter No.	Status ²	Country	Appl. No.	Appl. Date	Reg. No.	Reg. Date
Chronopol	4045-17	R	USA	74/498163	3/8/1994	1973291	5/7/1996
Chronopol	4045-18	A	USA	74/498423	3/8/1994		
Chronopol	4045-19	A	USA	74/498421	3/8/1994		
Chronopol	4045-20	A	USA	74/498270	3/8/1994		
Heplon	4-45-25	A	USA	75/267658	4/1/1997		

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