



PROCESS ECONOMICS PROGRAM

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Abstract

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ENVIRONMENTALLY DEGRADABLE POLYMERS

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This report addresses the current concerns and technological developments related to environmentally degradable polymers. It supplements PEP Report 115 (September 1977), which discussed early commercial developments in the field.

The processes and mechanisms involved in photodegradation and biodegradation are presented, along with a summary of related patents. Discussions of governmental statutory and agency and key industrial organizational activities are presented. Technical developments that are commercially available or under development are reviewed, and updates are provided for several inactive degradable technologies.

Technologies are explored and process economics are developed for three degradable polymer technologies based on (1) biopolymers obtained via bacterial fermentation, (2) biodegradable blends of synthetic polymers and polysaccharides, and (3) photodegradable ethylene/carbon monoxide copolymers.

Issues concerning degradable polymers as they affect other solid waste management strategies are also discussed.

Report No. 115A

**ENVIRONMENTALLY
DEGRADABLE POLYMERS**

SUPPLEMENT A

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For detailed marketing data and information, the reader is referred to one of the SRI programs specializing in marketing research. The *CHEMICAL ECONOMICS HANDBOOK* Program covers most major chemicals and chemical products produced in the United States and the *WORLD PETROCHEMICALS* Program covers major hydrocarbons and their derivatives on a worldwide basis. In addition, the SRI *DIRECTORY OF CHEMICAL PRODUCERS* services provide detailed lists of chemical producers by company, product, and plant for the United States and Western Europe

CONTENTS

ABBREVIATIONS	xix
1 INTRODUCTION	1-1
2 SUMMARY	2-1
GENERAL CONSIDERATIONS	2-1
DEGRADATION OF SYNTHETIC POLYMERS	2-1
GOVERNMENTAL AND ORGANIZATIONAL ACTIVITY	2-3
TECHNICAL DEVELOPMENTS	2-3
PROCESS TECHNOLOGIES	2-3
PROCESS ECONOMICS	2-5
THE CONTINUING DEBATE	2-5
3 DEGRADATION OF SYNTHETIC POLYMERS	3-1
GENERAL CONSIDERATIONS	3-1
PHOTODEGRADATION OF SYNTHETIC POLYMERS	3-2
Photosensitive Copolymer Systems	3-4
Ketone Copolymers	3-4
Ethylene/Carbon Monoxide Copolymers	3-5
Photosensitive Additive Systems	3-5
Metal Salt Complexes	3-6
Organic Compounds	3-6
Other Compounds	3-6
Photodegradable Homopolymers	3-6
BIODEGRADATION OF SYNTHETIC POLYMERS	3-7
Naturally Biodegradable Synthetic Polymers	3-8
Poly(glycolic acid)/Poly(lactic acid)	3-8
Poly(ϵ -caprolactone)	3-9
Poly(hydroxybutyrate)/Poly(hydroxyvalerate)	3-9
Synthetic Polymers with Biodegradable Fillers	3-9
WATER-SOLUBLE SYNTHETIC POLYMERS	3-11
REVIEW OF PATENTS	3-11

CONTENTS (Continued)

4 GOVERNMENTAL STATUTORY AND AGENCY ACTIVITY	4-1
LEGISLATION AND REGULATORY ACTIVITY	4-1
International	4-1
International Convention on the Prevention of Marine Pollution by Dumping of Waste and Other Matter, London, 1972 (London Dumping Convention)	4-1
International Convention for the Prevention of Pollution from Ships (1973 and Protocols of 1978)—MARPOL 73/78 ...	4-1
European Community Waste Directives of 1990	4-2
United States—Federal	4-2
Public Law 100-220—Plastic Pollution Research and Control Act	4-2
Public Law 100-556—Degradable Plastic Ring Carriers Act	4-2
Congressional Bills	4-3
United States—State and Local	4-6
Suffolk County, New York	4-6
Minneapolis and St. Paul, Minnesota	4-6
Freeport, Maine	4-6
State of Massachusetts	4-6
State of Connecticut	4-7
Western Europe	4-7
Italy	4-7
Denmark	4-7
Japan	4-7
GOVERNMENT AGENCY ACTIVITY	4-7
United States	4-8
Department of Agriculture	4-8
Department of Commerce	4-8
Department of Defense	4-8
Department of Energy	4-8
Environmental Protection Agency	4-8
Food and Drug Administration	4-9
General Accounting Office	4-9
National Institute of Standards and Technology	4-9
National Science Foundation	4-10
Canada	4-10
Province of Ontario	4-10
Japan	4-10
Ministry of Agriculture, Forestry, and Fisheries	4-10
Ministry of International Trade and Industry	4-10

CONTENTS (Continued)

5 ORGANIZATIONAL ACTIVITY	5-1
UNITED STATES	5-1
American Society for Testing and Materials	5-1
Center for Marine Conservation	5-2
Chevron Chemical Company	5-2
Degradable Plastics Council	5-2
Du Pont	5-3
Environmental Action Foundation	5-3
Flexible Packaging Association	5-4
Keep America Beautiful	5-4
Mobil Chemical Company	5-4
National Association for Plastic Container Recovery	5-4
Packaging Coalition for Solid Waste Management	5-5
The Packaging Group	5-5
Plastics Institute of America	5-5
Society of the Plastics Industry—United States	5-5
Council on Plastics and Packaging in the Environment (COPPE)	5-6
Council for Solid Waste Solutions (CSWS)	5-6
Plastics Bottle Institute (PBI)	5-6
SRI International	5-6
CANADA	5-7
Environment and Plastic Institute of Canada (EPIC)	5-7
Pollution Probe Foundation	5-8
Recycling Council of Ontario	5-8
Society of the Plastics Industry—Canada	5-8
WESTERN EUROPE	5-8
Association of Plastics Manufacturers in Europe	5-8
BASF AG	5-8
CEDEP/GECOM	5-9

CONTENTS (Continued)

6 TECHNICAL DEVELOPMENTS	6-1
COMMERCIALLY AVAILABLE TECHNOLOGIES	6-1
ADM/Ampacet/BPI—Poly—Clean/Poly—Grade/Sty—Grade	6-1
Sty—Grade Polystyrene Photodegradable Additive	6-1
Poly—Grade Polyolefin Photodegradable Additive	6-2
Poly—Clean/Poly—Grade II Polyolefin Biodegradable Additive	6-3
Poly—Grade III Polyolefin Photo- and Bio-degradable Additive	6-5
Agri-Tech/USDA	6-5
Biodegradable Starch Technology	6-5
Water-Soluble Cornstarch/PVA Technology	6-6
Air Products & Chemicals—Vinex	6-6
Amerplast—ECOTEN/Ecothene	6-7
Belland	6-7
Coloroll/St. Lawrence Starch—Byoplastic/ECOSTAR/ECOSTARplus	6-8
Dow—E/CO	6-9
Du Pont—E/CO and Medisorb	6-10
E/CO Copolymer	6-10
Glycolide and Lactide Polymers—Medisorb	6-11
ECOPlastics/Enviromer—Ecolyte	6-11
ICI—PHB, PHBV/Biopol	6-12
Ideamasters/Plastigone Technologies/Scott—ECOTEN/ Plastor/LitterLess/Plastigone	6-13
IronClad—Vanish	6-15
Manzinger Papierwerke—BIO-PLASTESSE	6-15
Max/Mitsubishi Kasei Vinyl	6-15
Nippon Unicar	6-15
Nova Pharmaceutical—Biodel	6-15
Owens—Illinois	6-16
Personal Products	6-16
Poly-Tech—Ruffies/Sure-Sac/Color Scents	6-16
Princeton Polymer Laboratories (PPL)	6-17
Union Carbide Corporation (UCC)—E/CO Copolymers and PCL Polymers	6-17
Weisstech Corporation—BIOTHENE/Photo-BIOTHENE	6-17

CONTENTS (Continued)

6 TECHNICAL DEVELOPMENTS (Continued)

NEW AND DEVELOPMENTAL TECHNOLOGIES	6-19
Agency of Industrial Science and Technology (AIST)	6-19
FRI/GIRI—Osaka	6-19
GIRI—Shikoku	6-19
NCLI	6-19
Akzo NV	6-19
Alchemie Research Centre	6-20
Amrotex AG	6-20
Argonne National Laboratory	6-20
Bando Chemical Industries	6-21
BASF AG	6-21
Battelle Memorial Institute	6-21
Bio-Regional Energy Association/Virginia Tech	6-22
Canadian Titanium Pigments	6-22
ENI	6-22
Exxon	6-22
Ferruzzi	6-23
Forest Products Laboratory/USDA	6-23
Hebrew University of Jerusalem	6-23
LORRE	6-23
Mitsui Petrochemical Industries	6-24
Mitsui Toatsu Chemical/Kanazawa University	6-24
Nichiden Kagaku	6-24
Nikka Kasei	6-24
Orkem	6-24
Protan	6-25
Rotterdam Manage	6-25
Royal Institute of Technology	6-25
Shell	6-25
SRI International	6-25
Stevens Institute of Technology	6-26
Tecnocolor	6-26

CONTENTS (Continued)

6 TECHNICAL DEVELOPMENTS (Continued)

NEW AND DEVELOPMENTAL TECHNOLOGIES (Concluded)

Teno A.B.	6-26
3M/Waste Management	6-26
Tokyo Institute of Technology	6-27
U.S. Army	6-27
University of Detroit	6-27
University of Maryland	6-27
University of Massachusetts	6-28

INACTIVE AND MISCELLANEOUS TECHNOLOGIES

AB Akerlund & Rausing—ENDE—plast	6-31
AB Tetra Pak	6-31
ARCO Chemical	6-31
Chisso	6-31
Daicel	6-32
DeBell & Richardson	6-32
Eastman Kodak	6-32
Elco Chemicals/D.W. Young—Polutrol	6-32
W.R. Grace	6-32
Hercules	6-33
Hoechst	6-33
Japan Synthetic Rubber	6-33
Mitsubishi Monsanto Chemical Co.	6-33
Mitsubishi Petrochemical Co.	6-33
Mobil Chemical Company	6-33
Montedison SpA	6-33
Nippon Soda	6-34
Nippon Zeon—Lifel	6-34
Osaka Soda	6-34
Princeton Chemical Research—Ecolan	6-34
Seiwa Chemical	6-34
Sekisui Chemical—Eslen	6-35
Shiseido	6-35

CONTENTS (Continued)

6 TECHNICAL DEVELOPMENTS (Concluded)

INACTIVE AND MISCELLANEOUS TECHNOLOGIES (Concluded)

Snamprogetti	6-35
Solvay & Cie	6-35
Sumitomo Chemical Co., Ltd.	6-35
Texaco	6-35
Wada Chemical—Lopo Film	6-36
Witco Chemical—Polybutylene-1 (PB)	6-36

7 BIOPOLYMERS

CHEMISTRY

PROCESS REVIEW

PROCESS DESCRIPTION

Fermentation (Section 100)

Extraction and Purification (Section 200)

PROCESS DISCUSSION

Bacterial Fermentation

Extraction and Purification

COST ESTIMATES

Capital Costs

Production Costs

INDUSTRY STATUS

8 STARCH ACETATE/POLYSTYRENE GRAFT COPOLYMERS

CHEMISTRY

Polystyrene Polymerization

Starch Modification

Grafting Polystyrene onto Starch Acetate

PROCESS REVIEW

Anionic Polymerization of the Synthetic Polymer

Functionalization of the Polysaccharide

Grafting of the Synthetic Polymer Anion onto the
Functionalized Polysaccharide

CONTENTS (Continued)

8 STARCH ACETATE/POLYSTYRENE GRAFT COPOLYMERS (Concluded)	
PROCESS DESCRIPTION	8-6
Anionic Polymerization of Polystyrene (Section 100)	8-6
Starch Acetate Mesylation (Section 200)	8-6
Grafting PS onto Starch Acetate (Section 300)	8-8
PROCESS DISCUSSION	8-15
Anionic Polymerization of Polystyrene	8-15
Starch Modification	8-15
Starch Acetate/PS Grafting	8-15
Materials of Construction	8-16
COST ESTIMATES	8-16
Capital Costs	8-16
Production Costs	8-16
INDUSTRY STATUS	8-16
9 ETHYLENE/CARBON MONOXIDE COPOLYMERS	9-1
CHEMISTRY	9-1
PROCESS REVIEW	9-3
PROCESS DESCRIPTION	9-4
Polymerization and Recovery (Section 100)	9-5
Finishing and Storage (Section 200)	9-6
PROCESS DISCUSSION	9-11
Unit Capacity/Multipurpose Unit	9-11
Feed Specifications	9-11
Reactor	9-11
Recycle Cooling	9-11
Product Finishing	9-12
Materials of Construction	9-12
COST ESTIMATES	9-12
Capital Costs	9-12
Production Costs	9-12

CONTENTS (Concluded)

10 DEGRADABLE POLYMERS: THE DEBATE CONTINUES	10-1
PLASTICS IN TODAY'S SOCIETY	10-1
Solid Waste Management	10-1
Recycling	10-2
Incineration	10-2
Landfilling	10-3
Source Reduction	10-3
The Effects of Degradable Polymers	10-3
Market Potential	10-4
Boycotts, Legislation, and Lawsuits	10-5
Degradable Polymers and The Future	10-6
APPENDIX A: PATENT SUMMARY	A-1
APPENDIX B: CITED REFERENCES	B-1
APPENDIX C: PATENT REFERENCES BY COMPANY	C-1
APPENDIX D: PROCESS FLOW DIAGRAMS	D-1

ILLUSTRATIONS

3.1	DISTRIBUTION OF SOLAR ENERGY	3-2
5.1	PLASTIC CONTAINER CODING	5-7
7.1	PHBV BY BACTERIAL FERMENTATION PROCESS FLOW DIAGRAM	D-3
8.1	STARCH ACETATE-G-POLYSTRENE PROCESS FLOW DIAGRAM	D-7
9.1	E/CO BY A HIGH PRESSURE PROCESS, AUTOCLAVE REACTOR PROCESS FLOW DIAGRAM	D-13
9.2	E/CO COPOLYMERS BY A HIGH-PRESSURE PROCESS PRODUCT VALUE AS A FUNCTION OF TOTAL FIXED CAPITAL AND ETHYLENE PRICE	9-18

TABLES

2.1	ENVIRONMENTALLY DEGRADABLE POLYMERS SUMMARY OF ECONOMICS	2-6
3.1	ENVIRONMENTALLY DEGRADABLE POLYMERS SELECTED REFERENCES	3-12
3.2	ENVIRONMENTALLY DEGRADABLE POLYMERS PATENT SUMMARY	A-3
3.3	ENVIRONMENTALLY DEGRADABLE POLYMERS PATENT SUMMARY	A-27
4.1	STATE/LOCAL LEGISLATIVE SUMMARY	4-12
5.1	ORGANIZATION ACTIVITY LIST	5-10
6.1	COMMERCIALY AVAILABLE DEGRADABLE POLYMER TECHNOLOGIES	6-18
6.2	NEW AND DEVELOPMENTAL DEGRADABLE POLYMER TECHNOLOGIES/PROCESSES	6-29
6.3	INACTIVE AND MISCELLANEOUS DEGRADABLE POLYMER TECHNOLOGIES	6-37
7.1	PROPERTIES OF PP, PHB, AND PHBV	7-3
7.2	ENVIRONMENTALLY DEGRADABLE POLYMERS BIOPOLYMER PATENT SUMMARY	A-37
7.3	PHBV BY BACTERIAL FERMENTATION: DESIGN BASES	7-6
7.4	PHBV BY BACTERIAL FERMENTATION: MAJOR EQUIPMENT	7-9
7.5	PHBV BY BACTERIAL FERMENTATION UTILITIES SUMMARY	7-11
7.6	PHBV BY BACTERIAL FERMENTATION STREAM FLOWS	7-12
7.7	PHBV BY BACTERIAL FERMENTATION TOTAL CAPITAL INVESTMENT	7-16
7.8	PHBV BY BACTERIAL FERMENTATION CAPITAL INVESTMENT BY SECTION	7-17

TABLES (Continued)

7.9	PHBV BY BACTERIAL FERMENTATION PRODUCTION COSTS	7-18
8.1	STARCH ACETATE-G-POLYSTYRENE PROCESS DESIGN BASES	8-7
8.2	STARCH ACETATE-G-POLYSTYRENE PROCESS MAJOR EQUIPMENT	8-9
8.3	STARCH ACETATE-G-POLYSTYRENE PROCESS UTILITIES SUMMARY	8-12
8.4	STARCH ACETATE-G-POLYSTYRENE PROCESS STREAM FLOWS	8-13
8.5	STARCH ACETATE-G-POLYSTYRENE PROCESS TOTAL CAPITAL INVESTMENT	8-18
8.6	STARCH ACETATE-G-POLYSTYRENE PROCESS CAPITAL INVESTMENT BY SECTION	8-19
8.7	STARCH ACETATE-G-POLYSTYRENE PROCESS PRODUCTION COSTS	8-20
9.1	E/CO COPOLYMERS PROPERTIES OF E/CO FILMS	9-2
9.2	ETHYLENE/CARBON MONOXIDE COPOLYMERS PATENT SUMMARY	A-42
9.3	E/CO COPOLYMERS BY A HIGH-PRESSURE PROCESS DESIGN BASES	9-5
9.4	E/CO COPOLYMERS BY A HIGH-PRESSURE PROCESS MAJOR EQUIPMENT	9-7
9.5	E/CO COPOLYMERS BY A HIGH-PRESSURE PROCESS UTILITIES SUMMARY	9-9
9.6	E/CO COPOLYMERS BY A HIGH-PRESSURE PROCESS STREAM FLOWS	9-10
9.7	E/CO COPOLYMERS BY A HIGH-PRESSURE PROCESS TOTAL CAPITAL INVESTMENT	9-14
9.8	E/CO COPOLYMERS BY A HIGH-PRESSURE PROCESS CAPITAL INVESTMENT BY SECTION	9-15

TABLES (Concluded)

9.9	E/CO COPOLYMERS BY A HIGH-PRESSURE PROCESS	
	PRODUCTION COSTS	9-16
9.10	LDPE FROM AN AUTOCLAVE REACTOR	
	PRODUCTION COSTS	9-19