



# PROCESS ECONOMICS PROGRAM

SRI INTERNATIONAL

Menlo Park, California

94025

## Abstract

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Liquid Crystal Polymers

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Liquid crystal copolyesters, recently brought onto the high performance polymer market, are expected to have a growth rate in excess of 20%/yr, because of their outstanding properties and good processability. This report evaluates the manufacture of two liquid crystal copolyesters, one made from p-hydroxybenzoic acid, terephthalic acid, and 4,4'-dihydroxydiphenyl (sometimes called biphenol), similar to the polymer that is manufactured on a commercial scale by Dartco Manufacturing, and the other made from p-hydroxybenzoic acid and 6-hydroxy-2-naphthoic acid, which we believe is similar to the product, base grade, that is made on a semicommercial scale by Hoechst Celanese. The report also evaluates the manufacture of two of the monomers, p-hydroxybenzoic acid and 4,4'-dihydroxydiphenyl. A rough estimate of the cost of manufacturing one of the other monomers, 6-hydroxy-2-naphthoic acid, is also provided.

In addition, the report includes summaries of pertinent patents on liquid crystal polyesters and the monomers mentioned above, with the exception of terephthalic acid. Sections on the industry status of these materials and the basic chemistry of the manufacturing processes are included.

PEP'86 L. Elkin

Report No. 86C

# **LIQUID CRYSTAL POLYMERS**

by **LLOYD M. ELKIN**

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Menlo Park, California 94025

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

1	INTRODUCTION .....	1
2	SUMMARY .....	3
	General Aspects .....	3
	Economic Aspects .....	4
	Technical Aspects .....	9
	p-Hydroxybenzoic Acid .....	9
	4,4'-Dihydroxydiphenyl .....	10
	Liquid Crystal Polymer from p-Hydroxybenzoic Acid, Terephthalic Acid, and 4,4'-Dihydroxydiphenyl .....	10
	Liquid Crystal Polymer from p-Hydroxybenzoic Acid and 6-Hydroxy-2- Naphthoic Acid .....	10
3	INDUSTRY STATUS .....	11
	Plant Capacities .....	11
	Raw Materials .....	11
	Prices .....	13
	Properties .....	13
	Future Prospects .....	15
4	CHEMISTRY AND TECHNOLOGY .....	17
	The Nature of Liquid Crystals .....	17
	The Properties of Liquid Crystal Polymers .....	18
	Liquid Crystal Polymer from p-Hydroxybenzoic Acid, Terephthalic Acid, and 4,4'-Dihydroxydiphenyl .....	20
	Liquid Crystal Polymer from p-Hydroxybenzoic Acid and 6-Hydroxy-2- Naphthoic Acid .....	24
	p-Hydroxybenzoic Acid from Phenol .....	26
	4,4'-Dihydroxydiphenyl from Phenol .....	27
	6-Hydroxy-2-Naphthoic Acid from $\beta$ -Naphthol .....	29
5	p-HYDROXYBENZOIC ACID FROM PHENOL .....	31
	Review of Processes .....	31
	Process Description .....	32
	Process Discussion .....	42
	Selection of Design Patents .....	42
	Reactor Design .....	42
	Chemical Reactions .....	42
	Heat of Reaction .....	43
	Potassium Ion Recovery .....	43
	Elimination of Impurities .....	43
	Separators and Extractor .....	44
	Materials of Construction .....	45
	Capital and Production Costs .....	45

## CONTENTS

6	4,4'-DIHYDROXYDIPHENYL FROM PHENOL .....	49
	Process Review .....	49
	Process Description .....	49
	Process Discussion .....	65
	Choice of Design Patents .....	65
	Purity of Feeds .....	65
	Catalyst Prep Vessel V-102 .....	65
	Aluminum Phenoxide Catalyst .....	65
	Alkylation Reactors .....	66
	Catalyst Decomposition and Removal .....	66
	Recycle of Heavy Ends .....	67
	Oxidative Coupling Reactor .....	67
	Hydrogenation Reactor .....	68
	Recycle of Pd-on-Carbon Catalyst .....	68
	Dealkylation Reactor .....	68
	Crystallization .....	68
	Process Building .....	68
	Capital and Production Costs .....	69
7	LIQUID CRYSTAL POLYMER FROM p-HYDROXYBENZOIC ACID, TEREPHTHALIC ACID, AND 4,4'-DIHYDROXYDIPHENYL .....	75
	Process Review .....	75
	Process Description .....	76
	Process Discussion .....	88
	Choice of Design Patents .....	88
	Plant Size .....	88
	Operating Flexibility .....	88
	Liquid Phase Polymerization Reactors and Belt Coolers .....	88
	Potassium Sulfate and Distearyl Pentaerythritol Diphosphite .....	88
	Conversion .....	89
	Loss in Grinding .....	89
	Solid Phase Polymerization .....	89
	Polymer Drying Step .....	90
	Filled Product Composition .....	90
	Capital and Production Costs .....	91
	Production Cost of Neat Polymer .....	91
	Raw Material Charge-in Values .....	92
	Charge for G&A, Sales, and Research .....	92
	Less-Than-Capacity Operation .....	92
8	LIQUID CRYSTAL POLYMER FROM p-HYDROXYBENZOIC ACID AND 6-HYDROXY-2-NAPHTHOIC ACID .....	101
	Process Review .....	101
	Process Description .....	101

## CONTENTS

<b>8 LIQUID CRYSTAL POLYMER FROM p-HYDROXYBENZOIC ACID AND 6-HYDROXY-2-NAPHTHOIC ACID (Continued)</b>	
Process Discussion .....	112
Choice of Design Patents .....	112
Plant Capacity .....	114
Conversion of Hydroxy Groups to Acetate Groups .....	114
Polymerization Catalyst .....	115
Molecular Weight .....	115
Vacuum System .....	115
Mechanical Losses .....	117
Solid Phase Polymerization .....	117
Capital and Production Costs .....	118
Lower Capacity Cases .....	118
Cost Comparison .....	119
Manufacturing Cost for 6-Hydroxy-2-Naphthoic Acid .....	119
Cost of Glass Filled Grade .....	120
 Appendix A .....	 133
Equipment Suppliers .....	133
 PATENT SUMMARY TABLES .....	 135
 CITED REFERENCES .....	 157
 PATENT REFERENCES BY COMPANY .....	 169

## ILLUSTRATIONS

4.1	Copolymer Melting Point As A Function of Copolymer Composition .....	19
5.1	para-Hydroxybenzoic Acid from Phenol Flow Sheet .....	177
6.1	4,4'-Dihydroxydiphenyl from Phenol Flow Sheet .....	179
7.1	Liquid Crystal Polymer from p-Hydroxybenzoic Acid, Terephthalic Acid, and 4,4'-Dihydroxydiphenyl Flow Sheet .....	183
8.1	Liquid Crystal Polymer from p-Hydroxybenzoic Acid and 6-Hydroxy-2-Naphthoic Acid Flow Sheet .....	187
8.2	Liquid Crystal Polymer from p-Hydroxybenzoic Acid and 6-Hydroxy-2-Naphthoic Acid Relationship Between Inherent Viscosity and Molecular Weight .....	116

## TABLES

2.1	p-Hydroxybenzoic Acid, 4,4'-Dihydroxydiphenyl, and 6-Hydroxy-2-Naphthoic Acid Manufacturing Costs Summary .....	5
2.2	Liquid Crystal Polymers Estimated Manufacturing Costs, Neat Polymer, Pellets .....	7
2.3	Liquid Crystal Polymers Estimated Manufacturing Costs, Filled Polymer Grades .....	8
3.1	Liquid Crystal Polymers Plant Capacities .....	12
3.2	Physical Properties of Liquid Crystal Polymers .....	14
4.1	Homo- and Co-polymers Containing 4-Oxybenzoyl Comparison of Properties .....	22
4.2	Comparison of Physical Properties of Liquid Crystal Polymers With Other High Performance Polymers .....	23
5.1	4-Hydroxybenzoic Acid Patent Summary .....	137
5.2	para-Hydroxybenzoic Acid from Phenol Major Equipment .....	35
5.3	para-Hydroxybenzoic Acid from Phenol Utilities Summary .....	37
5.4	p-Hydroxybenzoic Acid from Phenol Stream Flows .....	38
5.5	para-Hydroxybenzoic Acid from Phenol Summary of Reactor Conditions .....	41
5.6	para-Hydroxybenzoic Acid from Phenol Total Capital Investment .....	46
5.7	para-Hydroxybenzoic Acid from Phenol Production Costs .....	47
6.1	4,4'-Dihydroxydiphenyl Patent Summary .....	139



## TABLES

6.2	4,4'-Dihydroxydiphenyl from Phenol Major Equipment .....	57
6.3	4,4'-Dihydroxydiphenyl from Phenol Utilities Summary .....	59
6.4	4,4'-Dihydroxydiphenyl from Phenol by Oxidative Coupling Stream Flows .....	60
6.5	4,4'-Dihydroxydiphenyl from Phenol Alkylation Reactor Conditions .....	63
6.6	4,4'-Dihydroxydiphenyl from Phenol Oxidative Coupling, Hydrogenation, and Dealkylation Reactor Conditions ...	64
6.7	4,4'-Dihydroxydiphenyl from Phenol Total Capital Investment .....	70
6.8	4,4'-Dihydroxydiphenyl from Phenol Capital Investment by Section .....	71
6.9	4,4'-Dihydroxydiphenyl from Phenol Production Costs .....	72
6.10	4,4'-Dihydroxydiphenyl from Phenol Direct Costs by Section .....	74
7.1	Liquid Crystal Polymers Patent Summary .....	142
7.2	Liquid Crystal Polymer from p-Hydroxybenzoic Acid, 4,4'-Dihydroxydiphenyl, and Terephthalic Acid, Filled Major Equipment .....	80
7.3	Liquid Crystal Polymer from p-Hydroxybenzoic Acid, 4,4'-Dihydroxydiphenyl, and Terephthalic Acid, Filled Utilities Summary .....	82
7.4	Liquid Crystal Polymer from p-Hydroxybenzoic Acid, Terephthalic Acid, and 4,4'-Dihydroxydiphenyl Stream Flows .....	83
7.5	Liquid Crystal Polymer Polymerization (Liquid) Reactor Operating Schedule .....	85

## TABLES

7.6	Liquid Crystal Polymer Polymerization (Liquid) Reactor Conditions Comparison of SRI Design With Patent Information .....	86
7.7	Liquid Crystal Polymer Solid Phase Polymerization Reactor Conditions Comparison of SRI Design With Patent Information .....	87
7.8	Liquid Crystal Polymer from p-Hydroxybenzoic Acid, 4,4'-Dihydroxydiphenyl, and Terephthalic Acid, Filled Total Capital Investment .....	94
7.9	Liquid Crystal Polymer from p-Hydroxybenzoic Acid, 4,4'-Dihydroxydiphenyl, and Terephthalic Acid, Filled Capital Investment by Section .....	95
7.10	Liquid Crystal Polymer from p-Hydroxybenzoic Acid, 4,4'-Dihydroxydiphenyl, and Terephthalic Acid, Filled Production Costs .....	96
7.11	Liquid Crystal Polymer from p-Hydroxybenzoic Acid, 4,4'-Dihydroxydiphenyl, and Terephthalic Acid, Filled Direct Costs by Section .....	98
7.12	Liquid Crystal Polymer from p-Hydroxybenzoic Acid, 4,4'-Dihydroxydiphenyl, and Terephthalic Acid, Neat Production Costs .....	99
8.1	6-Hydroxy-2-Naphthoic Acid Patent Summary .....	156
8.2	Liquid Crystal Polymer from p-Hydroxybenzoic Acid and 6-Hydroxy-2-Naphthoic Acid, Neat Polymer Major Equipment .....	105
8.3	Liquid Crystal Polymer from p-Hydroxybenzoic Acid and 6-Hydroxy-2-Naphthoic Acid, Neat Polymer Utilities Summary .....	107
8.4	Liquid Crystal Polymer from p-Hydroxybenzoic Acid and 6-Hydroxy-2-Naphthoic Acid Stream Flows .....	108
8.5	Liquid Crystal Polymer from p-Hydroxybenzoic Acid and 6-Hydroxy-2-Naphthoic Acid Polymerization (Liquid) Reactor Operating Schedule .....	109

## TABLES

8.6	Liquid Crystal Polymer from p-Hydroxybenzoic Acid and 6-Hydroxy-2-Naphthoic Acid Polymerization (Liquid) Reactor Conditions .....	110
8.7	Liquid Crystal Polymer from p-Hydroxybenzoic Acid and 6-Hydroxy-2-Naphthoic Acid Solid Phase Polymerization Conditions .....	111
8.8	Liquid Crystal Polymer Properties Celanese Type .....	113
8.9	Liquid Crystal Polymer from p-Hydroxybenzoic Acid, and 6-Hydroxy-2-Naphthoic Acid, Neat Polymer Total Capital Investment .....	121
8.10	Liquid Crystal Polymer from p-Hydroxybenzoic Acid, and 6-Hydroxy-2-Naphthoic Acid, Neat Polymer Capital Investment by Section .....	122
8.11	Liquid Crystal Polymer from p-Hydroxybenzoic Acid, and 6-Hydroxy-2-Naphthoic Acid, Neat Polymer Production Costs .....	123
8.12	Liquid Crystal Polymer from p-Hydroxybenzoic Acid, and 6-Hydroxy-2-Naphthoic Acid, Neat Polymer Direct Costs by Section .....	125
8.13	Liquid Crystal Polymer from p-Hydroxybenzoic Acid, and 6-Hydroxy-2-Naphthoic Acid, Neat Polymer Production Costs .....	126
8.14	6-Hydroxy-2-Naphthoic Acid from beta-Naphthol Production Costs .....	128
8.15	Liquid Crystal Polymer from p-Hydroxybenzoic Acid and 6-Hydroxy-2-Naphthoic Acid, Glass Filled Production Costs .....	130