

INTRODUCTION	XVIII
STUDY GOALS AND OBJECTIVES.....	XVIII
REASONS FOR DOING THE STUDY	XVIII
SCOPE.....	XVIII
METHODOLOGY AND SOURCES OF INFORMATION	XIX
UNITS	XIX
RELATED BCC PUBLICATIONS	XIX
REPORTS	XIX
MONTHLY NEWSLETTER	XIX
BCC ON-LINE SERVICES.....	XIX
SUMMARY.....	XXI
<i>SUMMARY TABLE OVERALL CONSUMPTION OF OXIDIZING AND BLEACHING</i>	
<i>AGENTS, THROUGH 2007</i>	<i>XXII</i>
<i>SUMMARY FIGURE OVERALL CONSUMPTION OF OXIDIZING AND BLEACHING</i>	
<i>AGENTS, 2002-2007</i>	<i>XXII</i>
TYPES OF OXIDIZING AND BLEACHING AGENTS.....	1
CHLORINE AND CHLORINATED COMPOUNDS	2
CHLORINE	2
Suppliers	3
SODIUM CHLORATE	3
Applications	3
Suppliers	3
SODIUM CHLORITE	3
Applications	3
Suppliers	4
HYPOCHLORITES.....	4
SODIUM HYPOCHLORITE.....	4
Applications	4
Suppliers	5
CALCIUM HYPOCHLORITE	5
Applications	5
Suppliers	5
OTHER HYPOCHLORITES.....	5
CHLOROISOCYANURATES	5
Applications	6
Suppliers	6
MISCELLANEOUS CHLORINE COMPOUNDS	6
1,3-DICHLORO-5,5-DIMETHYL HYDANTOIN (DCDMH)	6
OXYGEN AND OXYGENATED COMPOUNDS.....	6
Suppliers	7
HYDROGEN PEROXIDE.....	7
Manufacture.....	7
Applications	8

Suppliers	8
OZONE	8
Production Methods.....	8
Applications	8
Suppliers	9
SODIUM PERBORATE	9
Applications	9
Suppliers	9
POTASSIUM PERMANGANATE	9
Applications	10
Suppliers	10
ORGANIC PEROXIDES	10
BENZOYL PEROXIDE	10
OTHER ORGANIC PEROXIDES	11
INORGANIC PEROXIDES	11
SODIUM PEROXIDE	11
CALCIUM PEROXIDE	11
MAGNESIUM PEROXIDE.....	11
SODIUM PERCARBONATE.....	11
OTHER OXYGENATED COMPOUNDS.....	12
PERACETIC AND PEROXYMONOSULFURIC ACID.....	12
METAL OXYACIDS.....	12
NITRIC AND NITROUS ACIDS	12
REDUCING BLEACHES	12
SODIUM HYDROSULFITE	12
Suppliers	13
SULFUR DIOXIDE.....	13
Applications	13
SODIUM BOROHYDRIDE.....	13
Applications	14
Suppliers	14
SODIUM SULFITES.....	14
Applications	14
Suppliers	14
MARKET ANALYSIS.....	15
MARKET BY PRODUCT.....	15
TABLE 1 CONSUMPTION OF OXIDIZING AND BLEACHING AGENTS, BY TYPE, THROUGH 2007 (MILLION LB.).....	16
TABLE 2 CONSUMPTION OF OXIDIZING AND BLEACHING AGENTS, BY TYPE, THROUGH 2007 (\$ MILLIONS).....	16
FIGURE 1 CONSUMPTION OF OXIDIZING AND BLEACHING AGENTS, BY TYPE, 2002-2007 (\$ MILLIONS).....	17
TABLE 3 CONSUMPTION OF OXIDIZING AND BLEACHING AGENTS, BY MAJOR PRODUCT, THROUGH 2007 (MILLION LB.).....	17
TABLE 3 (CONTINUED).....	18

TABLE 4 CONSUMPTION OF OXIDIZING AND BLEACHING AGENTS, BY MAJOR PRODUCT, THROUGH 2007 (\$ MILLIONS).....	18
CHLORINE AND CHLORINATED COMPOUNDS	19
OVERVIEW	19
TABLE 5 CONSUMPTION OF CHLORINE AND CHLORINATED COMPOUNDS IN OXIDIZING AND BLEACHING APPLICATIONS, BY PRODUCT, THROUGH 2007 (MILLION LB.).....	19
TABLE 6 CONSUMPTION OF CHLORINE AND CHLORINATED COMPOUNDS IN OXIDIZING AND BLEACHING APPLICATIONS, BY PRODUCT, THROUGH 2007 (\$ MILLIONS)	20
FIGURE 2 CONSUMPTION OF CHLORINE AND CHLORINATED COMPOUNDS IN OXIDIZING AND BLEACHING APPLICATIONS, BY PRODUCT, 2002-2007 (\$ MILLIONS)	20
SODIUM CHLORATE	21
TABLE 7 CONSUMPTION OF SODIUM CHLORATE IN OXIDIZING AND BLEACHING APPLICATIONS, BY MAJOR END USE, THROUGH 2007 (MILLION LB.).....	21
TABLE 8 CONSUMPTION OF SODIUM CHLORATE IN OXIDIZING AND BLEACHING APPLICATIONS, THROUGH 2007 (\$ MILLIONS).....	22
CHLORINE	22
TABLE 9 CONSUMPTION OF CHLORINE IN OXIDIZING AND BLEACHING APPLICATIONS, BY MAJOR END USE, THROUGH 2007 (MILLION LB.).....	23
TABLE 10 CONSUMPTION OF CHLORINE IN OXIDIZING AND BLEACHING APPLICATIONS, BY MAJOR END USE, THROUGH 2007 (\$ MILLIONS).....	23
SODIUM HYPOCHLORITE.....	23
TABLE 11 CONSUMPTION OF SODIUM HYPOCHLORITE IN OXIDIZING AND BLEACHING APPLICATIONS, BY MAJOR END USE, THROUGH 2007 (MILLION LB.).....	24
TABLE 12 CONSUMPTION OF SODIUM HYPOCHLORITE IN OXIDIZING AND BLEACHING APPLICATIONS, BY MAJOR END USE, THROUGH 2007 (\$ MILLIONS)	24
CALCIUM HYPOCHLORITE	24
TABLE 13 CONSUMPTION OF CALCIUM HYPOCHLORITE IN OXIDIZING AND BLEACHING APPLICATIONS, BY MAJOR END USE, THROUGH 2007 (MILLION LB.).....	25
TABLE 14 CONSUMPTION OF CALCIUM HYPOCHLORITE IN OXIDIZING AND BLEACHING APPLICATIONS, BY MAJOR END USE, THROUGH 2007 (\$ MILLIONS)	25
SODIUM DICHLOROISOCYANURATE.....	25
TABLE 15 CONSUMPTION OF SODIUM DICHLOROISOCYANURATE IN OXIDIZING AND BLEACHING APPLICATIONS, BY MAJOR END USE, THROUGH 2007 (MILLION LB.).....	26
TABLE 16 CONSUMPTION OF SODIUM DICHLOROISOCYANURATE IN OXIDIZING AND BLEACHING APPLICATIONS, BY MAJOR END USE, THROUGH 2007 (\$ MILLIONS)	26
SODIUM CHLORITE	26
TABLE 17 CONSUMPTION OF SODIUM CHLORITE IN OXIDIZING AND BLEACHING APPLICATIONS, BY MAJOR END USE, THROUGH 2007 (MILLION LB.).....	27
TABLE 18 CONSUMPTION OF SODIUM CHLORITE IN OXIDIZING AND BLEACHING APPLICATIONS, BY MAJOR END USE, THROUGH 2007 (\$ MILLIONS)	27

MISCELLANEOUS CHLORINE COMPOUNDS.....	27
OXYGEN AND OXYGENATED COMPOUNDS	28
TABLE 19 CONSUMPTION OF OXYGEN AND OXYGENATED COMPOUNDS IN OXIDIZING AND BLEACHING APPLICATIONS, BY PRODUCT, THROUGH 2007 (MILLION LB.).....	28
TABLE 20 CONSUMPTION OF OXYGEN AND OXYGENATED COMPOUNDS IN OXIDIZING AND BLEACHING APPLICATIONS, BY PRODUCT, THROUGH 2007 (\$ MILLIONS)	29
FIGURE 3 CONSUMPTION OF OXYGEN AND OXYGENATED COMPOUNDS IN OXIDIZING AND BLEACHING APPLICATIONS, BY PRODUCT, 2002-2007 (\$ MILLIONS)	29
OXYGEN.....	30
TABLE 21 CONSUMPTION OF OXYGEN IN OXIDIZING AND BLEACHING APPLICATIONS, BY MAJOR END USE, THROUGH 2007 (MILLION LB.).....	30
TABLE 22 CONSUMPTION OF OXYGEN IN OXIDIZING AND BLEACHING APPLICATIONS, BY MAJOR END USE, THROUGH 2007 (\$ MILLIONS).....	30
HYDROGEN PEROXIDE	31
TABLE 23 CONSUMPTION OF HYDROGEN PEROXIDE IN OXIDIZING AND BLEACHING APPLICATIONS, BY MAJOR END USE, THROUGH 2007 (MILLION LB.).....	31
TABLE 24 CONSUMPTION OF HYDROGEN PEROXIDE IN OXIDIZING AND BLEACHING APPLICATIONS, BY MAJOR END USE, THROUGH 2007 (\$ MILLIONS)	32
OZONE	32
TABLE 25 CONSUMPTION OF OZONE BY MAJOR APPLICATION, THROUGH 2007 (MILLION LB.).....	33
TABLE 26 CONSUMPTION OF OZONE, BY MAJOR END USE, THROUGH 2007 (\$ MILLIONS)	33
SODIUM PERBORATE	33
TABLE 27 CONSUMPTION OF SODIUM PERBORATE IN OXIDIZING AND BLEACHING APPLICATIONS, BY MAJOR END USE, THROUGH 2007 (MILLION LBS.)	34
TABLE 28 CONSUMPTION OF SODIUM PERBORATE IN OXIDIZING AND BLEACHING APPLICATIONS, BY MAJOR END USE, THROUGH 2007 (\$ MILLIONS)	34
SODIUM PERCARBONATE	34
TABLE 29 CONSUMPTION OF SODIUM PERCARBONATE IN OXIDIZING AND BLEACHING APPLICATIONS, BY MAJOR END USE, THROUGH 2007 (MILLION LB.)	35
TABLE 30 CONSUMPTION OF SODIUM PERCARBONATE IN OXIDIZING AND BLEACHING APPLICATIONS, BY MAJOR END USE, THROUGH 2007 (\$ MILLIONS)	35
POTASSIUM PERMANGANATE	35
TABLE 31 CONSUMPTION OF POTASSIUM PERMANGANATE IN OXIDIZING AND BLEACHING APPLICATIONS, BY MAJOR END USE, THROUGH 2007 (MILLION LB.).....	36
TABLE 32 CONSUMPTION OF POTASSIUM PERMANGANATE IN OXIDIZING AND BLEACHING APPLICATIONS, BY MAJOR END USE, THROUGH 2007 (\$ MILLIONS)	36
OTHER OXYGENATED COMPOUNDS	36
REDUCING BLEACHES.....	36

Overview	36
TABLE 33 CONSUMPTION OF REDUCING BLEACHES, BY MAJOR PRODUCT, THROUGH 2007 (MILLION LB.).....	37
TABLE 34 CONSUMPTION OF REDUCING BLEACHES, BY MAJOR PRODUCT, THROUGH 2007 (\$ MILLIONS).....	37
FIGURE 4 CONSUMPTION OF REDUCING BLEACHES, BY MAJOR PRODUCT, 2002-2007 (\$ MILLIONS).....	38
SULFUR DIOXIDE	38
TABLE 35 CONSUMPTION OF SULFUR DIOXIDE IN BLEACHING APPLICATIONS, BY MAJOR END USE, THROUGH 2007 (MILLION LB.).....	39
TABLE 36 CONSUMPTION OF SULFUR DIOXIDE IN BLEACHING APPLICATIONS, BY MAJOR END USE, THROUGH 2007 (\$ MILLIONS).....	39
SODIUM HYDROSULFITE	39
TABLE 37 CONSUMPTION OF SODIUM HYDROSULFITE IN BLEACHING APPLICATIONS, BY MAJOR END USE, THROUGH 2007 (MILLION LB.).....	40
TABLE 38 CONSUMPTION OF SODIUM HYDROSULFITE IN BLEACHING APPLICATIONS, BY MAJOR END USE, THROUGH 2007 (\$ MILLIONS).....	40
TABLE 39 CONSUMPTION OF SODIUM SULFITES IN BLEACHING APPLICATIONS, BY MAJOR END USE, THROUGH 2007 (MILLION LB.).....	41
TABLE 40 CONSUMPTION OF SODIUM SULFITES IN BLEACHING APPLICATIONS BY MAJOR END USE, THROUGH 2007 (\$ MILLIONS).....	41
SODIUM BOROHYDRIDE.....	42
MARKET BY END USE	42
OVERVIEW	42
TABLE 41 OVERALL CONSUMPTION OF OXIDIZING AND BLEACHING AGENTS, BY MAJOR END USE, THROUGH 2007 (MILLION LB.).....	42
TABLE 42 OVERALL CONSUMPTION OF OXIDIZING AND BLEACHING AGENTS, BY MAJOR END USE, THROUGH 2007 (\$ MILLIONS).....	43
PULP BLEACHING.....	43
Chlorine.....	44
Caustic Extraction	44
Chlorine Dioxide Bleaching.....	44
Calcium Hypochlorite.....	45
Oxygen Bleaching.....	45
Hydrogen Peroxide	45
Ozone.....	45
Sodium Hydrosulfite.....	46
Government Regulation.....	46
Consumption and Forecast.....	46
TABLE 43 NORTH AMERICAN CONSUMPTION OF BLEACHING AGENTS IN WOOD PULP, BY MAJOR PRODUCT, THROUGH 2007 (MILLION LB.).....	47
TABLE 44 NORTH AMERICAN CONSUMPTION OF BLEACHING AGENTS IN WOOD PULP, BY MAJOR PRODUCT, THROUGH 2007 (\$ MILLIONS).....	47
TABLE 44 (CONTINUED).....	48
FIGURE 5 NORTH AMERICAN CONSUMPTION OF BLEACHING AGENTS IN WOOD PULP, BY MAJOR PRODUCT, 2002-2007 (\$ MILLIONS).....	48
INDUSTRIAL WATER TREATMENT.....	48
Consumption and Forecast	49
TABLE 45 CONSUMPTION OF OXIDIZING AGENTS IN INDUSTRIAL WATER TREATMENT, BY MAJOR PRODUCT, THROUGH 2007 (MILLION LB.).....	49

<i>TABLE 46 CONSUMPTION OF OXIDIZING AGENTS IN INDUSTRIAL WATER TREATMENT BY MAJOR PRODUCT, THROUGH 2007 (\$ MILLIONS)</i>	50
<i>FIGURE 6 CONSUMPTION OF OXIDIZING AGENTS IN INDUSTRIAL WATER TREATMENT BY MAJOR PRODUCT, 2002-2007 (\$ MILLIONS)</i>	50
MUNICIPAL WATER TREATMENT	51
Drinking Water.....	51
Disinfectants	51
Taste and Odor Control.....	51
Trihalomethanes (THMs).....	52
Dechlorination	52
Sewage Treatment.....	52
Disinfection	53
Odor Control.....	53
Consumption and Forecast.....	53
<i>TABLE 47 CONSUMPTION OF OXIDIZING AGENTS IN MUNICIPAL WATER TREATMENT BY MAJOR PRODUCT, THROUGH 2007 (MILLION LB.)</i>	54
<i>TABLE 48 CONSUMPTION OF OXIDIZING AGENTS IN MUNICIPAL WATER TREATMENT BY MAJOR PRODUCT, THROUGH 2007 (\$ MILLIONS)</i>	55
<i>FIGURE 7 CONSUMPTION OF OXIDIZING AGENTS IN MUNICIPAL WATER TREATMENT BY MAJOR PRODUCT, 2002-2007 (\$ MILLIONS)</i>	55
<i>FIGURE 7 (CONTINUED)</i>	56
CLEANING COMPOUNDS.....	56
The Industry	56
Consumption and Forecast.....	56
<i>TABLE 49 CONSUMPTION OF OXIDIZING AND BLEACHING AGENTS IN CLEANING COMPOUNDS BY MAJOR PRODUCT, THROUGH 2007 (MILLION LB.)</i>	57
<i>TABLE 50 CONSUMPTION OF OXIDIZING AND BLEACHING AGENTS IN CLEANING COMPOUNDS, BY MAJOR PRODUCT, THROUGH 2007 (\$ MILLIONS)</i>	58
<i>FIGURE 8 CONSUMPTION OF OXIDIZING AND BLEACHING AGENTS IN CLEANING COMPOUNDS, BY MAJOR PRODUCT, 2002-2007 (\$ MILLIONS)</i>	58
<i>TABLE 51 OVERALL CONSUMPTION OF OXIDIZING AND BLEACHING AGENTS IN CLEANING COMPOUNDS BY MAJOR APPLICATION, THROUGH 2007 (MILLION LB.)</i>	59
<i>TABLE 52 OVERALL CONSUMPTION OF OXIDIZING AND BLEACHING AGENTS IN CLEANING COMPOUNDS BY MAJOR APPLICATION, THROUGH 2007 (\$ MILLIONS)</i>	59
Household Laundry Bleaches	59
Consumption and Forecast.....	60
<i>TABLE 53 CONSUMPTION OF BLEACHING AGENTS IN HOUSEHOLD LAUNDRY BLEACHES, BY MAJOR PRODUCT, THROUGH 2007 (MILLION LB.)</i>	61
<i>TABLE 54 CONSUMPTION OF BLEACHING AGENTS IN HOUSEHOLD LAUNDRY BLEACHES, BY MAJOR PRODUCT, THROUGH 2007 (\$ MILLIONS)</i>	61
Institutional Laundry Bleaches	61
Consumption and Forecast.....	62
<i>TABLE 55 CONSUMPTION OF BLEACHING AGENTS IN INSTITUTIONAL LAUNDRY BLEACHES, BY MAJOR PRODUCT, THROUGH 2007 (MILLION LB.)</i>	62
<i>TABLE 56 CONSUMPTION OF BLEACHING AGENTS IN INSTITUTIONAL LAUNDRY BLEACHES, BY MAJOR PRODUCT, THROUGH 2007 (\$ MILLIONS)</i>	63

Dishwasher Detergents.....	63
TABLE 57 SAMPLE SOLID DISHWASHER DETERGENT FORMULATION.....	63
TABLE 58 SAMPLE LIQUID DISHWASHER DETERGENT FORMULATION (%).....	64
Consumption and Forecast.....	64
TABLE 59 CONSUMPTION OF BLEACHING AGENTS IN DISHWASHER DETERGENTS, BY MAJOR PRODUCT, THROUGH 2007 (MILLION LB.).....	64
TABLE 60 CONSUMPTION OF BLEACHING AGENTS IN DISHWASHER DETERGENTS, BY MAJOR PRODUCT, THROUGH 2007 (\$ MILLIONS).....	65
Denture Cleaners.....	65
TABLE 61 SAMPLE DENTURE CLEANER TABLET FORMULATION (%).....	65
Consumption and Forecast.....	66
TABLE 62 CONSUMPTION OF BLEACHING AGENTS IN DENTURE CLEANERS, BY MAJOR PRODUCT, THROUGH 2007 (MILLION LB.).....	66
TABLE 63 CONSUMPTION OF BLEACHING AGENTS IN DENTURE CLEANERS BY MAJOR PRODUCT, THROUGH 2007 (\$ MILLIONS).....	66
Tooth Whiteners	66
Consumption and Forecast.....	67
TABLE 64 CONSUMPTION OF BLEACHING AGENTS IN TOOTH WHITENERS, BY MAJOR PRODUCT, THROUGH 2007 (MILLION LB.).....	67
TABLE 65 CONSUMPTION OF BLEACHING AGENTS IN TOOTH WHITENERS, BY MAJOR PRODUCT, THROUGH 2007 (\$ MILLIONS).....	68
Scouring Cleansers	68
Consumption and Forecast.....	68
TABLE 66 CONSUMPTION OF BLEACHING AGENTS IN SCOURING CLEANSERS, BY MAJOR PRODUCT, THROUGH 2007 (MILLION LB.).....	69
TABLE 67 CONSUMPTION OF BLEACHING AGENTS IN SCOURING CLEANSERS, BY MAJOR PRODUCT, THROUGH 2007 (\$ MILLIONS).....	69
Drain Cleaners.....	69
Consumption and Forecast.....	69
Miscellaneous Cleaners.....	70
Toilet Cleaners	70
Other Cleaners.....	70
Consumption and Forecast.....	70
TEXTILES	70
Cotton and Cotton-Polyester	71
Other Fibers.....	71
Consumption and Forecast.....	71
TABLE 68 CONSUMPTION OF TEXTILE BLEACHING AGENTS, BY MAJOR PRODUCT, THROUGH 2007 (MILLION LB.).....	72
TABLE 69 CONSUMPTION OF TEXTILE BLEACHING AGENTS, BY MAJOR PRODUCT, THROUGH 2007 (\$ MILLIONS).....	72
FIGURE 9 CONSUMPTION OF TEXTILE BLEACHING AGENTS, BY MAJOR PRODUCT, 2002-2007 (\$ MILLIONS).....	73
FOOD PROCESSING	73
Alcoholic Beverages	73
Flour Bleaching	74
Other Uses	74
Consumption and Forecast.....	74

TABLE 70 CONSUMPTION OF BLEACHING AGENTS IN FOOD PROCESSING, BY MAJOR PRODUCT, THROUGH 2007 (MILLION LB.).....	74
TABLE 71 CONSUMPTION OF BLEACHING AGENTS IN FOOD PROCESSING BY MAJOR PRODUCT, THROUGH 2007 (\$ MILLIONS).....	75
FIGURE 10 CONSUMPTION OF BLEACHING AGENTS IN FOOD PROCESSING BY MAJOR PRODUCT, THROUGH 2007 (\$ MILLIONS).....	75
MINING AND MINERAL PROCESSING	75
Consumption and Forecast	76
TABLE 72 CONSUMPTION OF OXIDIZING AND BLEACHING AGENTS IN MINING AND MINERAL PROCESSING, BY MAJOR PRODUCT, THROUGH 2007 (MILLION LB.).....	76
TABLE 73 CONSUMPTION OF OXIDIZING AND BLEACHING AGENTS IN MINING AND MINERAL PROCESSING, BY MAJOR PRODUCT, THROUGH 2007 (\$ MILLIONS).....	77
FIGURE 11 CONSUMPTION OF OXIDIZING AND BLEACHING AGENTS IN MINING AND MINERAL PROCESSING, BY MAJOR PRODUCT, 2002-2007 (\$ MILLIONS)	77
ELECTRONICS.....	78
Consumption and Forecast	78
Miscellaneous End Uses.....	78
TECHNOLOGY	79
METHODS OF MANUFACTURE	79
HYDROGEN PEROXIDE.....	79
OXYGEN.....	79
OZONE	80
CHLORINE	80
RESEARCH AND DEVELOPMENT	81
PATENTS	82
Assignee	82
TABLE 74 U.S. PATENTS ISSUED ON BLEACHING AGENTS, BY MAJOR ASSIGNEE, 1997-2002.....	82
Products	83
TABLE 75 U.S. PATENTS ISSUED ON BLEACHING AGENTS, BY SELECTED PRODUCTS, 1997-2002.....	83
GOVERNMENT REGULATIONS	84
WATER POLLUTION	84
THE FEDERAL WATER POLLUTION CONTROL ACT (FWPCA)	84
THE SAFE DRINKING WATER ACT (SDWA).....	85
TOXIC SUBSTANCES	85
THE TOXIC RELEASE INVENTORY (TRI)	86
Safety	86
OTHER LEGISLATION	86
THE SOLID WASTE DISPOSAL ACT	86
THE CLEAN AIR ACT.....	87
THE CLUSTER RULE.....	87

RECENT DEVELOPMENTS	87
RECENT DEVELOPMENTS, CONTINUED	88
INDUSTRY STRUCTURE	89
MARKET BY MAJOR PRODUCER.....	89
TABLE 76 SALES OF OXIDIZING AND BLEACHING AGENTS, BY MAJOR PRODUCER, 2002	89
FIGURE 12 SALES OF OXIDIZING AND BLEACHING AGENTS, BY MAJOR PRODUCER, 2002 (%).....	90
MARKETING AND DISTRIBUTION	90
PULP BLEACHING.....	91
CLEANING COMPOUNDS.....	91
INTERNATIONAL ASPECTS	92
FOREIGN OWNERSHIP.....	92
TABLE 77 FOREIGN PRODUCERS OF OXIDIZING AND BLEACHING AGENTS OPERATING IN NORTH AMERICA.....	92
REGULATIONS.....	92
PULP BLEACHING.....	93
COMPANY PROFILES	94
PRODUCERS	94
AIR LIQUIDE AMERICA CORP.....	94
AIR PRODUCTS & CHEMICALS, INC.....	94
ARCH CHEMICALS, INC.	94
ATOFINA CHEMICALS INC.....	95
BOC GASES, INC.	95
CARUS CHEMICAL CO.....	95
CLARIANT CORP.....	96
CROMPTON CORP.....	96
DEGUSSA CORP.	96
DOW CHEMICAL CO.....	97
E. I. DUPONT DE NEMOURS & CO., INC.....	97
EKA CHEMICALS INC.....	97
FMC CORP.....	98
FINNCHEM USA, INC.....	98
KERR-MCGEE CHEMICAL CORP.....	98
NEXEN INC.....	99
OCCIDENTAL CHEMICAL CORP.....	99
OLIN CORPORATION	100
PPG INDUSTRIES, INC.....	100
PRAXAIR, INC.....	100
ROHM AND HAAS CO.....	101
SOLVAY INTEROX	101
STERLING CHEMICALS, INC.....	101
VULCAN CHEMICALS.....	102

DISTRIBUTORS	102
ASHLAND DISTRIBUTION CHEMICAL CO.	102
UNIVAR USA	102
Univar USA, Continued	103
APPENDIX I ABSTRACTS OF SELECTED PATENTS	104
ABSTRACTS OF SELECTED PATENTS, CONTINUED	105
ABSTRACTS OF SELECTED PATENTS, CONTINUED	106