

GENERAL LABORATORY EQUIPMENT: GLOBAL MARKETS



IAS078A
May 2013

Bhavna Joshi
Project Analyst

ISBN: 1-56965-417-4

bcc | Research
Market Forecasting

BCC Research
49 Walnut Park, Building 2
Wellesley, MA 02481
866-285-7215, 781-489-7301
www.bccresearch.com
Custom Reports:
carol.laverty@bccresearch.com

TABLE OF CONTENTS

TOPIC	PAGE NO.
CHAPTER 1 INTRODUCTION	2
STUDY AND OBJECTIVE	2
STUDY BACKGROUND	2
SCOPE OF THE REPORT	3
INTENDED AUDIENCE	3
SOURCE OF INFORMATION AND METHODOLOGY	3
ANALYST CREDENTIALS	4
RELATED BCC REPORTS	4
BCC ONLINE SERVICES	5
DISCLAIMER	5
CHAPTER 2 EXECUTIVE SUMMARY	7
<i>SUMMARY TABLE GLOBAL MARKET FOR GENERAL LABWARE BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	7
<i>SUMMARY FIGURE GLOBAL MARKET FOR GENERAL LABWARE BY GEOGRAPHIC REGION, 2011-2017 (\$ MILLIONS)</i>	7
CHAPTER 3 MARKET OVERVIEW	10
<i>FIGURE 1 HISTORY AND EVOLUTION OF CLINICAL LABORATORIES</i>	10
EVOLUTION AND COMPONENTS OF GENERAL LABWARE MARKET	10
<i>FIGURE 2 COMPONENTS OF LABORATORY EQUIPMENT</i>	11
TOP TECHNOLOGY TRENDS IN LABORATORY EQUIPMENT MARKET	12
ROBOTICS	13
Advantages and Disadvantages of Robotics	14
LABORATORY AUTOMATION	14
SHORTER TIME, LOWER COST	17
LEVEL OF AUTOMATION AND GENERAL LABWARE EQUIPMENT	17
Flexibility and Specificity	18
Decreases in Volume	18
LAB INFORMATION MANAGEMENT SYSTEMS	19
CARBON NANOTUBES	20
REGULATORY FRAMEWORK	21
CONVENTIONAL GENERAL LABWARE LEAD THE MARKET	21
<i>FIGURE 3 GENERAL LABWARE MARKET BY EQUIPMENT (%)</i>	21
EXPANDING POTENTIAL OF GENERAL LABWARE APPLICATIONS	22
<i>FIGURE 4 COMPARATIVE ANALYSIS: CURRENT VERSUS FUTURE POTENTIAL OF GENERAL LABWARE APPLICATIONS</i>	23
<i>DURABLE AND PORTABLE FEATURES SHIFTING GLASS-BASED MATERIALS TO PLASTICS</i>	23
<i>FIGURE 5 BUYING CRITERIA: GLASS VERSUS PLASTIC GENERAL LABWARE</i>	24
CHAPTER 4 GLOBAL LABWARE MARKET	27
HISTORICAL PERSPECTIVE OF LABWARE MATERIALS	27
MARKET DRIVERS	27
INCREASE IN RESEARCH AND DEVELOPMENT ACTIVITIES	28

TOPIC	PAGE NO.
INCREASED BUDGETS FOR PATIENT CARE LABORATORIES AND CONSEQUENTLY MORE DEMAND FOR LABWARE	28
INCREASE IN DEMAND FOR PLASTIC LABWARE	28
INCREASE IN DEMAND FOR GLASS LABWARE	29
GROWTH IN DEMAND FOR MORE EFFICIENT PRODUCTS TO PRODUCE BETTER AND ACCURATE RESULTS	29
REVIVAL OF END-USE SECTORS IN DEVELOPED ECONOMIES	29
RESTRAINTS	29
COST PRESSURE	30
TRENDS IN DEVELOPING ECONOMIES	30
TRENDS IN DEVELOPED ECONOMIES	30
LIMITED SCOPE FOR INNOVATION	30
OPPORTUNITY ANALYSIS	30
MARKETS CAN BE TAPPED WHERE LABORATORIES' USE OF CHEMICALS IS VERY HIGH	30
OPPORTUNITIES LIE IN THE RESEARCH AND DEVELOPMENT OF NEW TYPES OF GLASS AND PLASTIC	31
INCREASED RESEARCH AND DEVELOPMENT ACTIVITIES IN THE EMERGING MARKETS	31
LABORATORIES BUDGETS EXPECTED TO GO UP IN THE U.S.	31
CHAPTER 5 GENERAL LABWARE MARKET BY PRODUCT CATEGORY	33
TABLE 1 GLOBAL MARKET FOR GENERAL LABWARE BY PRODUCT CATEGORIES, THROUGH 2017 (\$ MILLIONS)	33
BEAKERS	35
TABLE 2 GLOBAL MARKET FOR LABORATORY BEAKERS, 2012-2017 (\$ MILLIONS)	35
TABLE 3 GLOBAL MARKET FOR BEAKERS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	36
LOW FORM BEAKERS	36
TABLE 4 GLOBAL MARKET FOR LOW FORM BEAKERS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	36
TALL FORM BEAKERS	37
TABLE 5 GLOBAL MARKET FOR TALL FORM BEAKERS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	37
FLAT FORM BEAKERS OR CRYSTALLIZERS	37
TABLE 6 GLOBAL MARKET FOR FLAT FORM BEAKERS OR CRYSTALLIZERS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	37
OTHERS	38
TABLE 7 GLOBAL MARKET FOR OTHER LABORATORY BEAKERS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	38
Autoclavable Beakers	38
Electrolytic Beakers	38
BOTTLES	38
TABLE 8 GLOBAL MARKET FOR LABORATORY BOTTLES BY PRODUCT CATEGORIES, THROUGH 2017 (\$ MILLIONS)	39
TABLE 9 GLOBAL MARKET FOR LABORATORY BOTTLES BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	39
BOTTLES WITH NARROW NECK	40
TABLE 10 GLOBAL MARKET FOR LABORATORY BOTTLES WITH NARROW NECK BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	40

TOPIC	PAGE NO.
PLASTIC REAGENT BOTTLES	40
TABLE 11 GLOBAL MARKET FOR LABORATORY PLASTIC REAGENT BOTTLES BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	41
BURETTES	41
TABLE 12 GLOBAL MARKET FOR LABORATORY BURETTE BY PRODUCT CATEGORIES, THROUGH 2017 (\$ MILLIONS)	41
TABLE 13 GLOBAL MARKET FOR BURETTES BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	42
AUTOMATIC BURETTES	42
TABLE 14 GLOBAL MARKET FOR AUTOMATIC BURETTES BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	42
BURETTE WITH STRAIGHT STOP-COCK AND INTERCHANGEABLE STOPPER	43
TABLE 15 GLOBAL MARKET FOR BURETTES WITH STRAIGHT STOPCOCK BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	43
TABLE 16 GLOBAL MARKET FOR BURETTES WITH INTERCHANGEABLE STOPPERS BY GEOGRAPHIC REGION, 2012-2017 (\$ MILLIONS)	43
FLASKS	44
TABLE 17 GLOBAL MARKET FOR LABORATORY FLASKS BY PRODUCT CATEGORIES, THROUGH 2017 (\$ MILLIONS)	44
ERLENMEYER FLASKS OR CONICAL FLASKS	44
TABLE 18 GLOBAL MARKET FOR ERLENMEYER FLASKS OR CONICAL FLASKS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	45
FLORENCE FLASKS	45
TABLE 19 GLOBAL MARKET FOR FLORENCE FLASKS OR CONICAL FLASKS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	45
VOLUMETRIC FLASKS	46
TABLE 20 GLOBAL MARKET FOR VOLUMETRIC FLASKS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	46
FERNBACH FLASKS	47
TABLE 21 GLOBAL MARKET FOR FERNBACH FLASKS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	47
OTHERS	47
TABLE 22 GLOBAL MARKET FOR OTHER LABORATORY FLASKS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	48
Retort Flasks	48
Schlenk Flasks	48
Buchner /Sidearm/Suction Flasks	48
Culture Flasks	48
Dewar Flasks	48
FUNNELS	48
TABLE 23 GLOBAL MARKET FOR FUNNELS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	49
MEASURING CYLINDERS	50
TABLE 24 GLOBAL MARKET FOR MEASURING CYLINDERS BY PRODUCT CATEGORIES, THROUGH 2017 (\$ MILLIONS)	50
GLASS CYLINDERS	50
TABLE 25 GLOBAL MARKET FOR GLASS CYLINDERS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	51
PLASTIC CYLINDERS	51

TOPIC	PAGE NO.
<i>TABLE 26 GLOBAL MARKET FOR PLASTIC CYLINDERS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	52
Polypropylene Cylinders	52
Polymethylpentene (PMP) Cylinders	52
OTHER CYLINDERS	52
<i>TABLE 27 GLOBAL MARKET FOR OTHERS CYLINDERS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	53
PETRI DISH/AGAR PLATES	53
<i>TABLE 28 GLOBAL MARKET FOR PETRI DISH/AGAR PLATES BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	53
PIPETTES	54
<i>TABLE 29 GLOBAL MARKET FOR LABORATORY PIPETTES BY PRODUCT CATEGORIES, THROUGH 2017 (\$ MILLIONS)</i>	54
<i>TABLE 30 GLOBAL MARKET FOR LABORATORY PIPETTES BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	55
VARIABLE VOLUME MICROPIPETTE	55
<i>TABLE 31 GLOBAL MARKET FOR LABORATORY VARIABLE VOLUME PIPETTES BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	56
PASTEUR PIPETTE	56
<i>TABLE 32 GLOBAL MARKET FOR PASTEUR PIPETTES BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	56
PIPETTES USED IN PATCH CLAMP TECHNIQUE OF ISOLATING ION CHANNELS	57
<i>TABLE 33 GLOBAL MARKET FOR PIPETTES USED IN PATCH CLAMP TECHNIQUE OF ISOLATING ION CHANNELS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	57
MICROFLUIDIC PIPETTE	57
<i>TABLE 34 GLOBAL MARKET FOR MICROFLUIDIC PIPETTES BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	58
GRADUATED PIPETTES	58
<i>TABLE 35 GLOBAL MARKET FOR GRADUATED PIPETTES BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	58
ELECTRONIC MICROPIPETTES	59
<i>TABLE 36 GLOBAL MARKET FOR ELECTRONIC MICROPIPETTES BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	59
OTHERS	59
<i>TABLE 37 GLOBAL MARKET FOR OTHER PIPETTES BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	59
Double-Barreled Micropipette Technique	60
Volumetric Pipettes	60
RACKS	60
<i>TABLE 38 GLOBAL MARKET FOR LABORATORY RACKS BY PRODUCT CATEGORIES, THROUGH 2017 (\$ MILLIONS)</i>	60
TEST TUBE RACKS	60
<i>TABLE 39 GLOBAL MARKET FOR TEST TUBE RACKS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	61
MULTIBOTTLE RACKS	61
<i>TABLE 40 GLOBAL MARKET FOR MULTIBOTTLE RACKS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	61
MICROCENTRIFUGE TUBE RACKS	62
<i>TABLE 41 GLOBAL MARKET FOR MICROCENTRIFUGE TUBE RACKS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	62

TOPIC	PAGE NO.
OTHERS	62
TABLE 42 GLOBAL MARKET FOR OTHER LABORATORY RACKS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	63
Pipette Racks	63
Micropipette Racks	63
Autoclavable Baskets	63
SLIDES	63
TABLE 43 GLOBAL MARKET FOR LABORATORY SLIDES BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	64
CENTRIFUGE TUBE	64
TABLE 44 GLOBAL MARKET FOR CENTRIFUGE TUBE BY PRODUCT CATEGORIES, THROUGH 2017 (\$ MILLIONS)	65
TABLE 45 GLOBAL MARKET FOR CENTRIFUGE TUBE BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	65
MICROCENTRIFUGE TUBES - SCREW AND SNAP CAPS	66
TABLE 46 GLOBAL MARKET FOR MICROCENTRIFUGE TUBE- SCREWCAP BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	66
TABLE 47 GLOBAL MARKET FOR MICROCENTRIFUGE TUBE - SNAPCAP BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	66
METAL AND PLASTIC CLAMPS	67
TABLE 48 GLOBAL CLAMPS METAL AND PLASTICS MARKET BY PRODUCT CATEGORY, THROUGH 2017 (\$ MILLIONS)	67
TABLE 49 GLOBAL MARKET FOR CLAMPS METALS AND PLASTICS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	67
MICROPLATES AND OTHER TOOLS (PREFILLED AND OTHERS)	68
TABLE 50 GLOBAL MARKET FOR MICROPLATES AND OTHER TOOLS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	68
SPECIMEN CUPS	68
TABLE 51 GLOBAL MARKET FOR SPECIMEN CUPS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	69
STIRRING RODS	69
TABLE 52 GLOBAL MARKET FOR STIRRING RODS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	69
TANKS	70
TABLE 53 GLOBAL MARKET FOR LABORATORY TANK BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	70
TEST TUBES	71
TABLE 54 GLOBAL MARKET FOR TEST TUBES BY PRODUCT CATEGORIES, THROUGH 2017 (\$ MILLIONS)	72
TABLE 55 GLOBAL MARKET FOR TEST TUBES BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	72
CULTURE TUBES	72
TABLE 56 GLOBAL MARKET FOR CULTURE TEST TUBES BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	73
OTHER CONVENTIONAL AND BLUE TOP TUBES	73
TABLE 57 GLOBAL MARKET FOR OTHER CONVENTIONAL AND BLUE TOP TUBES BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	73
2-D BARCODED STORAGE TUBES	74
TABLE 58 GLOBAL MARKET FOR 2-D BARCODED STORAGE TUBES BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	74
TEST TUBE STOPPERS	74

TOPIC	PAGE NO.
<i>TABLE 59 GLOBAL MARKET FOR TEST TUBE STOPPERS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	75
TUBING	75
<i>TABLE 60 GLOBAL MARKET FOR TUBING BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	75
VIALS, CUVETTES AND CELLS	76
<i>TABLE 61 GLOBAL MARKET FOR VIALS, CUVETTES AND CELLS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	76
DESICCATORS	77
<i>TABLE 62 GLOBAL MARKET FOR DESICCATORS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	77
DISPOSAL PRODUCTS	77
<i>TABLE 63 GLOBAL MARKET FOR DISPOSAL PRODUCTS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	78
BENCH TOP WASTE CONTAINERS	78
LARGE WASTE CONTAINERS	78
AUTOCLAVABLE DISPOSAL BAGS	78
BIOHAZARDOUS WASTE CONTAINERS	79
HANDCARE	79
<i>TABLE 64 GLOBAL MARKET FOR HANDCARE PRODUCTS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	79
Hand Sanitizing Gels and Wipes	79
Alcohol Hand Rinses	79
Antibacterial Soaps	80
HAND GLOVES	80
Latex (Natural Rubber Gloves)	80
Nitrile Gloves	80
Butyl Rubber Gloves	80
Neoprene Gloves	80
Norfoil Gloves	80
Viton Gloves	80
Polyvinyl Chloride Gloves	81
Polyvinyl Alcohol Gloves	81
Nomex Gloves	81
LAB ORGANIZERS, STATIONERY AND CONTAINERS	81
<i>TABLE 65 GLOBAL MARKET FOR LAB ORGANIZERS AND STATIONERY BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	81
ACRYLIC DISPENSING BINS AND STACKABLE ACRYLIC DRAWERS	82
LABORATORY NOTEBOOKS	82
POLYOLEFIN PRESSURE-SENSITIVE LABELS	82
LAB CONTAINERS AND STORAGE	82
Plastic Containers	82
Drawer Organizers	82
FILTRATION KITS	82
<i>TABLE 66 GLOBAL MARKET FOR LAB FILTRATION KITS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	83
CHAPTER 6 GENERAL LABWARE MARKET BY END USERS	86

TOPIC	PAGE NO.
<i>TABLE 67 GLOBAL MARKET FOR GENERAL LABWARE BY END USERS, THROUGH 2017 (\$ MILLIONS)</i>	86
BIOTECH/LIFE SCIENCES RESEARCH	86
<i>TABLE 68 GLOBAL MARKET FOR BIOTECH/LIFE SCIENCES RESEARCH BY END USERS, THROUGH 2017 (\$ MILLIONS)</i>	86
<i>TABLE 69 GLOBAL MARKET FOR GENERAL LABWARE IN BIOTECH/LIFE SCIENCES RESEARCH BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	87
BIOMARKER RESEARCH	88
<i>TABLE 70 GLOBAL MARKET FOR GENERAL LABWARE IN BIOMARKER RESEARCH BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	88
BIOPRODUCTION	90
<i>TABLE 71 GLOBAL MARKET GENERAL LABWARE IN BIOPRODUCTION BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	90
CELL CULTURE	92
<i>TABLE 72 GLOBAL MARKET GENERAL LABWARE IN CELL CULTURES BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	92
PROTEOMICS	94
<i>TABLE 73 GLOBAL MARKET GENERAL LABWARE IN PROTEOMICS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	95
STEM CELLS	95
<i>TABLE 74 GLOBAL MARKET GENERAL LABWARE IN STEM CELLS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	96
CLINICAL LABORATORIES	97
<i>TABLE 75 GLOBAL MARKET FOR GENERAL LABWARE IN CLINICAL LABORATORIES BY END USERS, THROUGH 2017 (\$ MILLIONS)</i>	98
<i>TABLE 76 GLOBAL MARKET FOR GENERAL LABWARE IN CLINICAL LABORATORIES BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	98
BLOOD BANK	99
<i>TABLE 77 GLOBAL MARKET FOR GENERAL LABWARE IN BLOOD BANKS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	99
CLINICAL CHEMISTRY	100
<i>TABLE 78 GLOBAL MARKET FOR GENERAL LABWARE IN CLINICAL CHEMISTRY BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	102
CLINICAL CONTROLS/STANDARDS	102
<i>TABLE 79 GLOBAL MARKET FOR GENERAL LABWARE IN CLINICAL CONTROLS/STANDARDS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	103
HISTOLOGY	103
<i>TABLE 80 GLOBAL MARKET FOR GENERAL LABWARE IN HISTOLOGY BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	104
IN VITRO FERTILIZATION AND OTHERS	104
<i>TABLE 81 GLOBAL MARKET FOR GENERAL LABWARE IN IVF BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	105
<i>TABLE 82 GLOBAL MARKET FOR GENERAL LABWARE IN OTHER CLINICAL LABORATORY APPLICATIONS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	105
FORENSIC AND OTHERS	105
<i>TABLE 83 GLOBAL MARKET FOR GENERAL LABWARE IN FORENSIC AND OTHER APPLICATIONS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	106
CHAPTER 7 GENERAL LABWARE MARKET BY MATERIALS	109
PLASTICWARE - OVERVIEW	109

TOPIC	PAGE NO.
<i>TABLE 84 GLOBAL MARKET FOR PLASTIC GENERAL LABWARE BY PRODUCT CATEGORIES, THROUGH 2017 (\$ MILLIONS)</i>	110
KEY ADVANTAGES OF USING PLASTICS	110
MERGERS AND ACQUISITIONS TRENDS IN THE PLASTIC INDUSTRY	111
MARKET DYNAMICS	112
Drivers	112
Restrains	113
Opportunities	113
MARKET SEGMENTATION	113
Beakers	113
Bottles	114
Flasks	114
Funnels	114
Measuring Cylinders	114
Pipette and Pipette Tips	114
Racks	114
Tanks	114
Test Tubes	115
Tubings	115
Vials	115
Others	115
ANALYSIS OF SAFETY MEASURES IN LABS	115
TYPES OF PLASTICS USED FOR GENERAL LABWARE	116
<i>TABLE 85 GLOBAL MARKET FOR GENERAL LABWARE BY TYPES OF PLASTICS, THROUGH 2017 (\$ MILLIONS)</i>	116
Polycarbonate	116
<i>TABLE 86 GLOBAL MARKET FOR POLYCARBONATE PLASTIC GENERAL LABWARE BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	117
Polyethylene (PE)	117
<i>TABLE 87 GLOBAL MARKET FOR POLYETHYLENE PLASTIC GENERAL LABWARE BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	117
Polymethylpentene (PMP)	118
<i>TABLE 88 GLOBAL MARKET FOR POLYMETHYLPENTENE (PMP) PLASTIC GENERAL LABWARE BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	118
Polystyrene (PS)	118
<i>TABLE 89 GLOBAL MARKET FOR POLYSTYRENE (PS) PLASTIC GENERAL LABWARE BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	118
Polyvinyl Chloride (PVC)	119
<i>TABLE 90 GLOBAL MARKET FOR POLYVINYL CHLORIDE (PVC) PLASTIC GENERAL LABWARE BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	119
Teflon (FEP) and (TFE)	119
<i>TABLE 91 GLOBAL MARKET FOR TEFLON (FEP) AND (TFE) PLASTIC GENERAL LABWARE BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	119
Others	120
<i>TABLE 92 GLOBAL MARKET FOR OTHER PLASTIC GENERAL LABWARE BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	120
<i>TABLE 93 COMMON LABORATORY RESINS AND THEIR PROPERTIES</i>	120
Plastic Molding Techniques	122
Shear Controlled Orientation in Injection Moulding (SCORIM)	122

TOPIC	PAGE NO.
Liquid Injection Molding (LIM) Process	123
GLASSWARE - OVERVIEW	123
<i>TABLE 94 GLOBAL MARKET FOR GLASS GENERAL LABWARE BY PRODUCT CATEGORIES, THROUGH 2017 (\$ MILLIONS)</i>	123
<i>TABLE 95 GLOBAL MARKET FOR GLASS GENERAL LABWARE BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	124
MARKET SEGMENTATION	125
Beakers	125
Bottles	125
Burettes	125
Flasks	126
Funnels	126
Measuring Cylinders	126
Petri Dishes	126
Pipette and Pipette Tips	126
Slides	126
Specimen Cups	126
Stirring Rods	127
Tanks	127
Test Tubes	127
Tubings	127
Vials	127
Others	127
MERGERS AND ACQUISITIONS TRENDS IN THE GLASS INDUSTRY	127
MARKET DYNAMICS	130
Drivers	130
Restraints	131
Opportunities	131
ANALYSIS OF SAFETY MEASURES IN LABS	131
TYPES OF GLASSES USED IN GENERAL LABWARE PRODUCTION	132
<i>TABLE 96 GLOBAL MARKET FOR GENERAL LABWARE BY TYPES OF GLASSES, THROUGH 2017 (\$ MILLIONS)</i>	132
Borosilicate Glass	132
<i>TABLE 97 GLOBAL MARKET FOR BOROSILICATE GLASS GENERAL LABWARE BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	133
Quartz Glass	133
<i>TABLE 98 GLOBAL MARKET FOR QUARTZ GLASS GENERAL LABWARE BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	133
Darkened Brown or Amber (Actinic) Glass	134
<i>TABLE 99 GLOBAL MARKET FOR DARKENED BROWN OR AMBER (ACTINIC) GLASS GENERAL LABWARE BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	134
Heavy Wall Glass	134
<i>TABLE 100 GLOBAL MARKET FOR HEAVY WALL GLASS GENERAL LABWARE BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	134
Other Glass Materials	135
<i>TABLE 101 GLOBAL MARKET FOR OTHER GLASS GENERAL LABWARE BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	135
GLASSWARE DYNAMICS	135
Thermal Stresses	135

TOPIC	PAGE NO.
Thermal Changes	136
Mechanical Stresses	136
Chemical Resistance	136
GLASS MOLDING METHODS	136
Glass Pressing	136
Glass Casting	136
Glass Blowing	137
NONHEATING METHOD OF THREADING GLASS	137
Porcelain and Ceramic	137
Others (Alumina [Silicon Carbide] Zirconia)	137
NEW MATERIALS AND OTHERS	137
<i>TABLE 102 GLOBAL MARKET FOR NEW MATERIAL AND OTHER GLASS GENERAL LABWARE BY PRODUCT CATEGORIES, THROUGH 2017 (\$ MILLIONS)</i>	138
<i>TABLE 103 GLOBAL MARKET FOR NEW MATERIAL AND OTHER GLASS GENERAL LABWARE BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)</i>	139
MARKET DYNAMICS	139
Drivers	139
Restraints	139
Opportunities	140
CHAPTER 8 GENERAL LABWARE CLEANING METHODS	142
LABORATORY GLASSWARE CLEANERS	142
LABORATORY PLASTICWARE CLEANERS	142
STERILIZATION METHODS USED IN LABORATORY GLASSWARE AND PLASTICWARE	143
STEAM STERILIZATION PROCESS	143
TRACE ANALYSIS	143
DISINFECTION	144
CHAPTER 9 LAB INVENTORY MANAGEMENT MARKET	146
LABWARE INVENTORY MANAGEMENT	146
INVENTORY CONTROL - SYSTEM STRUCTURE AND FUNCTIONALITY	147
FUNCTIONALITY OF AN INVENTORY CONTROL SYSTEM	147
CLASSIFICATION OF INVENTORY CONTROL SYSTEMS	147
CRITERIA FOR BUYING	148
<i>FIGURE 6 BUYING CRITERIA: CURRENT VERSUS FUTURE</i>	149
DIFFERENT METHODS OF TRACKING SAMPLES	149
Sample Tracking Using LIMS Software	149
Freezer/Sample Management Software	150
Technologies for Sample Identification	150
Sample Tracking--Location-based	150
Handwriting Labels	150
Cryogenic Labels	150
Barcodes	151
<i>TABLE 104 GLOBAL MARKET FOR BARCODE MARKET BY GEOGRAPHY, THROUGH 2017 (\$ MILLIONS)</i>	151
Scan-ready Tubes	152
Types of Barcode Labels	152

TOPIC	PAGE NO.
Slide Labels	153
Paraffin-Cassette Labels	153
Cryogenic Labels	153
Plate Labels	153
Bag and Vial Labels	153
Tagging Using RFID	154
<i>TABLE 105 GLOBAL MARKET FOR RFID IN LABORATORY TRACKING APPLICATIONS BY PRODUCT CATEGORIES, THROUGH 2017 (\$ MILLIONS)</i>	154
<i>TABLE 106 GLOBAL MARKET FOR RFID TAGS MARKET BY REGION, THROUGH 2017 (\$ MILLIONS)</i>	154
<i>TABLE 107 GLOBAL MARKET FOR RFID READERS MARKET BY GEOGRAPHY, THROUGH 2017 (\$ MILLIONS)</i>	154
Practical Applications	155
Barcodes versus RFID	156
Problems with RFID	156
<i>TABLE 108 GLOBAL MARKET FOR RFID TAGS IN LABORATORY TRACKING APPLICATIONS BY PRODUCT CATEGORIES, THROUGH 2017 (\$ MILLIONS)</i>	157
<i>TABLE 109 GLOBAL MARKET FOR RFID ACTIVE TAGS IN LABORATORY TRACKING APPLICATIONS BY REGION, THROUGH 2017 (\$ MILLIONS)</i>	158
<i>TABLE 110 GLOBAL MARKET FOR RFID PASSIVE TAGS IN LABORATORY TRACKING APPLICATIONS BY GEOGRAPHIES, THROUGH 2017 (\$ MILLIONS)</i>	158
Active RFID for the Highly Important or High-Value Assets (Samples/Chemicals)	158
Wireless 802.11b Active Tags	159
Chemical and Sample Inventorizing with Short Range Passive RFID	159
Tag Commissioning	159
Tag Inventorizing	160
Chemical and Sample Inventorizing with Long-Range Passive RFID	160
UHF vs. HF in Short-Range Passive Tracking	160
RFID, Printed ID Numbers and Barcodes-Redundancy Systems	161
Label Stock	161
Glass/Acrylic Shelves vs. Metal Shelves	162
Smart Shelves	162
Chemical and Biological Samples Interaction with Radio Frequency	162
RFID Chemical and Sample Tracking Recommendations at PNNL	162
CHAPTER 10 MARKET BY REGION	164
NORTH AMERICA	164
<i>TABLE 111 NORTH AMERICAN MARKET FOR GENERAL LABWARE BY PRODUCT CATEGORIES, THROUGH 2017 (\$ MILLIONS)</i>	164
EUROPE	165
<i>TABLE 112 EUROPEAN MARKET FOR GENERAL LABWARE BY PRODUCT CATEGORIES, THROUGH 2017 (\$ MILLIONS)</i>	166
ASIA	167
<i>TABLE 113 ASIAN MARKET FOR GENERAL LABWARE BY PRODUCT CATEGORIES, THROUGH 2017 (\$ MILLIONS)</i>	167
REST OF THE WORLD (ROW)	168

TOPIC	PAGE NO.
<i>TABLE 114 ROW MARKET FOR GENERAL LABWARE BY PRODUCT CATEGORIES, THROUGH 2017 (\$ MILLIONS)</i>	169
CHAPTER 11 COMPETITIVE LANDSCAPE	171
<i>FIGURE 7 RECENT DEVELOPMENTS IN GENERAL LABWARE MARKET, 2009-2013</i>	171
<i>TABLE 115 MERGERS AND ACQUISITIONS IN THE GENERAL LABWARE MARKET</i>	172
<i>TABLE 116 AGREEMENTS, PARTNERSHIPS, COLLABORATIONS AND JOINT VENTURES IN THE GENERAL LABWARE MARKET</i>	173
<i>TABLE 117 NEW PRODUCT LAUNCHES AND INNOVATIONS IN GENERAL LABWARE MARKET</i>	175
<i>TABLE 118 PRODUCT APPROVALS AND COMPLIANCE IN THE GENERAL LABWARE MARKET</i>	178
<i>TABLE 119 OTHER DEVELOPMENTS IN GENERAL LABWARE MARKET</i>	178
CHAPTER 12 COMPANY PROFILES	180
APS LABWARE	180
<i>TABLE 120 APS LABWARE-PRODUCT PORTFOLIO</i>	180
BELART	180
<i>TABLE 121 BELART- PRODUCT PORTFOLIO</i>	181
<i>TABLE 122 BELART-RECENT DEVELOPMENTS, 2012</i>	181
BELLCO GLASS	182
<i>TABLE 123 BELLCO GLASS—PRODUCT PORTFOLIO</i>	182
<i>TABLE 124 BELLCO GLASS - RECENT DEVELOPMENTS, 2012</i>	183
BIOCISION	183
<i>TABLE 125 BIOCISION — PRODUCT PORTFOLIO</i>	183
<i>TABLE 126 BIOCISION—RECENT DEVELOPMENTS, 2010-2012</i>	184
BOROSIL GLASS WORKS LIMITED	184
<i>TABLE 127 BOROSIL GLASS—PRODUCT PORTFOLIO</i>	185
<i>TABLE 128 BOROSIL GLASS — FINANCIALS (LAKHS INR)</i>	186
BRAND GMBH (GERMANY)	186
<i>TABLE 129 BRAND GMBH — PRODUCT PORTFOLIO</i>	186
CHEMGLASS INC.	188
<i>TABLE 130 CHEMGLASS INC — PRODUCT PORTFOLIO</i>	188
CITOTEST LABWARE MANUFACTURING CO. LTD.	189
<i>TABLE 131 CITOTEST LABWARE MANUFACTURING CO. LTD—PRODUCT PORTFOLIO</i>	189
COLE PARMER	191
<i>TABLE 132 COLE PARMER — PRODUCT PORTFOLIO</i>	191
<i>TABLE 133 COLE PARMER-RECENT DEVELOPMENTS, 2012</i>	192
COORSTEK	192
<i>TABLE 134 COORSTEK—PRODUCT PORTFOLIO</i>	192
<i>TABLE 135 COORSTEK-RECENT DEVELOPMENTS, 2010-2012</i>	194
CORNING	194
<i>TABLE 136 CORNING—PRODUCT PORTFOLIO</i>	195
<i>TABLE 137 CORNING-RECENT DEVELOPMENTS</i>	197
DURAN GROUP	197
<i>TABLE 138 DURAN GROUP—PRODUCT PORTFOLIO</i>	198
EPPENDORF AG	198
<i>TABLE 139 EPPENDORF AG — PRODUCT PORTFOLIO</i>	199

TOPIC	PAGE NO.
<i>TABLE 140 EPPENDORF AG - RECENT DEVELOPMENTS, 2012</i>	199
GERRESHEIMER GROUP (THE)	199
<i>TABLE 141 THE GERRESHEIMER GROUP—PRODUCT PORTFOLIO</i>	200
<i>TABLE 142 THE GERRESHEIMER GROUP-RECENT DEVELOPMENTS, 2011-2012</i>	200
<i>TABLE 143 THE GERRESHEIMER GROUP-FINANCIALS (MILLION EUR)</i>	201
GILSON, INC.	201
<i>TABLE 144 GILSON INC—PRODUCT PORTFOLIO</i>	201
GLACIER INDIA	203
<i>TABLE 145 GLACIER INDIA—PRODUCT PORTFOLIO</i>	203
GLASSCO LABS	203
<i>TABLE 146 GLASSCO LABS—PRODUCT PORTFOLIO</i>	204
KARTELL LABWARE DIV.	205
<i>TABLE 147 KARTELL LABWARE—PRODUCT PORTFOLIO</i>	205
KIMBLE BOMEX (BEIJING) GLASS CO	206
<i>TABLE 148 KIMBLE BOMEX GLASS CO—PRODUCT PORTFOLIO</i>	206
KIMBLE CHASE	206
<i>TABLE 149 KIMBLE CHASE—PRODUCT PORTFOLIO</i>	207
<i>TABLE 150 KIMBLE CHASE- RECENT DEVELOPMENTS, 2010-2012</i>	208
METTLER-TOLEDO INTERNATIONAL	208
<i>TABLE 151 METTLER-TOLEDO INTERNATIONAL—PRODUCT PORTFOLIO</i>	209
NALGENE LABWARE	209
<i>TABLE 152 NALGENE LABWARE—PRODUCT PORTFOLIO</i>	210
POULTEN & GRAF GMBH	211
<i>TABLE 153 POULTEN & GRAF GMBH—PRODUCT PORTFOLIO</i>	212
QORPAK LAB GLASSWARE	212
<i>TABLE 154 QORPAK LAB GLASSWARE—PRODUCT PORTFOLIO</i>	212
SARTORIUS BIOHIT LIQUID HANDLING OY	213
<i>TABLE 155 SARTORIUS BIOHIT LIQUID HANDLING OY—PRODUCT PORTFOLIO</i>	213
<i>TABLE 156 SARTORIUS BIOHIT LIQUID HANDLING OY-RECENT DEVELOPMENTS, 2011-2012</i>	214
SAVILLEX	214
<i>TABLE 157 SAVILLEX CORPORATION—PRODUCT PORTFOLIO</i>	215
SCILABWARE LIMITED	215
<i>TABLE 158 SCILABWARE LIMITED—PRODUCT PORTFOLIO</i>	216
<i>TABLE 159 SCILABWARE LIMITED - RECENT DEVELOPMENTS, 2011-2012</i>	218
THERMO FISHER	218
<i>TABLE 160 THERMO FISHER—PRODUCT PORTFOLIO</i>	219
<i>TABLE 161 THERMO FISHER-RECENT DEVELOPMENTS, 2012</i>	220
<i>TABLE 162 THERMO FISHER-FINANCIALS, 2009-2011 (\$ MILLIONS)</i>	220
VENSIL	220
<i>TABLE 163 VENSIL—PRODUCT PORTFOLIO</i>	221
VITLAB GMBH	222
<i>TABLE 164 VITLAB GMBH-PRODUCT PORTFOLIO</i>	222
WHEATON SCIENCE PRODUCTS	225
<i>TABLE 165 WHEATON SCIENCE PRODUCTS-RECENT DEVELOPMENTS, 2010-2012</i>	226
WILMAD-LABGLASS	226
<i>TABLE 166 WILMAD-LABGLASS - PRODUCT PORTFOLIO</i>	227

TOPIC	PAGE NO.
CHAPTER 13 PATENT ANALYSIS	230
<i>FIGURE 8 NUMBER OF PATENTS: GENERAL LABWARE BY REGION, 2005-2013</i>	230
<i>FIGURE 9 NUMBER OF PATENTS: GENERAL LABWARE BY TECHNOLOGIES AND REGION, 2005-2013</i>	230
<i>FIGURE 10 TOP U.S. COMPANIES WITH PATENTS IN GENERAL LABWARE</i>	231
<i>FIGURE 11 TOP EUROPEAN COMPANIES WITH PATENTS IN GENERAL LABWARE</i>	232
CHAPTER 14 APPENDIX	235
<i>TABLE 167 LIST OF PATENTS: U.S.</i>	235
<i>TABLE 168 LIST OF PATENTS: EUROPE</i>	240
<i>TABLE 169 LIST OF PATENTS: JAPAN</i>	245

LIST OF TABLES

TABLE HEADING	PAGE NO.
SUMMARY TABLE GLOBAL MARKET FOR GENERAL LABWARE BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	7
TABLE 1 GLOBAL MARKET FOR GENERAL LABWARE BY PRODUCT CATEGORIES, THROUGH 2017 (\$ MILLIONS)	33
TABLE 2 GLOBAL MARKET FOR LABORATORY BEAKERS, 2012-2017 (\$ MILLIONS)	35
TABLE 3 GLOBAL MARKET FOR BEAKERS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	36
TABLE 4 GLOBAL MARKET FOR LOW FORM BEAKERS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	36
TABLE 5 GLOBAL MARKET FOR TALL FORM BEAKERS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	37
TABLE 6 GLOBAL MARKET FOR FLAT FORM BEAKERS OR CRYSTALLIZERS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	37
TABLE 7 GLOBAL MARKET FOR OTHER LABORATORY BEAKERS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	38
TABLE 8 GLOBAL MARKET FOR LABORATORY BOTTLES BY PRODUCT CATEGORIES, THROUGH 2017 (\$ MILLIONS)	39
TABLE 9 GLOBAL MARKET FOR LABORATORY BOTTLES BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	39
TABLE 10 GLOBAL MARKET FOR LABORATORY BOTTLES WITH NARROW NECK BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	40
TABLE 11 GLOBAL MARKET FOR LABORATORY PLASTIC REAGENT BOTTLES BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	41
TABLE 12 GLOBAL MARKET FOR LABORATORY BURETTE BY PRODUCT CATEGORIES, THROUGH 2017 (\$ MILLIONS)	41
TABLE 13 GLOBAL MARKET FOR BURETTES BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	42
TABLE 14 GLOBAL MARKET FOR AUTOMATIC BURETTES BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	42
TABLE 15 GLOBAL MARKET FOR BURETTES WITH STRAIGHT STOPCOCK BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	43
TABLE 16 GLOBAL MARKET FOR BURETTES WITH INTERCHANGEABLE STOPPERS BY GEOGRAPHIC REGION, 2012-2017 (\$ MILLIONS)	43
TABLE 17 GLOBAL MARKET FOR LABORATORY FLASKS BY PRODUCT CATEGORIES, THROUGH 2017 (\$ MILLIONS)	44
TABLE 18 GLOBAL MARKET FOR ERLNMEYER FLASKS OR CONICAL FLASKS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	45
TABLE 19 GLOBAL MARKET FOR FLORENCE FLASKS OR CONICAL FLASKS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	45
TABLE 20 GLOBAL MARKET FOR VOLUMETRIC FLASKS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	46
TABLE 21 GLOBAL MARKET FOR FERNBACH FLASKS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	47
TABLE 22 GLOBAL MARKET FOR OTHER LABORATORY FLASKS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	48
TABLE 23 GLOBAL MARKET FOR FUNNELS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	49
TABLE 24 GLOBAL MARKET FOR MEASURING CYLINDERS BY PRODUCT CATEGORIES, THROUGH 2017 (\$ MILLIONS)	50
TABLE 25 GLOBAL MARKET FOR GLASS CYLINDERS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	51

TABLE HEADING	PAGE NO.
TABLE 26 GLOBAL MARKET FOR PLASTIC CYLINDERS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	52
TABLE 27 GLOBAL MARKET FOR OTHERS CYLINDERS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	53
TABLE 28 GLOBAL MARKET FOR PETRI DISH/AGAR PLATES BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	53
TABLE 29 GLOBAL MARKET FOR LABORATORY PIPETTES BY PRODUCT CATEGORIES, THROUGH 2017 (\$ MILLIONS)	54
TABLE 30 GLOBAL MARKET FOR LABORATORY PIPETTES BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	55
TABLE 31 GLOBAL MARKET FOR LABORATORY VARIABLE VOLUME PIPETTES BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	56
TABLE 32 GLOBAL MARKET FOR PASTEUR PIPETTES BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	56
TABLE 33 GLOBAL MARKET FOR PIPETTES USED IN PATCH CLAMP TECHNIQUE OF ISOLATING ION CHANNELS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	57
TABLE 34 GLOBAL MARKET FOR MICROFLUIDIC PIPETTES BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	58
TABLE 35 GLOBAL MARKET FOR GRADUATED PIPETTES BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	58
TABLE 36 GLOBAL MARKET FOR ELECTRONIC MICROPIPETTES BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	59
TABLE 37 GLOBAL MARKET FOR OTHER PIPETTES BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	59
TABLE 38 GLOBAL MARKET FOR LABORATORY RACKS BY PRODUCT CATEGORIES, THROUGH 2017 (\$ MILLIONS)	60
TABLE 39 GLOBAL MARKET FOR TEST TUBE RACKS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	61
TABLE 40 GLOBAL MARKET FOR MULTIBOTTLE RACKS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	61
TABLE 41 GLOBAL MARKET FOR MICROCENTRIFUGE TUBE RACKS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	62
TABLE 42 GLOBAL MARKET FOR OTHER LABORATORY RACKS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	63
TABLE 43 GLOBAL MARKET FOR LABORATORY SLIDES BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	64
TABLE 44 GLOBAL MARKET FOR CENTRIFUGE TUBE BY PRODUCT CATEGORIES, THROUGH 2017 (\$ MILLIONS)	65
TABLE 45 GLOBAL MARKET FOR CENTRIFUGE TUBE BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	65
TABLE 46 GLOBAL MARKET FOR MICROCENTRIFUGE TUBE- SCREWCAP BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	66
TABLE 47 GLOBAL MARKET FOR MICROCENTRIFUGE TUBE - SNAPCAP BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	66
TABLE 48 GLOBAL CLAMPS METAL AND PLASTICS MARKET BY PRODUCT CATEGORY, THROUGH 2017 (\$ MILLIONS)	67
TABLE 49 GLOBAL MARKET FOR CLAMPS METALS AND PLASTICS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	67
TABLE 50 GLOBAL MARKET FOR MICROPLATES AND OTHER TOOLS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	68
TABLE 51 GLOBAL MARKET FOR SPECIMEN CUPS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	69

TABLE HEADING	PAGE NO.
TABLE 52 GLOBAL MARKET FOR STIRRING RODS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	69
TABLE 53 GLOBAL MARKET FOR LABORATORY TANK BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	70
TABLE 54 GLOBAL MARKET FOR TEST TUBES BY PRODUCT CATEGORIES, THROUGH 2017 (\$ MILLIONS)	72
TABLE 55 GLOBAL MARKET FOR TEST TUBES BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	72
TABLE 56 GLOBAL MARKET FOR CULTURE TEST TUBES BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	73
TABLE 57 GLOBAL MARKET FOR OTHER CONVENTIONAL AND BLUE TOP TUBES BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	73
TABLE 58 GLOBAL MARKET FOR 2-D BARCODED STORAGE TUBES BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	74
TABLE 59 GLOBAL MARKET FOR TEST TUBE STOPPERS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	75
TABLE 60 GLOBAL MARKET FOR TUBING BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	75
TABLE 61 GLOBAL MARKET FOR VIALS, CUVETTES AND CELLS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	76
TABLE 62 GLOBAL MARKET FOR DESICCATORS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	77
TABLE 63 GLOBAL MARKET FOR DISPOSAL PRODUCTS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	78
TABLE 64 GLOBAL MARKET FOR HANDCARE PRODUCTS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	79
TABLE 65 GLOBAL MARKET FOR LAB ORGANIZERS AND STATIONERY BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	81
TABLE 66 GLOBAL MARKET FOR LAB FILTRATION KITS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	83
TABLE 67 GLOBAL MARKET FOR GENERAL LABWARE BY END USERS, THROUGH 2017 (\$ MILLIONS)	86
TABLE 68 GLOBAL MARKET FOR BIOTECH/LIFE SCIENCES RESEARCH BY END USERS, THROUGH 2017 (\$ MILLIONS)	86
TABLE 69 GLOBAL MARKET FOR GENERAL LABWARE IN BIOTECH/LIFE SCIENCES RESEARCH BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	87
TABLE 70 GLOBAL MARKET FOR GENERAL LABWARE IN BIOMARKER RESEARCH BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	88
TABLE 71 GLOBAL MARKET GENERAL LABWARE IN BIOPRODUCTION BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	90
TABLE 72 GLOBAL MARKET GENERAL LABWARE IN CELL CULTURES BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	92
TABLE 73 GLOBAL MARKET GENERAL LABWARE IN PROTEOMICS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	95
TABLE 74 GLOBAL MARKET GENERAL LABWARE IN STEM CELLS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	96
TABLE 75 GLOBAL MARKET FOR GENERAL LABWARE IN CLINICAL LABORATORIES BY END USERS, THROUGH 2017 (\$ MILLIONS)	98
TABLE 76 GLOBAL MARKET FOR GENERAL LABWARE IN CLINICAL LABORATORIES BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	98
TABLE 77 GLOBAL MARKET FOR GENERAL LABWARE IN BLOOD BANKS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	99

TABLE HEADING	PAGE NO.
TABLE 78 GLOBAL MARKET FOR GENERAL LABWARE IN CLINICAL CHEMISTRY BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	102
TABLE 79 GLOBAL MARKET FOR GENERAL LABWARE IN CLINICAL CONTROLS/ STANDARDS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	103
TABLE 80 GLOBAL MARKET FOR GENERAL LABWARE IN HISTOLOGY BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	104
TABLE 81 GLOBAL MARKET FOR GENERAL LABWARE IN IVF BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	105
TABLE 82 GLOBAL MARKET FOR GENERAL LABWARE IN OTHER CLINICAL LABORATORY APPLICATIONS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	105
TABLE 83 GLOBAL MARKET FOR GENERAL LABWARE IN FORENSIC AND OTHER APPLICATIONS BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	106
TABLE 84 GLOBAL MARKET FOR PLASTIC GENERAL LABWARE BY PRODUCT CATEGORIES, THROUGH 2017 (\$ MILLIONS)	110
TABLE 85 GLOBAL MARKET FOR GENERAL LABWARE BY TYPES OF PLASTICS, THROUGH 2017 (\$ MILLIONS)	116
TABLE 86 GLOBAL MARKET FOR POLYCARBONATE PLASTIC GENERAL LABWARE BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	117
TABLE 87 GLOBAL MARKET FOR POLYETHYLENE PLASTIC GENERAL LABWARE BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	117
TABLE 88 GLOBAL MARKET FOR POLYMETHYLPENTENE (PMP) PLASTIC GENERAL LABWARE BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	118
TABLE 89 GLOBAL MARKET FOR POLYSTYRENE (PS) PLASTIC GENERAL LABWARE BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	118
TABLE 90 GLOBAL MARKET FOR POLYVINYL CHLORIDE (PVC) PLASTIC GENERAL LABWARE BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	119
TABLE 91 GLOBAL MARKET FOR TEFLON (FEP) AND (TFE) PLASTIC GENERAL LABWARE BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	119
TABLE 92 GLOBAL MARKET FOR OTHER PLASTIC GENERAL LABWARE BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	120
TABLE 93 COMMON LABORATORY RESINS AND THEIR PROPERTIES	120
TABLE 94 GLOBAL MARKET FOR GLASS GENERAL LABWARE BY PRODUCT CATEGORIES, THROUGH 2017 (\$ MILLIONS)	123
TABLE 95 GLOBAL MARKET FOR GLASS GENERAL LABWARE BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	124
TABLE 96 GLOBAL MARKET FOR GENERAL LABWARE BY TYPES OF GLASSES, THROUGH 2017 (\$ MILLIONS)	132
TABLE 97 GLOBAL MARKET FOR BOROSILICATE GLASS GENERAL LABWARE BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	133
TABLE 98 GLOBAL MARKET FOR QUARTZ GLASS GENERAL LABWARE BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	133
TABLE 99 GLOBAL MARKET FOR DARKENED BROWN OR AMBER (ACTINIC) GLASS GENERAL LABWARE BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	134
TABLE 100 GLOBAL MARKET FOR HEAVY WALL GLASS GENERAL LABWARE BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	134
TABLE 101 GLOBAL MARKET FOR OTHER GLASS GENERAL LABWARE BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	135
TABLE 102 GLOBAL MARKET FOR NEW MATERIAL AND OTHER GLASS GENERAL LABWARE BY PRODUCT CATEGORIES, THROUGH 2017 (\$ MILLIONS)	138
TABLE 103 GLOBAL MARKET FOR NEW MATERIAL AND OTHER GLASS GENERAL LABWARE BY GEOGRAPHIC REGION, THROUGH 2017 (\$ MILLIONS)	139

TABLE HEADING	PAGE NO.
TABLE 104 GLOBAL MARKET FOR BARCODE MARKET BY GEOGRAPHY, THROUGH 2017 (\$ MILLIONS)	151
TABLE 105 GLOBAL MARKET FOR RFID IN LABORATORY TRACKING APPLICATIONS BY PRODUCT CATEGORIES, THROUGH 2017 (\$ MILLIONS)	154
TABLE 106 GLOBAL MARKET FOR RFID TAGS MARKET BY REGION, THROUGH 2017 (\$ MILLIONS)	154
TABLE 107 GLOBAL MARKET FOR RFID READERS MARKET BY GEOGRAPHY, THROUGH 2017 (\$ MILLIONS)	154
TABLE 108 GLOBAL MARKET FOR RFID TAGS IN LABORATORY TRACKING APPLICATIONS BY PRODUCT CATEGORIES, THROUGH 2017 (\$ MILLIONS)	157
TABLE 109 GLOBAL MARKET FOR RFID ACTIVE TAGS IN LABORATORY TRACKING APPLICATIONS BY REGION, THROUGH 2017 (\$ MILLIONS)	158
TABLE 110 GLOBAL MARKET FOR RFID PASSIVE TAGS IN LABORATORY TRACKING APPLICATIONS BY GEOGRAPHIES, THROUGH 2017 (\$ MILLIONS)	158
TABLE 111 NORTH AMERICAN MARKET FOR GENERAL LABWARE BY PRODUCT CATEGORIES, THROUGH 2017 (\$ MILLIONS)	164
TABLE 112 EUROPEAN MARKET FOR GENERAL LABWARE BY PRODUCT CATEGORIES, THROUGH 2017 (\$ MILLIONS)	166
TABLE 113 ASIAN MARKET FOR GENERAL LABWARE BY PRODUCT CATEGORIES, THROUGH 2017 (\$ MILLIONS)	167
TABLE 114 ROW MARKET FOR GENERAL LABWARE BY PRODUCT CATEGORIES, THROUGH 2017 (\$ MILLIONS)	169
TABLE 115 MERGERS AND ACQUISITIONS IN THE GENERAL LABWARE MARKET	172
TABLE 116 AGREEMENTS, PARTNERSHIPS, COLLABORATIONS AND JOINT VENTURES IN THE GENERAL LABWARE MARKET	173
TABLE 117 NEW PRODUCT LAUNCHES AND INNOVATIONS IN GENERAL LABWARE MARKET	175
TABLE 118 PRODUCT APPROVALS AND COMPLIANCE IN THE GENERAL LABWARE MARKET	178
TABLE 119 OTHER DEVELOPMENTS IN GENERAL LABWARE MARKET	178
TABLE 120 APS LABWARE-PRODUCT PORTFOLIO	180
TABLE 121 BELART- PRODUCT PORTFOLIO	181
TABLE 122 BELART-RECENT DEVELOPMENTS, 2012	181
TABLE 123 BELLCO GLASS—PRODUCT PORTFOLIO	182
TABLE 124 BELLCO GLASS - RECENT DEVELOPMENTS, 2012	183
TABLE 125 BIOCISION — PRODUCT PORTFOLIO	183
TABLE 126 BIOCISION—RECENT DEVELOPMENTS, 2010-2012	184
TABLE 127 BOROSIL GLASS—PRODUCT PORTFOLIO	185
TABLE 128 BOROSIL GLASS — FINANCIALS (LAKHS INR)	186
TABLE 129 BRAND GMBH — PRODUCT PORTFOLIO	186
TABLE 130 CHEMGLASS INC — PRODUCT PORTFOLIO	188
TABLE 131 CITOTEST LABWARE MANUFACTURING CO. LTD—PRODUCT PORTFOLIO	189
TABLE 132 COLE PARMER — PRODUCT PORTFOLIO	191
TABLE 133 COLE PARMER-RECENT DEVELOPMENTS, 2012	192
TABLE 134 COORSTEK—PRODUCT PORTFOLIO	192
TABLE 135 COORSTEK-RECENT DEVELOPMENTS, 2010-2012	194
TABLE 136 CORNING—PRODUCT PORTFOLIO	195
TABLE 137 CORNING-RECENT DEVELOPMENTS	197
TABLE 138 DURAN GROUP—PRODUCT PORTFOLIO	198
TABLE 139 EPPENDORF AG — PRODUCT PORTFOLIO	199

TABLE HEADING	PAGE NO.
TABLE 140 EPPENDORF AG - RECENT DEVELOPMENTS, 2012	199
TABLE 141 THE GERRESHEIMER GROUP—PRODUCT PORTFOLIO	200
TABLE 142 THE GERRESHEIMER GROUP-RECENT DEVELOPMENTS, 2011-2012	200
TABLE 143 THE GERRESHEIMER GROUP-FINANCIALS (MILLION EUR)	201
TABLE 144 GILSON INC—PRODUCT PORTFOLIO	201
TABLE 145 GLACIER INDIA—PRODUCT PORTFOLIO	203
TABLE 146 GLASSCO LABS—PRODUCT PORTFOLIO	204
TABLE 147 KARTELL LABWARE—PRODUCT PORTFOLIO	205
TABLE 148 KIMBLE BOMEX GLASS CO—PRODUCT PORTFOLIO	206
TABLE 149 KIMBLE CHASE—PRODUCT PORTFOLIO	207
TABLE 150 KIMBLE CHASE- RECENT DEVELOPMENTS, 2010-2012	208
TABLE 151 METTLER-TOLEDO INTERNATIONAL—PRODUCT PORTFOLIO	209
TABLE 152 NALGENE LABWARE—PRODUCT PORTFOLIO	210
TABLE 153 POULTEN & GRAF GMBH—PRODUCT PORTFOLIO	212
TABLE 154 QORPAK LAB GLASSWARE—PRODUCT PORTFOLIO	212
TABLE 155 SARTORIUS BIOHIT LIQUID HANDLING OY—PRODUCT PORTFOLIO	213
TABLE 156 SARTORIUS BIOHIT LIQUID HANDLING OY-RECENT DEVELOPMENTS, 2011-2012	214
TABLE 157 SAVILLEX CORPORATION—PRODUCT PORTFOLIO	215
TABLE 158 SCILABWARE LIMITED—PRODUCT PORTFOLIO	216
TABLE 159 SCILABWARE LIMITED - RECENT DEVELOPMENTS, 2011-2012	218
TABLE 160 THERMO FISHER—PRODUCT PORTFOLIO	219
TABLE 161 THERMO FISHER-RECENT DEVELOPMENTS, 2012	220
TABLE 162 THERMO FISHER-FINANCIALS, 2009-2011 (\$ MILLIONS)	220
TABLE 163 VENSIL—PRODUCT PORTFOLIO	221
TABLE 164 VITLAB GMBH-PRODUCT PORTFOLIO	222
TABLE 165 WHEATON SCIENCE PRODUCTS-RECENT DEVELOPMENTS, 2010-2012	226
TABLE 166 WILMAD-LABGLASS - PRODUCT PORTFOLIO	227
TABLE 167 LIST OF PATENTS: U.S.	235
TABLE 168 LIST OF PATENTS: EUROPE	240
TABLE 169 LIST OF PATENTS: JAPAN	245

LIST OF FIGURES

FIGURE TITLE	PAGE NO.
SUMMARY FIGURE GLOBAL MARKET FOR GENERAL LABWARE BY GEOGRAPHIC REGION, 2011-2017 (\$ MILLIONS)	7
FIGURE 1 HISTORY AND EVOLUTION OF CLINICAL LABORATORIES	10
FIGURE 2 COMPONENTS OF LABORATORY EQUIPMENT	11
FIGURE 3 GENERAL LABWARE MARKET BY EQUIPMENT (%)	21
FIGURE 4 COMPARATIVE ANALYSIS: CURRENT VERSUS FUTURE POTENTIAL OF GENERAL LABWARE APPLICATIONS	23
FIGURE 5 BUYING CRITERIA: GLASS VERSUS PLASTIC GENERAL LABWARE	24
FIGURE 6 BUYING CRITERIA: CURRENT VERSUS FUTURE	149
FIGURE 7 RECENT DEVELOPMENTS IN GENERAL LABWARE MARKET, 2009-2013	171
FIGURE 8 NUMBER OF PATENTS: GENERAL LABWARE BY REGION, 2005-2013	230
FIGURE 9 NUMBER OF PATENTS: GENERAL LABWARE BY TECHNOLOGIES AND REGION, 2005-2013	230
FIGURE 10 TOP U.S. COMPANIES WITH PATENTS IN GENERAL LABWARE	231
FIGURE 11 TOP EUROPEAN COMPANIES WITH PATENTS IN GENERAL LABWARE	232