

INDUSTRIAL FILLERS: GLOBAL MARKETS



AVM124A
August 2015

Tanmay Joshi
Project Analyst

ISBN: 1-62296-132-3



BCC Research
49 Walnut Park, Building 2
Wellesley, MA 02481 USA
866-285-7215 (toll-free within the USA),
or (+1) 781-489-7301
www.bccresearch.com
information@bccresearch.com

TABLE OF CONTENTS

TOPIC	PAGE NO.
CHAPTER 1 INTRODUCTION	2
STUDY AND OBJECTIVES	2
GLOBAL INDUSTRIAL FILLERS MARKET DESCRIPTION	2
SCOPE OF THE REPORT	2
INTENDED AUDIENCE	3
RESEARCH METHODOLOGY	3
ANALYST'S CREDENTIALS	4
RELATED BCC RESEARCH REPORTS	4
BCC RESEARCH WEBSITE	4
DISCLAIMER	5
CHAPTER 2 SUMMARY	7
SUMMARY TABLE GLOBAL INDUSTRIAL FILLERS MARKET BY PRODUCTS, THROUGH 2019 (\$ MILLIONS)	7
SUMMARY FIGURE GLOBAL INDUSTRIAL FILLERS MARKET BY PRODUCTS, 2013-2019 (\$ MILLIONS)	7
CHAPTER 3 MARKET OVERVIEW	10
INDUSTRIAL FILLERS ANALYSIS	10
TABLE 1 GLOBAL INDUSTRIAL FILLERS MARKET, THROUGH 2019 (KILO TONS/\$ MILLIONS)	10
TABLE 2 GLOBAL VOLUME FOR INDUSTRIAL FILLERS MARKET BY REGION, THROUGH 2019 (KILO TONS)	11
TABLE 3 GLOBAL REVENUE FOR INDUSTRIAL FILLERS MARKET BY REGION, THROUGH 2019 (\$ MILLIONS)	12
MARKET SHARE OF KEY FILLERS	12
FIGURE 1 GLOBAL VOLUME FOR INDUSTRIAL FILLERS MARKET BY TYPE, 2013 (%)	12
FIGURE 2 GLOBAL GCC MARKET BY END-USE PRODUCTS, 2013 (%)	13
FIGURE 3 GLOBAL PCC MARKET BY END-USE PRODUCTS, 2013 (%)	15
FIGURE 4 GLOBAL CARBON BLACK MARKET BY END-USE PRODUCTS, 2013 (%)	15
FIGURE 5 GLOBAL KAOLIN MARKET BY END-USE PRODUCTS, 2013 (%)	16
FIGURE 6 GLOBAL TALC MARKET BY END-USE PRODUCTS, 2013 (%)	17
MARKET STRATEGIES	18
TABLE 4 KEY CALCIUM CARBONATE MANUFACTURING COMPANIES BY LOCATION	18
TABLE 5 KEY KAOLIN MANUFACTURING COMPANIES, BY LOCATION	20
TABLE 6 KEY CARBON BLACK MANUFACTURING COMPANIES, BY LOCATION	21
TABLE 7 KEY TALC MANUFACTURING COMPANIES, BY LOCATION	22
MARKET DYNAMICS	22
DRIVERS	22
Growth of the Global Construction Industry	22
FIGURE 7 ESTIMATED GROWTH RATE FOR CONSTRUCTION, 2013 (%)	23
Automotive Industry Growth in China	24
FIGURE 8 CHINA: AUTOMOBILE PRODUCTION, 2001-2020 (THOUSAND UNITS)	24
Positive Downstream Oil and Gas Industry Outlook in the Middle East	25
FIGURE 9 GCC PETROCHEMICALS PRODUCTION, 2007-2015 (MILLION TONS/YEAR)	26
FIGURE 10 THERMOPLASTIC REGIONAL NET TRADE PROJECTION, 2017 (MILLION TONS)	26

TOPIC	PAGE NO.
<i>FIGURE 11 THERMOPLASTIC PLANNED CAPACITY INCREASE FROM 2012 TO 2017 (MILLION TONS)</i>	27
RESTRAINTS	28
Shrinking Paper and Pulp Industry in Europe and North America	28
<i>TABLE 8 PULP PRODUCTION IN NORTH AMERICA AND EUROPE, 2004-2009 (MILLION TONS)</i>	29
OPPORTUNITIES	29
Indian Government: Petroleum Chemicals and Petrochemicals Investment Region (PCPIR) Policy	29
GCC Spending on Infrastructural Development in the Middle East	30
Malaysian Government's Support to Promote Domestic Rubber Industry	30
INDUSTRIAL FILLERS - A PERSPECTIVE	30
TYPES OF INDUSTRIAL FILLERS	30
<i>TABLE 9 FUNCTIONS OF FILLERS DEPENDING ON THE SIZE OF THE PARTICLES</i>	31
Carbon Black	31
Kaolin	31
Calcium Carbonate	31
Talc	32
Other Fillers	32
Minex	32
Minspar	32
Natural Pozzolans	33
Crushed Glass Fillers	34
APPLICATION AREAS OF INDUSTRIAL FILLERS	34
<i>TABLE 10 FILLER TYPE BY APPLICATION</i>	35
PROPERTIES OF INDUSTRIAL FILLERS	36
<i>TABLE 11 GENERAL PROPERTIES OF FILLERS</i>	36
<i>TABLE 12 PROPERTIES OF KAOLIN</i>	36
<i>TABLE 13 GENERAL PROPERTIES OF TALC</i>	37
<i>TABLE 14 COMPARISON BETWEEN PLATY TALC AND TREMOLITIC TALC</i>	38
<i>TABLE 15 PROPERTIES OF GROUND CALCIUM CARBONATE (GCC)</i>	39
<i>TABLE 16 PROPERTIES OF PRECIPITATED CALCIUM CARBONATE (PCC)</i>	39
NANOFILLERS	39
REGULATIONS AND LEGISLATIONS	40
CALCIUM CARBONATE	40
KAOLIN	41
CARBON BLACK	42
TALC	44
REGIONAL OVERVIEW	45
North America	45
<i>FIGURE 12 NORTH AMERICAN INDUSTRIAL FILLERS MARKET, 2013- 2019 (KILO TONS/\$ MILLIONS)</i>	46
<i>FIGURE 13 NORTH AMERICAN INDUSTRIAL FILLERS MARKET BY PRODUCT, 2013 AND 2019</i>	47
Europe	48
<i>FIGURE 14 EUROPE INDUSTRIAL FILLERS MARKET DEMAND, 2013-2019 (KILO TONS/\$ MILLIONS)</i>	48

TOPIC	PAGE NO.
<i>FIGURE 15 EUROPEAN INDUSTRIAL FILLERS MARKET BY PRODUCT, 2013 AND 2019 (%)</i>	49
APAC	50
<i>FIGURE 16 ASIA-PACIFIC INDUSTRIAL FILLERS MARKET, 2013-2019 (KILO TONS/\$ MILLIONS)</i>	50
<i>FIGURE 17 ASIA-PACIFIC INDUSTRIAL FILLERS MARKET BY PRODUCT, 2013 AND 2019 (%)</i>	52
ROW	53
<i>FIGURE 18 ROW INDUSTRIAL FILLERS MARKET DEMAND, 2013-2019 (KILO TONS/\$ MILLIONS)</i>	53
<i>FIGURE 19 ROW INDUSTRIAL FILLERS MARKET BY PRODUCT, 2013 AND 2019 (%)</i>	54
CHAPTER 4 GLOBAL INDUSTRIAL FILLERS MARKET BY TYPES	57
OVERVIEW	57
<i>FIGURE 20 GLOBAL INDUSTRIAL FILLERS MARKET BY VOLUME, 2013 AND 2019 (%)</i>	57
GROUND CALCIUM CARBONATE (GCC)	58
<i>TABLE 17 GLOBAL GCC INDUSTRIAL FILLERS MARKET, THROUGH 2019 (KILO TONS/\$ MILLIONS)</i>	59
<i>TABLE 18 GLOBAL VOLUME FOR GCC INDUSTRIAL FILLERS MARKET BY APPLICATION, THROUGH 2019 (KILO TONS)</i>	59
<i>TABLE 19 GLOBAL REVENUE FOR GCC INDUSTRIAL FILLERS MARKET BY APPLICATION, THROUGH 2019 (\$ MILLIONS)</i>	60
<i>TABLE 20 GLOBAL VOLUME FOR GCC INDUSTRIAL FILLERS MARKET BY REGION, THROUGH 2019 (KILO TONS)</i>	61
<i>TABLE 21 GLOBAL REVENUE FOR GCC INDUSTRIAL FILLERS MARKET BY REGION, THROUGH 2019 (\$ MILLIONS)</i>	62
PRECIPITATED CALCIUM CARBONATE (PCC)	62
<i>TABLE 22 GLOBAL PCC INDUSTRIAL FILLERS MARKET, THROUGH 2019 (KILO TONS/\$ MILLIONS)</i>	62
<i>TABLE 23 GLOBAL VOLUME FOR PCC INDUSTRIAL FILLERS MARKET BY APPLICATION, THROUGH 2019 (KILO TONS)</i>	63
<i>TABLE 24 GLOBAL REVENUE FOR PCC INDUSTRIAL FILLERS MARKET BY APPLICATION, THROUGH 2019 (\$ MILLIONS)</i>	64
<i>TABLE 25 GLOBAL VOLUME FOR PCC INDUSTRIAL FILLERS MARKET BY REGION, THROUGH 2019 (KILO TONS)</i>	64
<i>TABLE 26 GLOBAL REVENUE FOR PCC INDUSTRIAL FILLERS MARKET BY REGION, THROUGH 2019 (\$ MILLIONS)</i>	65
CARBON BLACK	65
<i>TABLE 27 GLOBAL CARBON BLACK INDUSTRIAL FILLERS MARKET, THROUGH 2019 (KILO TONS/\$ MILLIONS)</i>	66
<i>TABLE 28 GLOBAL VOLUME FOR CARBON BLACK INDUSTRIAL FILLERS MARKET BY APPLICATION, THROUGH 2019 (KILO TONS)</i>	66
<i>TABLE 29 GLOBAL REVENUE FOR CARBON BLACK INDUSTRIAL FILLERS MARKET BY APPLICATION, THROUGH 2019 (\$ MILLIONS)</i>	67
<i>TABLE 30 GLOBAL VOLUME FOR CARBON BLACK INDUSTRIAL FILLERS MARKET BY REGION, THROUGH 2019 (KILO TONS)</i>	67
<i>TABLE 31 GLOBAL REVENUE FOR CARBON BLACK INDUSTRIAL FILLERS MARKET BY REGION, THROUGH 2019 (\$ MILLIONS)</i>	68
KAOLIN/CHINA CLAY	69
<i>TABLE 32 GLOBAL KAOLIN INDUSTRIAL FILLERS MARKET, THROUGH 2019 (KILO TONS/\$ MILLIONS)</i>	69

TOPIC	PAGE NO.
TABLE 33 GLOBAL VOLUME FOR KAOLIN INDUSTRIAL FILLERS MARKET BY APPLICATION, THROUGH 2019 (KILO TONS)	69
TABLE 34 GLOBAL REVENUE FOR KAOLIN INDUSTRIAL FILLERS MARKET BY APPLICATION, THROUGH 2019 (\$ MILLIONS)	70
TABLE 35 GLOBAL VOLUME FOR KAOLIN INDUSTRIAL FILLERS MARKET BY REGION, THROUGH 2019 (KILO TONS)	70
TABLE 36 GLOBAL REVENUE FOR KAOLIN INDUSTRIAL FILLERS MARKET BY REGION, THROUGH 2019 (\$ MILLIONS)	71
TALC	71
TABLE 37 GLOBAL TALC INDUSTRIAL FILLERS MARKET, THROUGH 2019 (KILO TONS/\$ MILLIONS)	71
TABLE 38 GLOBAL VOLUME FOR TALC INDUSTRIAL FILLERS MARKET BY APPLICATION, THROUGH 2019 (KILO TONS)	72
TABLE 39 GLOBAL REVENUE FOR TALC INDUSTRIAL FILLERS MARKET BY APPLICATION, THROUGH 2019 (\$ MILLIONS)	72
TABLE 40 GLOBAL VOLUME FOR TALC INDUSTRIAL FILLERS MARKET BY REGION, THROUGH 2019 (KILO TONS)	73
TABLE 41 GLOBAL REVENUE FOR TALC INDUSTRIAL FILLERS MARKET BY REGION, THROUGH 2019 (\$ MILLIONS)	73
CHAPTER 5 GLOBAL MARKETS FOR APPLICATIONS OF INDUSTRIAL FILLERS	76
OVERVIEW	76
FIGURE 21 INDUSTRIAL FILLERS MARKET BY APPLICATIONS, 2013 AND 2019 (%)	76
PAPER	77
TABLE 42 GLOBAL INDUSTRIAL FILLERS MARKET FOR PAPER, THROUGH 2019 (KILO TONS/\$ MILLIONS)	77
TABLE 43 GLOBAL VOLUME FOR INDUSTRIAL FILLERS MARKET FOR PAPER BY PRODUCT, THROUGH 2019 (KILO TONS)	78
TABLE 44 GLOBAL REVENUE FOR INDUSTRIAL FILLERS MARKET FOR PAPER BY PRODUCT, THROUGH 2019 (\$ MILLIONS)	79
FIGURE 22 USE OF FILLER IN THE GLOBAL PAPER MAKING MARKET, 1980, 2003 AND 2014 (%)	79
PLASTICS	81
TABLE 45 GLOBAL INDUSTRIAL FILLERS MARKET FOR PLASTICS, THROUGH 2019 (KILO TONS/\$ MILLIONS)	81
FIGURE 23 GLOBAL PLASTIC PRODUCTION, 2007-2013 (KILO TONS)	82
TABLE 46 GLOBAL VOLUME FOR INDUSTRIAL FILLERS MARKET FOR PLASTICS BY PRODUCT, THROUGH 2019 (KILO TONS)	83
TABLE 47 GLOBAL REVENUE FOR INDUSTRIAL FILLERS MARKET FOR PLASTICS BY PRODUCT, THROUGH 2019 (\$ MILLIONS)	84
PAINTS	84
TABLE 48 GLOBAL INDUSTRIAL FILLERS MARKET FOR PAINTS, THROUGH 2019 (KILO TONS/\$ MILLIONS)	85
FIGURE 24 GLOBAL PAINTS MARKET VOLUME BY REGION, 2007-2017 (KILO TONS)	85
TABLE 49 GLOBAL VOLUME FOR INDUSTRIAL FILLERS MARKET FOR PAINTS BY PRODUCT, THROUGH 2019 (KILO TONS)	86
TABLE 50 GLOBAL REVENUE FOR INDUSTRIAL FILLERS MARKET FOR PAINTS BY PRODUCT, THROUGH 2019 (\$ MILLIONS)	87
ADHESIVES	87
TABLE 51 GLOBAL INDUSTRIAL FILLERS MARKET FOR ADHESIVES, THROUGH 2019 (KILO TONS/\$ MILLIONS)	87

TOPIC	PAGE NO.
<i>FIGURE 25 GLOBAL ADHESIVES MARKET ESTIMATES AND FORECAST, THROUGH 2020 (KILO TONS)</i>	88
<i>TABLE 52 GLOBAL VOLUME FOR INDUSTRIAL FILLERS MARKET FOR ADHESIVES BY PRODUCT, THROUGH 2019 (KILO TONS)</i>	89
<i>TABLE 53 GLOBAL REVENUE FOR INDUSTRIAL FILLERS MARKET FOR ADHESIVES BY PRODUCT, THROUGH 2019 (\$ MILLIONS)</i>	90
OTHERS	90
<i>TABLE 54 GLOBAL INDUSTRIAL FILLERS MARKET FOR OTHER APPLICATIONS, THROUGH 2019 (KILO TONS/\$ MILLIONS)</i>	90
<i>TABLE 55 GLOBAL VOLUME FOR INDUSTRIAL FILLERS MARKET FOR OTHER APPLICATIONS BY PRODUCT, THROUGH 2019 (KILO TONS)</i>	91
<i>FIGURE 26 GLOBAL RUBBER CONSUMPTION, 2000 - 2013 (KILO TONS)</i>	92
<i>TABLE 56 GLOBAL REVENUE FOR INDUSTRIAL FILLERS MARKET FOR OTHER APPLICATIONS BY PRODUCT, THROUGH 2019 (\$ MILLIONS)</i>	93
CHAPTER 6 INDUSTRIAL FILLERS MARKET BY REGION	95
NORTH AMERICA	95
<i>TABLE 57 NORTH AMERICA INDUSTRIAL FILLERS MARKET, THROUGH 2019 (KILO TONS/\$ MILLIONS)</i>	95
<i>FIGURE 27 NORTH AMERICA GDP, BY COUNTRY, 2006-2013 (%)</i>	95
<i>TABLE 58 U.S. RUBBER TIRE SHIPMENTS, 2009-2013 (MILLION UNITS)</i>	97
<i>FIGURE 28 U.S. TIRE REPLACEMENT SALES, 2013 (%)</i>	97
<i>TABLE 59 VOLUME FOR NORTH AMERICAN INDUSTRIAL FILLERS MARKET BY PRODUCT, THROUGH 2019 (KILO TONS)</i>	98
<i>TABLE 60 REVENUE FOR NORTH AMERICAN INDUSTRIAL FILLERS MARKET BY PRODUCT, THROUGH 2019 (\$ MILLIONS)</i>	99
<i>TABLE 61 U.S. RESIN PRODUCTION, SALES AND CAPTIVE CONSUMPTION, 2012 AND 2013 (KILO TONS)</i>	99
<i>FIGURE 29 NORTH AMERICAN PAINTS AND COATINGS MARKET, 2007 - 2016 (\$ MILLIONS)</i>	100
EUROPE	102
<i>FIGURE 30 ANNUAL GDP GROWTH, EUROPEAN UNION VS. WORLD, 2006-2013 (%)</i>	102
<i>TABLE 62 EUROPEAN INDUSTRIAL FILLERS MARKET, THROUGH 2019 (KILO TONS/\$ MILLIONS)</i>	103
<i>TABLE 63 VOLUME FOR EUROPEAN INDUSTRIAL FILLERS MARKET BY PRODUCT, THROUGH 2019 (KILO TONS)</i>	103
<i>TABLE 64 REVENUE FOR EUROPEAN INDUSTRIAL FILLERS MARKET BY PRODUCT, THROUGH 2019 (\$ MILLIONS)</i>	104
<i>FIGURE 31 EUROPEAN PLASTIC PRODUCTION, 2008-2013 (MILLION TONS)</i>	104
<i>FIGURE 32 EUROPEAN PLASTICS MARKET BY APPLICATION, 2012 (%)</i>	105
<i>FIGURE 33 EUROPEAN PAINTS AND COATINGS MARKET, 2007-2016 (KILO TONS)</i>	106
<i>FIGURE 34 EUROPE PAINTS AND COATINGS MARKET BY APPLICATION, 2011 (%)</i>	108
<i>FIGURE 35 EUROPEAN RUBBER TIRE SALES, 2003-2010 (MILLION UNITS)</i>	109
APAC	110
<i>TABLE 65 ASIA-PACIFIC INDUSTRIAL FILLERS MARKET, THROUGH 2019 (KILO TONS/\$ MILLIONS)</i>	110
<i>FIGURE 36 GDP GROWTH, CHINA VS. INDIA VS. WORLD (%)</i>	111
<i>TABLE 66 VOLUME FOR ASIA-PACIFIC INDUSTRIAL FILLERS MARKET BY PRODUCT, THROUGH 2019 (KILO TONS)</i>	112
<i>TABLE 67 REVENUE FOR ASIA-PACIFIC INDUSTRIAL FILLERS MARKET BY PRODUCT, THROUGH 2019 (\$ MILLIONS)</i>	113

TOPIC	PAGE NO.
<i>TABLE 68 ASIA-PACIFIC PAINT DEMAND BY SELECT COUNTRIES, 2009 AND 2014 (KILO TONS)</i>	113
<i>TABLE 69 PROJECTED CAPACITY EXPANSION IN CHINA BY KEY COMPANIES (KILO TONS)</i>	114
<i>FIGURE 37 ASIA-PACIFIC RUBBER (SYNTHETIC AND NATURAL) PRODUCTION AND CONSUMPTION, 2013 AND 2014 (KILO TONS)</i>	114
ROW	115
<i>TABLE 70 ROW INDUSTRIAL FILLERS MARKET, THROUGH 2019 (KILO TONS) (\$ MILLIONS)</i>	115
<i>FIGURE 38 GDP GROWTH RATE ACROSS SELECT COUNTRIES, 2006 - 2013 (%)</i>	116
<i>TABLE 71 VOLUME FOR ROW INDUSTRIAL FILLERS MARKET BY PRODUCT, THROUGH 2019 (KILO TONS)</i>	118
<i>TABLE 72 REVENUE FOR ROW INDUSTRIAL FILLERS MARKET BY PRODUCT, THROUGH 2019 (\$ MILLIONS)</i>	118
<i>FIGURE 39 LATIN AMERICAN PAINTS AND COATINGS PRODUCTION, 2007-2016 (KILO TONS)</i>	119
<i>FIGURE 40 MIDDLE EASTERN PAINTS AND COATINGS PRODUCTION, 2007-2016 (KILO TONS)</i>	119
<i>FIGURE 41 AUTOMOTIVE SALES IN THE MIDDLE EAST, AFRICA, AND CENTRAL AND SOUTH AMERICA, 2012-2014 (UNITS)</i>	120
<i>TABLE 73 ROW TIRE REPLACEMENT SALES, 2011-2014 (THOUSAND UNITS)</i>	121
CHAPTER 7 COMPANY PROFILES	123
ALCOA	123
<i>TABLE 74 ALCOA'S PRODUCT PORTFOLIO</i>	123
AMERICAN TALC COMPANY	123
<i>TABLE 75 AMERICAN TALC COMPANY'S PRODUCT PORTFOLIO</i>	123
ASHAPURA CHINA CLAY COMPANY LLP	124
<i>TABLE 76 ASHAPURA CHINA CLAY'S PRODUCT PORTFOLIO</i>	124
BASF	124
<i>TABLE 77 BASF'S PRODUCT PORTFOLIO</i>	125
CALCITECH	125
<i>TABLE 78 CALCITECH'S PRODUCT PORTFOLIO</i>	126
CEMEX IRELAND	126
<i>TABLE 79 CEMEX'S PRODUCT PORTFOLIO</i>	126
CONSTRUCTION MATERIALS INDUSTRIES (CMI)	127
<i>TABLE 80 CONSTRUCTION MATERIALS INDUSTRIES' PRODUCT PORTFOLIO</i>	127
DALECO RESOURCES	127
EGEMIN MADENCILIK	127
<i>TABLE 81 EGEMIN MADENCILIK'S PRODUCT PORTFOLIO</i>	128
ESAN ECZACIBASI	128
EXCALIBAR MINERALS	128
<i>TABLE 82 EXCALIBAR'S PRODUCT PORTFOLIO</i>	128
<i>TABLE 83 RECENT DEVELOPMENTS, 2011-JANUARY, 2015</i>	129
GREAT LAKES CALCIUM CORP.	129
<i>TABLE 84 GLC'S PRODUCT PORTFOLIO</i>	130
GRUPO INDUSTRIAL MONCLOVA	131
HUBER ENGINEERED MATERIALS	131
<i>TABLE 85 HUBER'S PRODUCT PORTFOLIO</i>	131

TOPIC	PAGE NO.
<i>TABLE 86 RECENT DEVELOPMENTS, 2011-JANUARY, 2015</i>	132
IMERYS	132
<i>TABLE 87 IMERYS' PRODUCT PORTFOLIO</i>	133
<i>TABLE 88 RECENT DEVELOPMENTS, 2011-JANUARY, 2015</i>	133
I-MINERALS INC.	133
KAMIN	134
<i>TABLE 89 KAMIN'S PRODUCT PORTFOLIO</i>	134
<i>TABLE 90 RECENT DEVELOPMENTS, 2011-JANUARY, 2015</i>	135
KAOLIN	135
<i>TABLE 91 KAOLIN'S PRODUCT PORTFOLIO</i>	136
LINH THANH (LTG LIME)	136
<i>TABLE 92 LTG'S PRODUCT PORTFOLIO</i>	137
LKAB MINERALS AB	137
<i>TABLE 93 LKAB MINERALS AB'S PRODUCT PORTFOLIO</i>	138
<i>TABLE 94 RECENT DEVELOPMENTS, 2011-MARCH 2015</i>	138
MAGNESITA	138
<i>TABLE 95 MAGNESITA'S PRODUCT PORTFOLIO</i>	139
MARTIN LIMESTONE	139
<i>TABLE 96 MARTIN LIMESTONE'S PRODUCT PORTFOLIO</i>	139
MARUO CALCIUM CO. LTD.	140
<i>TABLE 97 MARUO CALCIUM'S PRODUCT PORTFOLIO</i>	140
MINERALS TECHNOLOGIES INC.	141
<i>TABLE 98 MINERAL TECHNOLOGIES' PRODUCT PORTFOLIO</i>	141
MISSISSIPPI LIME CO.	142
<i>TABLE 99 MISSISSIPPI LIME'S PRODUCT PORTFOLIO</i>	142
<i>TABLE 100 RECENT DEVELOPMENTS, 2011-JANUARY, 2015</i>	143
NORDKALK	143
<i>TABLE 101 NORDKALK'S PRODUCT PORTFOLIO</i>	144
<i>TABLE 102 RECENT DEVELOPMENTS, 2011-JANUARY, 2015</i>	144
OKUTAMA KOGYO CO.LTD.	145
<i>TABLE 103 OKUTAMA'S PRODUCT PORTFOLIO</i>	145
OMYA	145
<i>TABLE 104 OMYA'S PRODUCT PORTFOLIO</i>	146
PIQUA MATERIALS	146
<i>TABLE 105 PIQUA MATERIALS' PRODUCT PORTFOLIO</i>	146
QUARZWERKE GMBH	147
<i>TABLE 106 QUARZWERKE'S PRODUCT PORTFOLIO</i>	147
REINSTE NANO VENTURES	147
<i>TABLE 107 REINSTE'S PRODUCT PORTFOLIO</i>	148
SCHAEFER KALK GMBH & CO. KG	149
<i>TABLE 108 SCHAEFER KALK'S PRODUCT PORTFOLIO</i>	149
SHIRAISHI KOGYO KAISHA LTD.	149
<i>TABLE 109 SHIRAISHI KOGYO'S PRODUCT PORTFOLIO</i>	150
SHREE SAI CALNATES	151
<i>TABLE 110 SHREE SAI CALNATES' PRODUCT PORTFOLIO</i>	151
SIBELCO	151
<i>TABLE 111 SIBELCO'S PRODUCT PORTFOLIO</i>	151

TOPIC	PAGE NO.
SOLVAY S.A.	152
<i>TABLE 112 SOLVAY'S PRODUCT PORTFOLIO</i>	152
<i>TABLE 113 RECENT DEVELOPMENTS, 2011-JANUARY, 2015</i>	153
THIELE KAOLIN CO	154
<i>TABLE 114 THIELE'S PRODUCT PORTFOLIO</i>	154
UNIMIN CORPORATION	155
<i>TABLE 115 UNIMIN'S PRODUCT PORTFOLIO</i>	156
<i>TABLE 116 RECENT DEVELOPMENTS, 2011-JANUARY, 2015</i>	157
URBAN MINING NORTHEAST LLC	157
<i>TABLE 117 URBAN MINING'S PRODUCT PORTFOLIO</i>	157
WHITEMUD RESOURCES INC.	158
ZANTAT SDN BHD	158
<i>TABLE 118 ZANTAT SDN BHD'S PRODUCT PORTFOLIO</i>	158
<i>TABLE 119 RECENT DEVELOPMENTS, 2011-JANUARY, 2015</i>	159
CHAPTER 8 PATENT ANALYSIS	161
LIST OF PATENTS	161
UNITED STATES	161
<i>TABLE 120 U.S. PATENTS, 2012-FEBRUARY 2015</i>	161
EUROPE	164
<i>TABLE 121 EUROPE PATENTS, 2012-FEBRUARY 2015</i>	164
JAPAN	168
<i>TABLE 122 JAPAN PATENTS, 2012-FEBRUARY 2015</i>	168

LIST OF TABLES

TABLE HEADING	PAGE NO.
SUMMARY TABLE GLOBAL INDUSTRIAL FILLERS MARKET BY PRODUCTS, THROUGH 2019 (\$ MILLIONS)	7
TABLE 1 GLOBAL INDUSTRIAL FILLERS MARKET, THROUGH 2019 (KILO TONS/\$ MILLIONS)	10
TABLE 2 GLOBAL VOLUME FOR INDUSTRIAL FILLERS MARKET BY REGION, THROUGH 2019 (KILO TONS)	11
TABLE 3 GLOBAL REVENUE FOR INDUSTRIAL FILLERS MARKET BY REGION, THROUGH 2019 (\$ MILLIONS)	12
TABLE 4 KEY CALCIUM CARBONATE MANUFACTURING COMPANIES BY LOCATION	18
TABLE 5 KEY KAOLIN MANUFACTURING COMPANIES, BY LOCATION	20
TABLE 6 KEY CARBON BLACK MANUFACTURING COMPANIES, BY LOCATION	21
TABLE 7 KEY TALC MANUFACTURING COMPANIES, BY LOCATION	22
TABLE 8 PULP PRODUCTION IN NORTH AMERICA AND EUROPE, 2004-2009 (MILLION TONS)	29
TABLE 9 FUNCTIONS OF FILLERS DEPENDING ON THE SIZE OF THE PARTICLES	31
TABLE 10 FILLER TYPE BY APPLICATION	35
TABLE 11 GENERAL PROPERTIES OF FILLERS	36
TABLE 12 PROPERTIES OF KAOLIN	36
TABLE 13 GENERAL PROPERTIES OF TALC	37
TABLE 14 COMPARISON BETWEEN PLATY TALC AND TREMOLITIC TALC	38
TABLE 15 PROPERTIES OF GROUND CALCIUM CARBONATE (GCC)	39
TABLE 16 PROPERTIES OF PRECIPITATED CALCIUM CARBONATE (PCC)	39
TABLE 17 GLOBAL GCC INDUSTRIAL FILLERS MARKET, THROUGH 2019 (KILO TONS/\$ MILLIONS)	59
TABLE 18 GLOBAL VOLUME FOR GCC INDUSTRIAL FILLERS MARKET BY APPLICATION, THROUGH 2019 (KILO TONS)	59
TABLE 19 GLOBAL REVENUE FOR GCC INDUSTRIAL FILLERS MARKET BY APPLICATION, THROUGH 2019 (\$ MILLIONS)	60
TABLE 20 GLOBAL VOLUME FOR GCC INDUSTRIAL FILLERS MARKET BY REGION, THROUGH 2019 (KILO TONS)	61
TABLE 21 GLOBAL REVENUE FOR GCC INDUSTRIAL FILLERS MARKET BY REGION, THROUGH 2019 (\$ MILLIONS)	62
TABLE 22 GLOBAL PCC INDUSTRIAL FILLERS MARKET, THROUGH 2019 (KILO TONS/\$ MILLIONS)	62
TABLE 23 GLOBAL VOLUME FOR PCC INDUSTRIAL FILLERS MARKET BY APPLICATION, THROUGH 2019 (KILO TONS)	63
TABLE 24 GLOBAL REVENUE FOR PCC INDUSTRIAL FILLERS MARKET BY APPLICATION, THROUGH 2019 (\$ MILLIONS)	64
TABLE 25 GLOBAL VOLUME FOR PCC INDUSTRIAL FILLERS MARKET BY REGION, THROUGH 2019 (KILO TONS)	64
TABLE 26 GLOBAL REVENUE FOR PCC INDUSTRIAL FILLERS MARKET BY REGION, THROUGH 2019 (\$ MILLIONS)	65
TABLE 27 GLOBAL CARBON BLACK INDUSTRIAL FILLERS MARKET, THROUGH 2019 (KILO TONS/\$ MILLIONS)	66
TABLE 28 GLOBAL VOLUME FOR CARBON BLACK INDUSTRIAL FILLERS MARKET BY APPLICATION, THROUGH 2019 (KILO TONS)	66
TABLE 29 GLOBAL REVENUE FOR CARBON BLACK INDUSTRIAL FILLERS MARKET BY APPLICATION, THROUGH 2019 (\$ MILLIONS)	67
TABLE 30 GLOBAL VOLUME FOR CARBON BLACK INDUSTRIAL FILLERS MARKET BY REGION, THROUGH 2019 (KILO TONS)	67

TABLE HEADING	PAGE NO.
TABLE 31 GLOBAL REVENUE FOR CARBON BLACK INDUSTRIAL FILLERS MARKET BY REGION, THROUGH 2019 (\$ MILLIONS)	68
TABLE 32 GLOBAL KAOLIN INDUSTRIAL FILLERS MARKET, THROUGH 2019 (KILO TONS/\$ MILLIONS)	69
TABLE 33 GLOBAL VOLUME FOR KAOLIN INDUSTRIAL FILLERS MARKET BY APPLICATION, THROUGH 2019 (KILO TONS)	69
TABLE 34 GLOBAL REVENUE FOR KAOLIN INDUSTRIAL FILLERS MARKET BY APPLICATION, THROUGH 2019 (\$ MILLIONS)	70
TABLE 35 GLOBAL VOLUME FOR KAOLIN INDUSTRIAL FILLERS MARKET BY REGION, THROUGH 2019 (KILO TONS)	70
TABLE 36 GLOBAL REVENUE FOR KAOLIN INDUSTRIAL FILLERS MARKET BY REGION, THROUGH 2019 (\$ MILLIONS)	71
TABLE 37 GLOBAL TALC INDUSTRIAL FILLERS MARKET, THROUGH 2019 (KILO TONS/\$ MILLIONS)	71
TABLE 38 GLOBAL VOLUME FOR TALC INDUSTRIAL FILLERS MARKET BY APPLICATION, THROUGH 2019 (KILO TONS)	72
TABLE 39 GLOBAL REVENUE FOR TALC INDUSTRIAL FILLERS MARKET BY APPLICATION, THROUGH 2019 (\$ MILLIONS)	72
TABLE 40 GLOBAL VOLUME FOR TALC INDUSTRIAL FILLERS MARKET BY REGION, THROUGH 2019 (KILO TONS)	73
TABLE 41 GLOBAL REVENUE FOR TALC INDUSTRIAL FILLERS MARKET BY REGION, THROUGH 2019 (\$ MILLIONS)	73
TABLE 42 GLOBAL INDUSTRIAL FILLERS MARKET FOR PAPER, THROUGH 2019 (KILO TONS/\$ MILLIONS)	77
TABLE 43 GLOBAL VOLUME FOR INDUSTRIAL FILLERS MARKET FOR PAPER BY PRODUCT, THROUGH 2019 (KILO TONS)	78
TABLE 44 GLOBAL REVENUE FOR INDUSTRIAL FILLERS MARKET FOR PAPER BY PRODUCT, THROUGH 2019 (\$ MILLIONS)	79
TABLE 45 GLOBAL INDUSTRIAL FILLERS MARKET FOR PLASTICS, THROUGH 2019 (KILO TONS/\$ MILLIONS)	81
TABLE 46 GLOBAL VOLUME FOR INDUSTRIAL FILLERS MARKET FOR PLASTICS BY PRODUCT, THROUGH 2019 (KILO TONS)	83
TABLE 47 GLOBAL REVENUE FOR INDUSTRIAL FILLERS MARKET FOR PLASTICS BY PRODUCT, THROUGH 2019 (\$ MILLIONS)	84
TABLE 48 GLOBAL INDUSTRIAL FILLERS MARKET FOR PAINTS, THROUGH 2019 (KILO TONS/\$ MILLIONS)	85
TABLE 49 GLOBAL VOLUME FOR INDUSTRIAL FILLERS MARKET FOR PAINTS BY PRODUCT, THROUGH 2019 (KILO TONS)	86
TABLE 50 GLOBAL REVENUE FOR INDUSTRIAL FILLERS MARKET FOR PAINTS BY PRODUCT, THROUGH 2019 (\$ MILLIONS)	87
TABLE 51 GLOBAL INDUSTRIAL FILLERS MARKET FOR ADHESIVES, THROUGH 2019 (KILO TONS/\$ MILLIONS)	87
TABLE 52 GLOBAL VOLUME FOR INDUSTRIAL FILLERS MARKET FOR ADHESIVES BY PRODUCT, THROUGH 2019 (KILO TONS)	89
TABLE 53 GLOBAL REVENUE FOR INDUSTRIAL FILLERS MARKET FOR ADHESIVES BY PRODUCT, THROUGH 2019 (\$ MILLIONS)	90
TABLE 54 GLOBAL INDUSTRIAL FILLERS MARKET FOR OTHER APPLICATIONS, THROUGH 2019 (KILO TONS/\$ MILLIONS)	90
TABLE 55 GLOBAL VOLUME FOR INDUSTRIAL FILLERS MARKET FOR OTHER APPLICATIONS BY PRODUCT, THROUGH 2019 (KILO TONS)	91
TABLE 56 GLOBAL REVENUE FOR INDUSTRIAL FILLERS MARKET FOR OTHER APPLICATIONS BY PRODUCT, THROUGH 2019 (\$ MILLIONS)	93

TABLE HEADING	PAGE NO.
TABLE 57 NORTH AMERICA INDUSTRIAL FILLERS MARKET, THROUGH 2019 (KILO TONS/\$ MILLIONS)	95
TABLE 58 U.S. RUBBER TIRE SHIPMENTS, 2009-2013 (MILLION UNITS)	97
TABLE 59 VOLUME FOR NORTH AMERICAN INDUSTRIAL FILLERS MARKET BY PRODUCT, THROUGH 2019 (KILO TONS)	98
TABLE 60 REVENUE FOR NORTH AMERICAN INDUSTRIAL FILLERS MARKET BY PRODUCT, THROUGH 2019 (\$ MILLIONS)	99
TABLE 61 U.S. RESIN PRODUCTION, SALES AND CAPTIVE CONSUMPTION, 2012 AND 2013 (KILO TONS)	99
TABLE 62 EUROPEAN INDUSTRIAL FILLERS MARKET, THROUGH 2019 (KILO TONS/\$ MILLIONS)	103
TABLE 63 VOLUME FOR EUROPEAN INDUSTRIAL FILLERS MARKET BY PRODUCT, THROUGH 2019 (KILO TONS)	103
TABLE 64 REVENUE FOR EUROPEAN INDUSTRIAL FILLERS MARKET BY PRODUCT, THROUGH 2019 (\$ MILLIONS)	104
TABLE 65 ASIA-PACIFIC INDUSTRIAL FILLERS MARKET, THROUGH 2019 (KILO TONS/\$ MILLIONS)	110
TABLE 66 VOLUME FOR ASIA-PACIFIC INDUSTRIAL FILLERS MARKET BY PRODUCT, THROUGH 2019 (KILO TONS)	112
TABLE 67 REVENUE FOR ASIA-PACIFIC INDUSTRIAL FILLERS MARKET BY PRODUCT, THROUGH 2019 (\$ MILLIONS)	113
TABLE 68 ASIA-PACIFIC PAINT DEMAND BY SELECT COUNTRIES, 2009 AND 2014 (KILO TONS)	113
TABLE 69 PROJECTED CAPACITY EXPANSION IN CHINA BY KEY COMPANIES (KILO TONS)	114
TABLE 70 ROW INDUSTRIAL FILLERS MARKET, THROUGH 2019 (KILO TONS) (\$ MILLIONS)	115
TABLE 71 VOLUME FOR ROW INDUSTRIAL FILLERS MARKET BY PRODUCT, THROUGH 2019 (KILO TONS)	118
TABLE 72 REVENUE FOR ROW INDUSTRIAL FILLERS MARKET BY PRODUCT, THROUGH 2019 (\$ MILLIONS)	118
TABLE 73 ROW TIRE REPLACEMENT SALES, 2011-2014 (THOUSAND UNITS)	121
TABLE 74 ALCOA'S PRODUCT PORTFOLIO	123
TABLE 75 AMERICAN TALC COMPANY'S PRODUCT PORTFOLIO	123
TABLE 76 ASHAPURA CHINA CLAY'S PRODUCT PORTFOLIO	124
TABLE 77 BASF'S PRODUCT PORTFOLIO	125
TABLE 78 CALCITECH'S PRODUCT PORTFOLIO	126
TABLE 79 CEMEX'S PRODUCT PORTFOLIO	126
TABLE 80 CONSTRUCTION MATERIALS INDUSTRIES' PRODUCT PORTFOLIO	127
TABLE 81 EGEMIN MADENCILIK'S PRODUCT PORTFOLIO	128
TABLE 82 EXCALIBAR'S PRODUCT PORTFOLIO	128
TABLE 83 RECENT DEVELOPMENTS, 2011-JANUARY, 2015	129
TABLE 84 GLC'S PRODUCT PORTFOLIO	130
TABLE 85 HUBER'S PRODUCT PORTFOLIO	131
TABLE 86 RECENT DEVELOPMENTS, 2011-JANUARY, 2015	132
TABLE 87 IMERYS' PRODUCT PORTFOLIO	133
TABLE 88 RECENT DEVELOPMENTS, 2011-JANUARY, 2015	133
TABLE 89 KAMIN'S PRODUCT PORTFOLIO	134
TABLE 90 RECENT DEVELOPMENTS, 2011-JANUARY, 2015	135
TABLE 91 KAOLIN'S PRODUCT PORTFOLIO	136

TABLE HEADING	PAGE NO.
TABLE 92 LTG'S PRODUCT PORTFOLIO	137
TABLE 93 LKAB MINERALS AB'S PRODUCT PORTFOLIO	138
TABLE 94 RECENT DEVELOPMENTS, 2011-MARCH 2015	138
TABLE 95 MAGNESITA'S PRODUCT PORTFOLIO	139
TABLE 96 MARTIN LIMESTONE'S PRODUCT PORTFOLIO	139
TABLE 97 MARUO CALCIUM'S PRODUCT PORTFOLIO	140
TABLE 98 MINERAL TECHNOLOGIES' PRODUCT PORTFOLIO	141
TABLE 99 MISSISSIPPI LIME'S PRODUCT PORTFOLIO	142
TABLE 100 RECENT DEVELOPMENTS, 2011-JANUARY, 2015	143
TABLE 101 NORDKALK'S PRODUCT PORTFOLIO	144
TABLE 102 RECENT DEVELOPMENTS, 2011-JANUARY, 2015	144
TABLE 103 OKUTAMA'S PRODUCT PORTFOLIO	145
TABLE 104 OMYA'S PRODUCT PORTFOLIO	146
TABLE 105 PIQUA MATERIALS' PRODUCT PORTFOLIO	146
TABLE 106 QUARZWERKE'S PRODUCT PORTFOLIO	147
TABLE 107 REINSTE'S PRODUCT PORTFOLIO	148
TABLE 108 SCHAEFER KALK'S PRODUCT PORTFOLIO	149
TABLE 109 SHIRAIISHI KOGYO'S PRODUCT PORTFOLIO	150
TABLE 110 SHREE SAI CALNATES' PRODUCT PORTFOLIO	151
TABLE 111 SIBELCO'S PRODUCT PORTFOLIO	151
TABLE 112 SOLVAY'S PRODUCT PORTFOLIO	152
TABLE 113 RECENT DEVELOPMENTS, 2011-JANUARY, 2015	153
TABLE 114 THIELE'S PRODUCT PORTFOLIO	154
TABLE 115 UNIMIN'S PRODUCT PORTFOLIO	156
TABLE 116 RECENT DEVELOPMENTS, 2011-JANUARY, 2015	157
TABLE 117 URBAN MINING'S PRODUCT PORTFOLIO	157
TABLE 118 ZANTAT SDN BHD'S PRODUCT PORTFOLIO	158
TABLE 119 RECENT DEVELOPMENTS, 2011-JANUARY, 2015	159
TABLE 120 U.S. PATENTS, 2012-FEBRUARY 2015	161
TABLE 121 EUROPE PATENTS, 2012-FEBRUARY 2015	164
TABLE 122 JAPAN PATENTS, 2012-FEBRUARY 2015	168

LIST OF FIGURES

FIGURE TITLE	PAGE NO.
SUMMARY FIGURE GLOBAL INDUSTRIAL FILLERS MARKET BY PRODUCTS, 2013-2019 (\$ MILLIONS)	7
FIGURE 1 GLOBAL VOLUME FOR INDUSTRIAL FILLERS MARKET BY TYPE, 2013 (%)	12
FIGURE 2 GLOBAL GCC MARKET BY END-USE PRODUCTS, 2013 (%)	13
FIGURE 3 GLOBAL PCC MARKET BY END-USE PRODUCTS, 2013 (%)	15
FIGURE 4 GLOBAL CARBON BLACK MARKET BY END-USE PRODUCTS, 2013 (%)	15
FIGURE 5 GLOBAL KAOLIN MARKET BY END-USE PRODUCTS, 2013 (%)	16
FIGURE 6 GLOBAL TALC MARKET BY END-USE PRODUCTS, 2013 (%)	17
FIGURE 7 ESTIMATED GROWTH RATE FOR CONSTRUCTION, 2013 (%)	23
FIGURE 8 CHINA: AUTOMOBILE PRODUCTION, 2001-2020 (THOUSAND UNITS)	24
FIGURE 9 GCC PETROCHEMICALS PRODUCTION, 2007-2015 (MILLION TONS/YEAR)	26
FIGURE 10 THERMOPLASTIC REGIONAL NET TRADE PROJECTION, 2017 (MILLION TONS)	26
FIGURE 11 THERMOPLASTIC PLANNED CAPACITY INCREASE FROM 2012 TO 2017 (MILLION TONS)	27
FIGURE 12 NORTH AMERICAN INDUSTRIAL FILLERS MARKET, 2013- 2019 (KILO TONS/\$ MILLIONS)	46
FIGURE 13 NORTH AMERICAN INDUSTRIAL FILLERS MARKET BY PRODUCT, 2013 AND 2019	47
FIGURE 14 EUROPE INDUSTRIAL FILLERS MARKET DEMAND, 2013-2019 (KILO TONS/\$ MILLIONS)	48
FIGURE 15 EUROPEAN INDUSTRIAL FILLERS MARKET BY PRODUCT, 2013 AND 2019 (%)	49
FIGURE 16 ASIA-PACIFIC INDUSTRIAL FILLERS MARKET, 2013-2019 (KILO TONS/\$ MILLIONS)	50
FIGURE 17 ASIA-PACIFIC INDUSTRIAL FILLERS MARKET BY PRODUCT, 2013 AND 2019 (%)	52
FIGURE 18 ROW INDUSTRIAL FILLERS MARKET DEMAND, 2013-2019 (KILO TONS/\$ MILLIONS)	53
FIGURE 19 ROW INDUSTRIAL FILLERS MARKET BY PRODUCT, 2013 AND 2019 (%)	54
FIGURE 20 GLOBAL INDUSTRIAL FILLERS MARKET BY VOLUME, 2013 AND 2019 (%)	57
FIGURE 21 INDUSTRIAL FILLERS MARKET BY APPLICATIONS, 2013 AND 2019 (%)	76
FIGURE 22 USE OF FILLER IN THE GLOBAL PAPER MAKING MARKET, 1980, 2003 AND 2014 (%)	79
FIGURE 23 GLOBAL PLASTIC PRODUCTION, 2007-2013 (KILO TONS)	82
FIGURE 24 GLOBAL PAINTS MARKET VOLUME BY REGION, 2007-2017 (KILO TONS)	85
FIGURE 25 GLOBAL ADHESIVES MARKET ESTIMATES AND FORECAST, THROUGH 2020 (KILO TONS)	88
FIGURE 26 GLOBAL RUBBER CONSUMPTION, 2000 - 2013 (KILO TONS)	92
FIGURE 27 NORTH AMERICA GDP, BY COUNTRY, 2006-2013 (%)	95
FIGURE 28 U.S. TIRE REPLACEMENT SALES, 2013 (%)	97
FIGURE 29 NORTH AMERICAN PAINTS AND COATINGS MARKET, 2007 - 2016 (\$ MILLIONS)	100
FIGURE 30 ANNUAL GDP GROWTH, EUROPEAN UNION VS. WORLD, 2006-2013 (%)	102
FIGURE 31 EUROPEAN PLASTIC PRODUCTION, 2008-2013 (MILLION TONS)	104
FIGURE 32 EUROPEAN PLASTICS MARKET BY APPLICATION, 2012 (%)	105
FIGURE 33 EUROPEAN PAINTS AND COATINGS MARKET, 2007-2016 (KILO TONS)	106
FIGURE 34 EUROPE PAINTS AND COATINGS MARKET BY APPLICATION, 2011 (%)	108
FIGURE 35 EUROPEAN RUBBER TIRE SALES, 2003-2010 (MILLION UNITS)	109

FIGURE TITLE	PAGE NO.
FIGURE 36 GDP GROWTH, CHINA VS. INDIA VS. WORLD (%)	111
FIGURE 37 ASIA-PACIFIC RUBBER (SYNTHETIC AND NATURAL) PRODUCTION AND CONSUMPTION, 2013 AND 2014 (KILO TONS)	114
FIGURE 38 GDP GROWTH RATE ACROSS SELECT COUNTRIES, 2006 - 2013 (%)	116
FIGURE 39 LATIN AMERICAN PAINTS AND COATINGS PRODUCTION, 2007-2016 (KILO TONS)	119
FIGURE 40 MIDDLE EASTERN PAINTS AND COATINGS PRODUCTION, 2007-2016 (KILO TONS)	119
FIGURE 41 AUTOMOTIVE SALES IN THE MIDDLE EAST, AFRICA, AND CENTRAL AND SOUTH AMERICA, 2012-2014 (UNITS)	120