

Advanced Ceramics Market by Material (Alumina, Zirconia, Titanate, Silicon Carbide), Application, End-Use Industry (Electrical & Electronics, Transportation, Medical, Defense & Security, Environmental, Chemical) and Region - Global Forecast to 2027

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## Report description:

The global advanced ceramics market size is estimated to be USD 10.9 billion in 2022 and projected to reach USD 13.9 billion by 2027, at a CAGR of 5.1%. Advanced ceramics have superior corrosion resistance compared to other materials (such as aluminum and steel), resulting in decreased maintenance and other costs for aircraft, automobiles, and armors. This makes these ceramics a favorable material for various end-use industries such as aerospace, energy & power, automotive, electronics, and military & defense

Compared to other conventional alloys and metals, the thermal expansion of advanced ceramics is much lower when placed under the same environmental conditions. This factor has driven the use of these ceramics in different end-use industries. In addition, the high resistance to corrosion, temperature, low-wear process, and reduction in emissions provided by advanced ceramics are fueling the demand globally. These ceramics retain their shape and size even when they are used in extreme temperature applications, such as in gas turbines, aircraft engines, and fuel cells, providing dimensional stability and increasing safety. Advanced ceramics have superior wear resistance, high-temperature strength, and chemical stability in comparison to metals. These ceramics have replaced metals in many applications, such as cutting tools, bearings, filters, and coatings. They are also being used in niche applications in automobiles such as turbochargers, glow plugs, and combustion chambers. The increased use of advanced ceramics instead of metals in various end-use industries is driving the market globally. Advanced ceramics have replaced plastics in many applications, such as miniature components used in electronic circuits; instruments used in the pharmaceutical industry; and scalpels, tubes, and crucibles used in the medical industry. Advanced ceramics are expected to completely replace metals and plastics in many applications in the near future.

"Silicon carbide ceramics: The fastest-growing segment of the advanced ceramics market, by material"
Silicon carbide ceramic is the most corrosion-resistant, lightweight, and hardest ceramic material which can maintains its strength

at up to 2,552?F. Silicon carbide ceramics have numerous application areas, and they are also ideal for use in demanding conditions in various sectors such as nuclear energy, space technology, automobile, marine engineering, and electronics & electrical. It is toxicologically safe and can be used in the food & beverage industry as well. It considered to be the most promising material for manufacturing rocket nozzles, gas turbines, and engine components in the aerospace and automotive sector. "Monolithic ceramics accounted for the largest market share amongst other applications in the advanced ceramics market" Monolithic ceramics are highly reliable owing to their high durability, and protection against higher temperature. These properties help increase the component's life hence monolithic ceramics are used in industries that involve high-temperature operations. These ceramics are primarily used in end-use industries, such as aerospace, automotive, power generation, transportation, military & defense, medical, and electrical & electronics.

"Electrical & electronics is expected to be the largest advanced ceramics consumer amongst all end-use industries"

Advanced ceramic possess excellent properties including good insulation, piezoelectric & dielectric properties, and superconductivity, which makes them highly preferred in the electronics industry. Ceramic components are essential in products such as smartphones, computers, televisions, and automotive electronics. Advanced ceramics are used in manufacturing various electronics component, including capacitors, insulators, integrated circuit packages, piezoelectric components, and others.

"APAC: The largest and fastest growing region in advanced ceramics market"

APAC was the largest market for advanced ceramics in 2021. The electrical & electronics sector in the region has experienced healthy growth in the past couple of years. Countries such as China, South Korea, and Japan are leading in electronics and semiconductor industry. Rising population, rapid industrialization, increasing electrification, growth in disposable income, technological advancements, and rising urbanization are driving the APAC advanced ceramics market.

Breakdown of primaries

The study contains insights from various industry experts, ranging from component suppliers to Tier 1 companies and OEMs. The break-up of the primaries is as follows:

- By Company Type: Tier 1 - 25%, Tier 2 - 50%, and Tier 3 - 25%

- By Designation: C Level- 20%, D-level - 30%, And Other Level - 50%

- By Region: North America - 20%, APAC - 25%, Europe - 30%, Middle East & Africa - 10%, South America-15%.

The advanced ceramics market is dominated by a few globally established players such as e Kyocera Corporation (Japan), CeramTec (US), CoorsTek (US), Saint-Gobain Ceramic Materials (US), Morgan Advanced Materials (UK), and 3M (US). Research Coverage:

The report covers the advanced ceramics market and forecasts its size, by volume and value, based on region (Asia Pacific, Europe, North America, South America, and Middle East & Africa), material (alumina, silicon carbide, titanate, zirconia), application (monolithic ceramic, ceramic coating, ceramic matrix composites, ceramic filters), end-use industry (electrical & electronics, transportation, medical, environmental, chemical, defense & security).

The report also provides a comprehensive review of market drivers, restraints, opportunities, and challenges in the advanced ceramics market. The report also covers qualitative aspects in addition to the quantitative aspects of these markets. Key Benefits of Buying the Report:

The report will help the leaders/new entrants in this market with information on the closest approximations of the revenue numbers for the overall market and the sub-segments. This report will help stakeholders understand the competitive landscape and gain more insights to better position their businesses and plan suitable go-to-market strategies. The report also helps stakeholders understand the pulse of the advanced ceramics market and provides them information on key market drivers, restraints, challenges, and opportunities.

#### **Table of Contents:**

Scotts International, EU Vat number: PL 6772247784

## 1.4∏STUDY SCOPE∏33

FIGURE 1□ADVANCED CERAMICS MARKET SEGMENTATION□33

FIGURE 2□REGIONAL SCOPE□34

- 1.4.1 ☐YEARS CONSIDERED ☐ 34
- 1.5 CURRENCY CONSIDERED 35
- 1.6 UNIT CONSIDERED 35
- 1.7□STAKEHOLDERS□35
- 1.8 SUMMARY OF CHANGES 35
- 2 RESEARCH METHODOLOGY 37
- 2.1 RESEARCH DATA 37

FIGURE 3∏ADVANCED CERAMICS MARKET: RESEARCH DESIGN∏37

- 2.1.1 SECONDARY DATA 38
- 2.1.1.1 List of major secondary sources 38
- 2.1.1.2 Key data from secondary sources 39
- 2.1.2 PRIMARY DATA 39
- 2.1.2.1 Key data from primary sources 40
- 2.1.3 PRIMARY INTERVIEWS 40
- 2.1.3.1 Primary interviews-Demand and supply sides ☐ 40
- 2.1.3.2 Key industry insights 41
- 2.1.3.3 Breakdown of primary interviews 141
- 2.2 MARKET SIZE ESTIMATION 42
- $2.2.1 \square \text{ADVANCED CERAMICS MARKET ANALYSIS THROUGH PRIMARY INTERVIEWS} \square 42$
- 2.2.2 ADVANCED CERAMICS MARKET ANALYSIS THROUGH SECONDARY SOURCES 43

FIGURE 4 MARKET SIZE ESTIMATION APPROACH 43

- 2.2.3 TOP-DOWN APPROACH 44
- 2.2.3.1 Approach for arriving at market size using top-down analysis 44

FIGURE 5 TOP-DOWN APPROACH 44

- 2.2.4 BOTTOM-UP APPROACH 45
- 2.2.4.1 Approach for arriving at market size using bottom-up analysis 45

FIGURE 6∏BOTTOM-UP APPROACH∏46

2.3 □ DATA TRIANGULATION □ 47

FIGURE 7∏ADVANCED CERAMICS MARKET: DATA TRIANGULATION∏47

- 2.4□FACTOR ANALYSIS□48
- 2.5 RESEARCH ASSUMPTIONS 48
- 2.6 LIMITATIONS & RISK ASSESSMENT 49
- 2.7 GROWTH FORECAST 49
- 2.7.1

  ☐SUPPLY SIDE

  ☐49
- 2.7.2□DEMAND SIDE□50
- 3∏EXECUTIVE SUMMARY∏51

FIGURE 8 ALUMINA CERAMICS TO LEAD MARKET DURING FORECAST PERIOD 52

FIGURE 9 MONOLITHIC CERAMICS TO BE LARGEST APPLICATION OF ADVANCED CERAMICS 152

FIGURE 10 ELECTRICAL & ELECTRONICS TO BE LARGEST END-USE INDUSTRY OF ADVANCED CERAMICS 53

FIGURE 11 ASIA PACIFIC ACCOUNTED FOR LARGEST SHARE OF ADVANCED CERAMICS MARKET IN 2021 54 4 PREMIUM INSIGHTS 55

4.1 BRIEF OVERVIEW OF ADVANCED CERAMICS MARKET 55

FIGURE 12 ASIA PACIFIC TO OFFER ATTRACTIVE GROWTH OPPORTUNITIES DURING FORECAST PERIOD 55

4.2□ADVANCED CERAMICS MARKET, BY MATERIAL□55

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tel. 0048 603 394 346 e-mail: support@scotts-international.com

FIGURE 13 ALUMINA CERAMICS SEGMENT TO LEAD MARKET DURING FORECAST PERIOD 55

4.3□ADVANCED CERAMICS MARKET, BY APPLICATION□56

FIGURE 14∏MONOLITHIC CERAMICS SEGMENT TO LEAD MARKET DURING FORECAST PERIOD∏56

4.4 ADVANCED CERAMICS MARKET, BY END-USE INDUSTRY 56

FIGURE 15∏ELECTRICAL & ELECTRONICS SEGMENT TO LEAD MARKET DURING FORECAST PERIOD∏56

4.5 GLOBAL ADVANCED CERAMICS MARKET, BY KEY COUNTRIES 57

FIGURE 16∏MARKET IN INDIA TO GROW AT HIGHEST CAGR DURING FORECAST PERIOD□57

5∏MARKET OVERVIEW∏58

5.1 INTRODUCTION 58

5.2 MARKET DYNAMICS 58

FIGURE 17∏DRIVERS, RESTRAINTS, OPPORTUNITIES, AND CHALLENGES IN ADVANCED CERAMICS MARKET∏58

5.2.1 □ DRIVERS □ 59

5.2.1.1∏High growth of end-use industries and high-performance properties of advanced ceramics ☐59

5.2.1.2 Rising demand from medical and electronics sectors 59

5.2.2 RESTRAINTS 60

5.2.2.1 Costlier than metal and alloy counterparts 60

5.2.3 OPPORTUNITIES 60

5.2.3.1 Growth of nanotechnology 60

5.2.3.2 Increasing use in aerospace & defense industry 60

5.2.3.3 Evolution of IoT and AI technologies 61

5.2.4 CHALLENGES 61

5.2.4.1 Low acceptance in new applications 61

5.3 VALUE CHAIN ANALYSIS 62

FIGURE 18 OVERVIEW OF VALUE CHAIN OF ADVANCED CERAMICS MARKET 62

5.3.1 RAW MATERIAL SUPPLIERS 62

5.3.2 MANUFACTURERS/FORMULATORS 63

5.3.3 SUPPLIERS/DISTRIBUTORS 63

5.3.4 COMPONENT MANUFACTURERS/OEMS 63

5.3.5 END-USE INDUSTRIES 63

5.4 PORTER'S FIVE FORCES ANALYSIS 64

FIGURE 19 ADVANCED CERAMICS MARKET: PORTER'S FIVE FORCES ANALYSIS 64

5.4.1 THREAT OF NEW ENTRANTS 64

5.4.2 THREAT OF SUBSTITUTES 165

5.4.3 BARGAINING POWER OF SUPPLIERS 65

5.4.4 BARGAINING POWER OF BUYERS 65

5.4.5 INTENSITY OF COMPETITIVE RIVALRY 65

TABLE 2 ADVANCED CERAMICS MARKET: PORTER'S FIVE FORCES ANALYSIS 66

5.5 RAW MATERIAL ANALYSIS 66

5.5.1 BAUXITE 66

5.5.2∏SILICA∏66

5.5.3∏TITANIA∏66

5.5.4 CARBON 67

5.6 CASE STUDY ANALYSIS 67

5.6.1 ADVANCED CERAMICS FOR GREENER SPACE TECHNOLOGY 67

5.6.2∏ACHIEVING HIGH PRECISION AND ENERGY EFFICIENCY WITH ADVANCED CERAMICS∏67

5.7 MACROECONOMIC INDICATORS 68

5.7.1 GLOBAL GDP TRENDS 68

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tel. 0048 603 394 346 e-mail: support@scotts-international.com

TABLE 3 PROJECTED REAL GDP GROWTH (ANNUAL PERCENTAGE CHANGE)

OF KEY COUNTRIES, 2018-2025 68

5.8 TARIFFS, STANDARDS, AND REGULATORY LANDSCAPE 69

5.8.1 REGULATIONS 69

5.8.1.1 Europe 69

5.8.1.2∏US∏69

5.8.1.3 Others 69

5.8.2 STANDARDS 70

5.8.2.1 Occupational Safety and Health Act of 1970 (OSHA Standards) 70

5.8.2.2 European Committee for Standardization (CEN) 70

5.8.3 ⊓REGULATORY BODIES, GOVERNMENT AGENCIES, AND OTHER ORGANIZATIONS □70

TABLE 4⊓REGULATORY BODIES, GOVERNMENT AGENCIES, AND OTHER ORGANIZATIONS∏70

5.9∏TRADE ANALYSIS∏72

TABLE 5 MAJOR EXPORTING COUNTRIES: CERAMIC PRODUCTS (USD THOUSAND) 72

TABLE 6 MAJOR IMPORTING COUNTRIES: CERAMIC PRODUCTS (USD THOUSAND) 73

5.10 TECHNOLOGY ANALYSIS 73

5.10.1 GCONNECTIVITY 73

5.10.2 ENERGY TRANSITION 174

5.10.3 NANOTECHNOLOGY 74

5.10.4∏3D PRINTING∏74

5.11 AVERAGE SELLING PRICE 75

5.11.1 AVERAGE SELLING PRICE, BY REGION 75

TABLE 7 AVERAGE SELLING PRICES OF ADVANCED CERAMICS, BY REGION (USD/KG) 75

5.11.2 AVERAGE SELLING PRICE, BY COMPANY 75

TABLE 8 AVERAGE SELLING PRICES OF ADVANCED CERAMICS,

BY KEY PLAYERS (USD/KG) □75

5.11.3 AVERAGE SELLING PRICE, BY END-USE INDUSTRY 75

TABLE 9 AVERAGE SELLING PRICES OF ADVANCED CERAMICS,

BY END-USE INDUSTRY (USD/KG)[75

5.12∏ECOSYSTEM∏76

FIGURE 20 ADVANCED CERAMICS MARKET: ECOSYSTEM 76

TABLE 10 □ ADVANCED CERAMICS MARKET: ECOSYSTEM □ 76

 $5.13 \verb||| TRENDS/DISRUPTIONS IMPACTING CUSTOMERS' BUSINESSES \verb||| 78$ 

FIGURE 21[5G, AI, IOT, AND 3D PRINTING TO DRIVE MARKET[78]

5.14 PATENT ANALYSIS 78

5.14.1□INTRODUCTION□78

5.14.2 METHODOLOGY 79

5.14.3 DOCUMENT TYPE 79

TABLE 11 TOTAL NUMBER OF PATENTS 79

FIGURE 22 TOTAL NUMBER OF PATENTS REGISTERED IN 10 YEARS (2011-2021) 79

5.14.4 PUBLICATION TRENDS IN LAST 10 YEARS 80

5.14.5 INSIGHTS 0

5.14.6 LEGAL STATUS OF PATENTS 80

FIGURE 24 PATENT ANALYSIS, BY LEGAL STATUS 80

5.14.7 JURISDICTION ANALYSIS 81

FIGURE 25 TOP JURISDICTION, BY DOCUMENT 81

Scotts International, EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

5.14.8 TOP APPLICANTS 81

FIGURE 26 TOP 10 PATENT APPLICANTS 81

5.14.8.1 Patents by Saint Gobain CT Recherches 82

TABLE 12 PATENTS BY SAINT GOBAIN CT RECHERCHES 82

5.14.8.2 List of Patents by Tosoh Corporation 83

TABLE 13 PATENTS BY TOSOH CORPORATION 83

5.14.8.3 List of Patents by Tokyo Electron Limited (TEL) 84

TABLE 14 PATENTS BY TOKYO ELECTRON LIMITED (TEL) 84

5.14.9 TOP 10 PATENT OWNERS (US) IN LAST 10 YEARS 85

TABLE 15∏TOP 10 PATENT OWNERS∏85

5.15 KEY CONFERENCES & EVENTS IN 2022-2023 85

TABLE 16∏ADVANCED CERAMICS MARKET: DETAILED LIST OF KEY CONFERENCES & EVENTS∏85

5.16 REY FACTORS AFFECTING BUYING DECISIONS 186

5.16.1 QUALITY 86

5.16.2 SERVICE 86

FIGURE 27 SUPPLIER SELECTION CRITERIA 186

6 ADVANCED CERAMICS MARKET, BY MATERIAL 88

6.1□INTRODUCTION□89

FIGURE 28 ALUMINA CERAMICS TO BE LARGEST MATERIAL DURING FORECAST PERIOD 89

TABLE 17 ADVANCED CERAMICS MARKET SIZE, BY MATERIAL, 2018-2021 (KILOTON) 89

TABLE 18 ADVANCED CERAMICS MARKET SIZE, BY MATERIAL, 2022-2027 (KILOTON) 90

TABLE 19 ADVANCED CERAMICS MARKET SIZE, BY MATERIAL,

2018-2021 (USD MILLION) □90

TABLE 20 ADVANCED CERAMICS MARKET SIZE, BY MATERIAL,

2022-2027 (USD MILLION) □90

6.2 □ ALUMINA CERAMICS □ 91

6.3 ZIRCONIA CERAMICS 91

6.4□TITANATE CERAMICS□92

6.5 SILICON CARBIDE CERAMICS 92

 $6.6 \square OTHERS \square 93$ 

6.6.1 BERYLLIUM OXIDE CERAMICS 93

6.6.2∏ALUMINUM NITRIDE CERAMICS∏93

6.6.3□SILICON NITRIDE CERAMICS□93

6.6.4 BORON NITRIDE CERAMICS 94

6.6.5 MAGNESIUM SILICATE 94

7 ADVANCED CERAMICS MARKET, BY APPLICATION 95

7.1⊓INTRODUCTION∏96

FIGURE 29 MONOLITHIC CERAMICS TO BE LARGEST APPLICATION OF ADVANCED CERAMICS 196

TABLE 21 □ ADVANCED CERAMICS MARKET SIZE, BY APPLICATION,

2018-2021 (KILOTON)∏96

TABLE 22 ADVANCED CERAMICS MARKET SIZE, BY APPLICATION,

2022-2027 (KILOTON) □97

TABLE 23 ADVANCED CERAMICS MARKET SIZE, BY APPLICATION,

2018-2021 (USD MILLION) [97

TABLE 24 ADVANCED CERAMICS MARKET SIZE, BY APPLICATION,

2022-2027 (USD MILLION)∏97

7.2 MONOLITHIC CERAMICS 98

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tel. 0048 603 394 346 e-mail: support@scotts-international.com

7.3 CERAMIC MATRIX COMPOSITES 98

7.4 CERAMIC COATINGS 98

7.5 CERAMIC FILTERS 99

7.6 | OTHERS | 99

8 ADVANCED CERAMICS MARKET, BY END-USE INDUSTRY 100

8.1⊓INTRODUCTION⊓101

FIGURE 30 ELECTRICAL & ELECTRONICS TO BE LARGEST END-USE INDUSTRY 101

TABLE 25 ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY,

2018-2021 (KILOTON)∏101

TABLE 26 ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY,

2022-2027(KILOTON)∏102

TABLE 27 ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY,

2018-2021 (USD MILLION) □102

TABLE 28 ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY,

2022-2027 (USD MILLION) □102

8.2∏ELECTRICAL & ELECTRONICS∏103

8.2.1 HOME APPLIANCES 103

8.2.2 MOBILE PHONES 104

8.2.3 OTHERS 104

8.3 □ TRANSPORTATION □ 104

8.3.1 AUTOMOTIVE 104

8.3.2 AEROSPACE 105

8.3.3∏OTHERS∏105

8.4 MEDICAL 105

8.4.1 MEDICAL DEVICES 105

8.4.2 DENTISTRY 106

8.4.3 ARTHROPLASTY 106

8.5 DEFENSE & SECURITY 106

8.5.1 MILITARY EQUIPMENT AND ARMOR 106

8.5.2 | ARTILLERY WEAPONS AND VEHICLES | 107

8.5.3 SECURITY AND SURVEILLANCE SYSTEMS 107

8.6 □ ENVIRONMENTAL □ 107

8.6.1 CONVENTIONAL 107

8.6.2 NONCONVENTIONAL 108

8.7□CHEMICAL□108

8.7.1 ☐ CHEMICAL PROCESSING AND REACTION CONTROL ☐ 108

8.7.2 MATERIAL SEPARATION 108

8.7.3 CONVEYING EQUIPMENT 108

8.8 ☐ OTHERS ☐ 108

?

9∏ADVANCED CERAMICS MARKET, BY REGION∏109

9.1 INTRODUCTION 110

FIGURE 31□ADVANCED CERAMICS MARKET IN INDIA TO WITNESS HIGHEST CAGR□110 TABLE 29□ADVANCED CERAMICS MARKET SIZE, BY REGION, 2018-2021 (KILOTON)□111

TABLE 30∏ADVANCED CERAMICS MARKET SIZE, BY REGION, 2022-2027 (KILOTON)∏111

TABLE 31 ADVANCED CERAMICS MARKET SIZE, BY REGION,

2018-2021 (USD MILLION)[111

## Scotts International, EU Vat number: PL 6772247784

TABLE 32∏ADVANCED CERAMICS MARKET SIZE, BY REGION,

2022-2027 (USD MILLION)[112

9.2 NORTH AMERICA 113

FIGURE 32 NORTH AMERICA: ADVANCED CERAMICS MARKET SNAPSHOT 113

TABLE 33 NORTH AMERICA: ADVANCED CERAMICS MARKET SIZE, BY COUNTRY,

2018-2021 (KILOTON)∏114

TABLE 34 NORTH AMERICA: ADVANCED CERAMICS MARKET SIZE, BY COUNTRY,

2022-2027 (KILOTON)∏114

TABLE 35 NORTH AMERICA: ADVANCED CERAMICS MARKET SIZE, BY COUNTRY,

2018-2021 (USD MILLION)∏114

TABLE 36 NORTH AMERICA: ADVANCED CERAMICS MARKET SIZE, BY COUNTRY,

2022-2027 (USD MILLION)∏114

TABLE 37 NORTH AMERICA: ADVANCED CERAMICS MARKET SIZE,

BY END-USE INDUSTRY, 2018-2021 (KILOTON) □115

TABLE 38 NORTH AMERICA: ADVANCED CERAMICS MARKET SIZE,

BY END-USE INDUSTRY, 2022-2027 (KILOTON) □115

TABLE 39 NORTH AMERICA: ADVANCED CERAMICS MARKET SIZE,

BY END-USE INDUSTRY, 2018-2021 (USD MILLION)∏116

TABLE 40 NORTH AMERICA: ADVANCED CERAMICS MARKET SIZE,

BY END-USE INDUSTRY, 2022-2027 (USD MILLION)∏116

9.2.1 US 116

9.2.1.1 Advancements in electronics and automotive industries to boost market 116

TABLE 41 US: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY,

2018-2021 (KILOTON) □117

TABLE 42 US: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY,

2022-2027 (KILOTON)[117

TABLE 43 US: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY,

2018-2021 (USD MILLION) ☐ 118

TABLE 44 US: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY,

2022-2027 (USD MILLION)∏118

9.2.2 CANADA 119

9.2.2.1 Rising industrial investments to enhance demand for advanced ceramics 119

TABLE 45 CANADA: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2018-2021 (KILOTON) 119

TABLE 46 CANADA: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2022-2027 (KILOTON) 120

TABLE 47 CANADA: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2018-2021 (USD MILLION) 120

TABLE 48  $\square$ CANADA: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2022-2027 (USD MILLION)  $\square$ 121

9.2.3⊓MEXICO⊓121

9.2.3.1 Increasing vehicle production to drive market 121

TABLE 49∏MEXICO: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2018-2021 (KILOTON)∏122

TABLE 50∏MEXICO: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2022-2027 (KILOTON)∏122

TABLE 51∏MEXICO: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2018-2021 (USD MILLION)∏123

TABLE 52  $\square$  MEXICO: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2022-2027 (USD MILLION)  $\square$  123

 $9.3 \verb||EUROPE|| 124$ 

TABLE 53 EUROPE: ADVANCED CERAMICS MARKET SIZE, BY COUNTRY,

2018-2021 (KILOTON) □124

TABLE 54 EUROPE: ADVANCED CERAMICS MARKET SIZE, BY COUNTRY,

2022-2027 (KILOTON)[124

Scotts International, EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

TABLE 55 TEUROPE: ADVANCED CERAMICS MARKET SIZE, BY COUNTRY,

2018-2021 (USD MILLION)[125

TABLE 56 EUROPE: ADVANCED CERAMICS MARKET SIZE, BY COUNTRY,

2022-2027 (USD MILLION) ☐ 125

TABLE 57 EUROPE: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2018-2021 (KILOTON) 126
TABLE 58 EUROPE: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2022-2027 (KILOTON) 126
TABLE 59 EUROPE ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2018-2021 (USD MILLION) 127
TABLE 60 EUROPE: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2022-2027 (USD MILLION) 127
9.3.1 GERMANY 127

9.3.1.1 Big electronics brands establishing manufacturing plants to support market growth 127

TABLE 61 GERMANY: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2018-2021 (KILOTON) 128
TABLE 62 GERMANY: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2022-2027 (KILOTON) 128
TABLE 63 GERMANY: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2018-2021 (USD MILLION) 129
TABLE 64 GERMANY: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2022-2027 (USD MILLION) 129
9.3.2 UK 129

9.3.2.1 Rising demand for alternative fuel technologies to drive market 129

TABLE 65□UK: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY,

2018-2021 (KILOTON)[130

TABLE 66□UK: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY,

2022-2027 (KILOTON)∏130

TABLE 67 UK: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY,

2018-2021 (USD MILLION)∏131

TABLE 68 UK: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY,

2022-2027 (USD MILLION) □131

9.3.3 | NETHERLANDS | 131

9.3.3.1 Growing number of start-ups creating demand for advanced materials to spur market growth 131

TABLE 69 | NETHERLANDS: ADVANCED CERAMICS MARKET SIZE,

BY END-USE INDUSTRY, 2018-2021 (KILOTON)∏132

TABLE 70 NETHERLANDS: ADVANCED CERAMICS MARKET SIZE,

BY END-USE INDUSTRY, 2022-2027 (KILOTON)∏132

TABLE 71 NETHERLANDS: ADVANCED CERAMICS MARKET SIZE,

BY END-USE INDUSTRY, 2018-2021 (USD MILLION) □133

TABLE 72 NETHERLANDS: ADVANCED CERAMICS MARKET SIZE,

BY END-USE INDUSTRY, 2022-2027 (USD MILLION)[133

9.3.4∏FRANCE∏133

9.3.4.1 Strong industrial base to drive market 133

TABLE 73 FRANCE: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2018-2021 (KILOTON) 134
TABLE 74 FRANCE: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2022-2027 (KILOTON) 134
TABLE 75 FRANCE: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2018-2021 (USD MILLION) 135
TABLE 76 FRANCE: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2022-2027 (USD MILLION) 135
9.3.5 RUSSIA 135

9.3.5.1 Geopolitical instability to result in stagnant demand 135

TABLE 77 RUSSIA: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2018-2021 (KILOTON) 136
TABLE 78 RUSSIA: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2022-2027 (KILOTON) 136
TABLE 79 RUSSIA: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2018-2021 (USD MILLION) 137
TABLE 80 RUSSIA: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2022-2027 (USD MILLION) 137
9.3.6 ITALY 137

Scotts International, EU Vat number: PL 6772247784

9.3.6.1 Transportation and electronics industries to be major demand boosters 137

TABLE 81 ITALY: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY,

2018-2021 (KILOTON) □138

TABLE 82 | ITALY: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY,

2022-2027 (KILOTON) □138

TABLE 83 ITALY: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY,

2018-2021 (USD MILLION) □139

TABLE 84 TALY: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY,

2022-2027 (USD MILLION) □139

9.3.7 SPAIN 139

9.3.7.1 \textsup A major manufacturer of automotive components \textsup 139

TABLE 85 SPAIN: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY,

2018-2021 (KILOTON) □140

TABLE 86 SPAIN: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY,

2022-2027 (KILOTON) □140

TABLE 87 SPAIN: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY,

2018-2021 (USD MILLION) ☐ 141

TABLE 88 SPAIN: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY,

2022-2027 (USD MILLION)[141

9.3.8 | TURKEY | 142

TABLE 89 TURKEY: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2018-2021 (KILOTON) 142

TABLE 90∏TURKEY: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2022-2027 (KILOTON)∏142

TABLE 91∏TURKEY: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2018-2021 (USD MILLION)∏143

TABLE 92 TURKEY: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2022-2027 (USD MILLION) 143

9.3.9 REST OF EUROPE 144

TABLE 93 REST OF EUROPE: ADVANCED CERAMICS MARKET SIZE,

BY END-USE INDUSTRY, 2018-2021 (KILOTON) ☐ 144

TABLE 94 REST OF EUROPE: ADVANCED CERAMICS MARKET SIZE,

BY END-USE INDUSTRY, 2022-2027 (KILOTON)∏144

TABLE 95 REST OF EUROPE: ADVANCED CERAMICS MARKET SIZE,

BY END-USE INDUSTRY, 2018-2021 (USD MILLION) □145

TABLE 96 REST OF EUROPE: ADVANCED CERAMICS MARKET SIZE.

BY END-USE INDUSTRY, 2022-2027 (USD MILLION)[145]

9.4□SOUTH AMERICA□146

TABLE 97 SOUTH AMERICA: ADVANCED CERAMICS MARKET SIZE, BY COUNTRY,

2018-2021 (KILOTON)[146

TABLE 98 SOUTH AMERICA: ADVANCED CERAMICS MARKET SIZE, BY COUNTRY,

2022-2027 (KILOTON) □146

TABLE 99 SOUTH AMERICA: ADVANCED CERAMICS MARKET SIZE, BY COUNTRY,

2018-2021 (USD MILLION) □146

TABLE 100 SOUTH AMERICA: ADVANCED CERAMICS MARKET SIZE, BY COUNTRY,

2022-2027 (USD MILLION)∏147

TABLE 101 SOUTH AMERICA: ADVANCED CERAMICS MARKET SIZE,

BY END-USE INDUSTRY, 2018-2021 (KILOTON) ☐ 147

TABLE 102 SOUTH AMERICA: ADVANCED CERAMICS MARKET SIZE,

BY END-USE INDUSTRY, 2022-2027 (KILOTON)[147

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TABLE 103 SOUTH AMERICA: ADVANCED CERAMICS MARKET SIZE,

BY END-USE INDUSTRY, 2018-2021 (USD MILLION) 148

TABLE 104 SOUTH AMERICA: ADVANCED CERAMICS MARKET SIZE,

BY END-USE INDUSTRY, 2022-2027 (USD MILLION) 148

9.4.1 BRAZIL 148

9.4.1.1 Investments in renewable energy to boost consumption of advanced ceramics 148

TABLE 105 BRAZIL: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2018-2021 (KILOTON) 149

TABLE 106 BRAZIL: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2022-2027 (KILOTON) 149

TABLE 107 BRAZIL: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2018-2021 (USD MILLION) 150

TABLE 108  $\square$ BRAZIL: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2022-2027 (USD MILLION)  $\square$ 150

9.4.2∏ARGENTINA∏150

9.4.2.1 Abundance of natural resources to enhance industrial growth 150

TABLE 109∏ARGENTINA: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2018-2021 (KILOTON)∏151

TABLE 110∏ARGENTINA: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2022-2027 (KILOTON)∏151

TABLE 111 ☐ ARGENTINA: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2018-2021 (USD MILLION) ☐ 152

TABLE 112  $\square$  ARGENTINA: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2022-2027 (USD MILLION)  $\square$  152

9.4.3 REST OF SOUTH AMERICA 152

TABLE 113 REST OF SOUTH AMERICA: ADVANCED CERAMICS MARKET SIZE,

BY END-USE INDUSTRY, 2018-2021 (KILOTON)[153

TABLE 114 REST OF SOUTH AMERICA: ADVANCED CERAMICS MARKET SIZE,

BY END-USE INDUSTRY, 2022-2027 (KILOTON)[153

TABLE 115 REST OF SOUTH AMERICA: ADVANCED CERAMICS MARKET SIZE,

BY END-USE INDUSTRY, 2018-2021 (USD MILLION)∏154

TABLE 116 REST OF SOUTH AMERICA: ADVANCED CERAMICS MARKET SIZE,

BY END-USE INDUSTRY, 2022-2027 (USD MILLION) 154

9.5∏ASIA PACIFIC∏155

FIGURE 33 ASIA PACIFIC: ADVANCED CERAMICS MARKET SNAPSHOT 155

TABLE 117 ASIA PACIFIC: ADVANCED CERAMICS MARKET SIZE, BY COUNTRY,

2018-2021 (KILOTON)□156

TABLE 118 ASIA PACIFIC: ADVANCED CERAMICS MARKET SIZE, BY COUNTRY,

2022-2027 (KILOTON)[156

TABLE 119 ASIA PACIFIC: ADVANCED CERAMICS MARKET SIZE, BY COUNTRY,

2018-2021 (USD MILLION) П157

TABLE 120 ASIA PACIFIC: ADVANCED CERAMICS MARKET SIZE, BY COUNTRY,

2022-2027 (USD MILLION) ☐ 157

TABLE 121∏ASIA PACIFIC: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2018-2021 (KILOTON)∏158

TABLE 122 ASIA PACIFIC: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2022-2027 (KILOTON) 158

TABLE 123∏ASIA PACIFIC: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2018-2021 (USD MILLION)∏159

TABLE 124 $\square$ ASIA PACIFIC: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2022-2027 (USD MILLION) $\square$ 159

9.5.1 CHINA 159

9.5.1.1 Dominant position attributed to huge industrial base 159

TABLE 125 CHINA: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY,

2018-2021 (KILOTON)∏161

TABLE 126 CHINA: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY,

2022-2027 (KILOTON) ☐ 161

TABLE 127 CHINA: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY,

2018-2021 (USD MILLION)[161

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TABLE 128 CHINA: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY,

2022-2027 (USD MILLION)[162

9.5.2∏APAN∏162

9.5.2.1 Growing electronics and automotive industries to boost market 162

TABLE 129 | JAPAN: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY,

2018-2021 (KILOTON)[]163

TABLE 130 | JAPAN: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY,

2022-2027 (KILOTON)[163

TABLE 131 JAPAN: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY,

2018-2021 (USD MILLION)∏163

TABLE 132∏APAN: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY,

2022-2027 (USD MILLION) $\square$ 164

9.5.3 SOUTH KOREA 164

9.5.3.1 Increasing investments in end-use industries to drive market 164

TABLE 133∏SOUTH KOREA: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2018-2021 (KILOTON)∏165

TABLE 134 SOUTH KOREA: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2022-2027 (KILOTON) 165

TABLE 135  $\square$  SOUTH KOREA: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2018-2021 (USD MILLION)  $\square$  165

TABLE 136 SOUTH KOREA: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2022-2027 (USD MILLION) 166 9.5.4 INDIA 166

9.5.4.1∏Government initiatives to boost automobile and medical electronics production to fuel market∏166

TABLE 137 INDIA: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY,

2018-2021 (KILOTON) □167

TABLE 138 INDIA: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY,

2022-2027 (KILOTON) □167

TABLE 139 INDIA: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY,

2018-2021 (USD MILLION) ☐ 167

TABLE 140 INDIA: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY,

2022-2027 (USD MILLION) □168

9.5.5 AUSTRALIA 168

9.5.5.1∏Growth of e-commerce to indirectly propel demand for advanced ceramics ☐168

TABLE 141 AUSTRALIA: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2018-2021 (KILOTON) 169

TABLE 142∏AUSTRALIA: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2022-2027 (KILOTON)∏169

TABLE 143⊓AUSTRALIA: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2018-2021 (USD MILLION)⊓169

TABLE 144

AUSTRALIA: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2022-2027 (USD MILLION)

170

9.5.6∏INDONESIA∏170

9.5.6.1 Investments in electronics and automotive industries to drive market 170

TABLE 145∏INDONESIA: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2018-2021 (KILOTON)∏171

TABLE 146∏INDONESIA: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2022-2027 (KILOTON)∏171

TABLE 147 INDONESIA: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2018-2021 (USD MILLION) 171

TABLE 148 INDONESIA: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2022-2027 (USD MILLION) 172

 $9.5.7 \verb|| MALAYSIA \verb||| 172$ 

9.5.7.1 Investments in automotive industry to boost market 172

TABLE 149∏MALAYSIA: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2018-2021 (KILOTON)∏173

TABLE 150∏MALAYSIA: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2022-2027 (KILOTON)∏173

TABLE 151 MALAYSIA: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2018-2021 (USD MILLION) 173

TABLE 152 MALAYSIA: ADVANCED CERAMICS MARKET SIZE, BY END-USE INDUSTRY, 2022-2027 (USD MILLION) 174

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```
9.5.8 REST OF ASIA PACIFIC 174
```

TABLE 153 REST OF ASIA PACIFIC: ADVANCED CERAMICS MARKET SIZE,

BY END-USE INDUSTRY, 2018-2021 (KILOTON) □174

TABLE 154 REST OF ASIA PACIFIC: ADVANCED CERAMICS MARKET SIZE,

BY END-USE INDUSTRY, 2022-2027 (KILOTON) ☐ 175

TABLE 155 REST OF ASIA PACIFIC: ADVANCED CERAMICS MARKET SIZE,

BY END-USE INDUSTRY, 2018-2021 (USD MILLION)□175

TABLE 156 REST OF ASIA PACIFIC: ADVANCED CERAMICS MARKET SIZE,

BY END-USE INDUSTRY, 2022-2027 (USD MILLION)[175]

9.6 MIDDLE EAST & AFRICA 176

TABLE 157 MIDDLE EAST & AFRICA: ADVANCED CERAMICS MARKET SIZE, BY COUNTRY, 2018-2021 (KILOTON) 176

TABLE 158∏MIDDLE EAST & AFRICA: ADVANCED CERAMICS MARKET SIZE, BY COUNTRY, 2022-2027 (KILOTON)∏176

TABLE 159∏MIDDLE EAST & AFRICA: ADVANCED CERAMICS MARKET SIZE, BY COUNTRY, 2018-2021 (USD MILLION)∏177

TABLE 160∏MIDDLE EAST & AFRICA: ADVANCED CERAMICS MARKET SIZE, BY COUNTRY, 2022-2027 (USD MILLION)∏177

TABLE 161 MIDDLE EAST & AFRICA: ADVANCED CERAMICS MARKET SIZE,

BY END-USE INDUSTRY, 2018-2021 (KILOTON) □177

TABLE 162 MIDDLE EAST & AFRICA: ADVANCED CERAMICS MARKET SIZE,

BY END-USE INDUSTRY, 2022-2027 (KILOTON) □178

TABLE 163 MIDDLE EAST & AFRICA: ADVANCED CERAMICS MARKET SIZE,

BY END-USE INDUSTRY, 2018-2021 (USD MILLION) □178

TABLE 164 MIDDLE EAST & AFRICA: ADVANCED CERAMICS MARKET SIZE,

BY END-USE INDUSTRY, 2022-2027 (USD MILLION) 178

?

9.6.1 SAUDI ARABIA 179

9.6.1.1 Saudi Vision 2030 to contribute to market growth 179

TABLE 165 SAUDI ARABIA: ADVANCED CERAMICS MARKET SIZE,

BY END-USE INDUSTRY, 2018-2021 (KILOTON)∏179

TABLE 166 SAUDI ARABIA: ADVANCED CERAMICS MARKET SIZE,

BY END-USE INDUSTRY, 2022-2027 (KILOTON)[180

TABLE 167 SAUDI ARABIA: ADVANCED CERAMICS MARKET SIZE,

BY END-USE INDUSTRY, 2018-2021 (USD MILLION)[180

TABLE 168 SAUDI ARABIA: ADVANCED CERAMICS MARKET SIZE,

BY END-USE INDUSTRY, 2022-2027 (USD MILLION)[180

9.6.2 SOUTH AFRICA 181

9.6.2.1 Developments in automotive industry to drive market 181

TABLE 169 SOUTH AFRICA: ADVANCED CERAMICS MARKET SIZE,

BY END-USE INDUSTRY, 2018-2021 (KILOTON)[181

TABLE 170 SOUTH AFRICA: ADVANCED CERAMICS MARKET SIZE,

BY END-USE INDUSTRY, 2022-2027 (KILOTON) ☐ 182

TABLE 171 SOUTH AFRICA: ADVANCED CERAMICS MARKET SIZE,

BY END-USE INDUSTRY, 2018-2021 (USD MILLION) □182

TABLE 172 SOUTH AFRICA: ADVANCED CERAMICS MARKET SIZE,

BY END-USE INDUSTRY, 2022-2027 (USD MILLION)∏182

9.6.3 REST OF MIDDLE EAST & AFRICA 183

TABLE 173 REST OF MIDDLE EAST & AFRICA: ADVANCED CERAMICS MARKET SIZE,

BY END-USE INDUSTRY, 2018-2021 (KILOTON) ☐ 184

TABLE 174 REST OF MIDDLE EAST & AFRICA: ADVANCED CERAMICS MARKET SIZE,

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BY END-USE INDUSTRY, 2022-2027 (KILOTON)[184

TABLE 175 REST OF MIDDLE EAST & AFRICA: ADVANCED CERAMICS MARKET SIZE,

BY END-USE INDUSTRY, 2018-2021 (USD MILLION) 184

TABLE 176 REST OF MIDDLE EAST & AFRICA: ADVANCED CERAMICS MARKET SIZE,

BY END-USE INDUSTRY, 2022-2027 (USD MILLION) ☐ 185

10 COMPETITIVE LANDSCAPE 186

10.1□OVERVIEW□186

10.2 KEY DEVELOPMENTS 186

TABLE 177 COMPANIES ADOPTED INVESTMENT & EXPANSION AS IMPORTANT DEVELOPMENT STRATEGY 186

10.3 MARKET RANKING ANALYSIS 188

FIGURE 34∏RANKING OF TOP FIVE PLAYERS IN ADVANCED CERAMICS MARKET (2021)∏188

10.4 MARKET SHARE ANALYSIS, 2021 188

FIGURE 35∏ADVANCED CERAMICS MARKET SHARE, BY COMPANY (2021)∏188

TABLE 178 ADVANCED CERAMICS MARKET: DEGREE OF COMPETITION 189

10.5 REVENUE ANALYSIS OF TOP PLAYERS 190

TABLE 179□ADVANCED CERAMICS MARKET: REVENUE ANALYSIS (USD)□190

10.6 MARKET EVALUATION MATRIX 191

TABLE 180 MARKET EVALUATION MATRIX, 2018-2022 191

10.7 COMPANY EVALUATION MATRIX 192

10.7.1∏STARS∏192

10.7.2 EMERGING LEADERS 192

10.7.3 PERVASIVE PLAYERS 192

10.7.4 PARTICIPANTS 192

FIGURE 36∏ADVANCED CERAMICS MARKET: COMPANY EVALUATION MATRIX (2021)∏193

10.7.5 STRENGTH OF PRODUCT PORTFOLIO 194

FIGURE 37 STRENGTH OF PRODUCT PORTFOLIO OF KEY PLAYERS IN ADVANCED CERAMICS MARKET 194

10.7.6 BUSINESS STRATEGY EXCELLENCE 195

FIGURE 38∏BUSINESS STRATEGY EXCELLENCE OF KEY PLAYERS IN ADVANCED CERAMICS MARKET∏195

10.8 COMPETITIVE EVALUATION QUADRANT (SMALL AND MEDIUM-SIZED ENTERPRISES (SMES)) 196

10.8.1 PROGRESSIVE COMPANIES 196

10.8.2 RESPONSIVE COMPANIES 196

10.8.3 STARTING BLOCKS 196

10.8.4 □DYNAMIC COMPANIES □196

FIGURE 39 DAVANCED CERAMICS MARKET: COMPANY EVALUATION MATRIX FOR SMES (2021) 197

10.8.5 STRENGTH OF PRODUCT PORTFOLIO 198

FIGURE 40∏STRENGTH OF PRODUCT PORTFOLIO OF SMES IN ADVANCED CERAMICS MARKET∏198

10.8.6 □BUSINESS STRATEGY EXCELLENCE □199

FIGURE 41∏BUSINESS STRATEGY EXCELLENCE OF SMES IN ADVANCED CERAMICS MARKET∏199

10.9□COMPETITIVE BENCHMARKING□200

TABLE 181 □ ADVANCED CERAMICS MARKET: DETAILED LIST OF KEY SMES □ 200

TABLE 182

☐
ADVANCED CERAMICS MARKET: COMPETITIVE BENCHMARKING OF KEY PLAYERS

☐
201

10.9.1 COMPANY FOOTPRINT 203

10.9.2 COMPANY MATERIAL FOOTPRINT 204

10.9.3 COMPANY END-USE INDUSTRY FOOTPRINT 206

10.9.4 COMPANY REGION FOOTPRINT 207

10.10 COMPETITIVE SCENARIO 208

10.10.1 DEALS 208

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TABLE 183 ADVANCED CERAMICS MARKET: DEALS, 2018-2022 208

10.10.2 PRODUCT LAUNCHES 209

TABLE 184 ADVANCED CERAMICS MARKET: PRODUCT LAUNCHES, 2018-2022 209

10.10.3 OTHER DEVELOPMENTS 210

TABLE 185 ADVANCED CERAMICS MARKET: OTHER DEVELOPMENTS, 2018-2022 210

?

11□COMPANY PROFILES□211

11.1 KEY PLAYERS 211

(Business Overview, Products/Services/Solutions Offered, MnM View, Key Strengths and Right to Win, Strategic Choices Made,

Weaknesses and Competitive Threats, Recent Developments)\*

11.1.1 KYOCERA CORPORATION 211

TABLE 186 $\square$ KYOCERA CORPORATION: COMPANY OVERVIEW $\square$ 211 FIGURE 42 $\square$ KYOCERA CORPORATION: COMPANY SNAPSHOT $\square$ 212 TABLE 187 $\square$ KYOCERA CORPORATION: PRODUCTS OFFERED $\square$ 212

TABLE 188 KYOCERA CORPORATION: DEALS 214

TABLE 189 KYOCERA CORPORATION: OTHER DEVELOPMENTS 215

11.1.2 CERAMTEC GMBH 217

TABLE 190 CERAMTEC: COMPANY OVERVIEW 217
FIGURE 43 CERAMTEC: COMPANY SNAPSHOT 218
TABLE 191 CERAMTEC: PRODUCTS OFFERED 218

TABLE 192 CERAMTEC: NEW PRODUCT/TECHNOLOGY DEVELOPMENTS 220

11.1.3 COORSTEK INC. 222

TABLE 193 COORSTEK: COMPANY OVERVIEW 222
TABLE 194 COORSTEK: PRODUCTS OFFERED 222
TABLE 195 COORSTEK: OTHER DEVELOPMENTS 224

11.1.4 SAINT-GOBAIN PERFORMANCE CERAMICS & REFRACTORIES 225

TABLE 196 SAINT-GOBAIN PERFORMANCE CERAMICS & REFRACTORIES: COMPANY OVERVIEW 225 TABLE 197 SAINT-GOBAIN PERFORMANCE CERAMICS & REFRACTORIES: PRODUCTS OFFERED 225

11.1.5 MORGAN ADVANCED MATERIALS 227

TABLE 198 MORGAN ADVANCED MATERIALS: COMPANY OVERVIEW 227 FIGURE 44 MORGAN ADVANCED MATERIALS: COMPANY SNAPSHOT 228 TABLE 199 MORGAN ADVANCED MATERIALS: PRODUCTS OFFERED 228

TABLE 200 MORGAN ADVANCED MATERIALS: DEALS 230

TABLE 201 MORGAN ADVANCED MATERIALS: OTHER DEVELOPMENTS 231

11.1.6∏3M∏232

TABLE 202[]3M: COMPANY OVERVIEW[]232 FIGURE 45[]3M: COMPANY SNAPSHOT[]232 TABLE 203[]3M: PRODUCTS OFFERED[]233

11.1.7 MARUWA 234

TABLE 204 MARUWA: COMPANY OVERVIEW 234
TABLE 205 MARUWA: PRODUCTS OFFERED 234
11.1.8 PAUL RAUSCHERT GMBH & CO. KG. 235

TABLE 206 PAUL RAUSCHERT GMBH & CO. KG.: COMPANY OVERVIEW 235 TABLE 207 PAUL RAUSCHERT GMBH & CO. KG.: PRODUCTS OFFERED 235

11.1.9 AGC CERAMICS 237

TABLE 208 AGC CERAMICS: COMPANY OVERVIEW 237 TABLE 209 AGC CERAMICS: PRODUCTS OFFERED 237

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# 11.1.10 ELAN TECHNOLOGY 239

TABLE 210 ELAN TECHNOLOGY: COMPANY OVERVIEW 239 TABLE 211 ELAN TECHNOLOGY: PRODUCTS OFFERED 239

\*Business Overview, Products/Services/Solutions Offered, MnM View, Key Strengths and Right to Win, Strategic Choices Made,

Weaknesses and Competitive Threats, Recent Developments might not be captured in case of unlisted companies.

- $11.2 \square OTHER PLAYERS \square 241$
- 11.2.1∏OERLIKON∏241
- 11.2.2 NISHIMURA ADVANCED CERAMICS CO., LTD 242
- 11.2.3 COI CERAMICS, INC. 243
- 11.2.4 TECHNO CERA INDUSTRIES 243
- 11.2.5 BCE SPECIAL CERAMICS GMBH 244
- 11.2.6 STC SUPERIOR TECHNICAL CERAMICS 245
- 11.2.7 MOMENTIVE TECHNOLOGIES 246
- 11.2.8 DYSON 246
- 11.2.9 ORTECH ADVANCED CERAMICS 247
- 11.2.10 INTERNATIONAL SYALONS 247
- 11.2.11 BAKONY TECHNICAL CERAMICS 248
- 11.2.12 ADVANCED CERAMIC MATERIALS 248
- 11.2.13 MCDANEL ADVANCED CERAMIC TECHNOLOGIES 249
- 11.2.14 ADVANCED CERAMICS MANUFACTURING 249
- 11.2.15 BLASCH PRECISION CERAMICS 250
- 11.2.16 MATERION 250
- 11.2.17 | FERROTEC | 251
- $12 \square APPENDIX \square 252$
- 12.1 DISCUSSION GUIDE 252
- 12.2 KNOWLEDGESTORE: MARKETSANDMARKETS' SUBSCRIPTION PORTAL 255
- 12.3 CUSTOMIZATION OPTIONS 257
- 12.4□RELATED REPORTS□257
- 12.5 AUTHOR DETAILS 258



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