

## Monolithic Ceramics – A Global Market Overview

*“The report reviews, analyzes and projects the global market for Monolithic Ceramics for the period 2014-2022”.*

Published: April 2017

Report Code: CP008

Pages: 432

Charts: 282

Price: \$4500 Single User License, \$7200 Enterprise License

### SUMMARY

Monolithic ceramics constitute the largest product category within the broader field of technical ceramics and include those ceramics that, as a rule, are not composites. On the other hand, in monolithic ceramics, the interface chemistry, as also the nature of mechanical and chemical bonding established between the two phases can be entirely different from that obtained in ceramic composites. Monolithic ceramics are typified by their special features, such as reliability, durability and resistance to high temperatures, which makes them indispensable in some of the more demanding applications. These ceramics can be fabricated without a reinforcement material and have a polycrystalline microstructure.

Much of the demand for Monolithic Ceramics is derived from their extensive use in the automotive, electrical and electronics, power and defense industries. A growing global demand for electronic devices, such as laptops and mobile phones, has been instrumental in propelling the market for these materials. Asia-Pacific’s rapidly expanding electrical and electronics sector has ensured that the region remains at forefront in terms of demand for Monolithic Ceramics. One possible limiting factor to this momentum can be the high cost of processing and excessive requirement of energy that go into obtaining the final product. Some of the other factors playing prominent roles in impacting the market for Monolithic Ceramics include greater use of these ceramics in fabricating turbine blades and other automotive components and stringent pollution control measures being rolled out by developing nations.

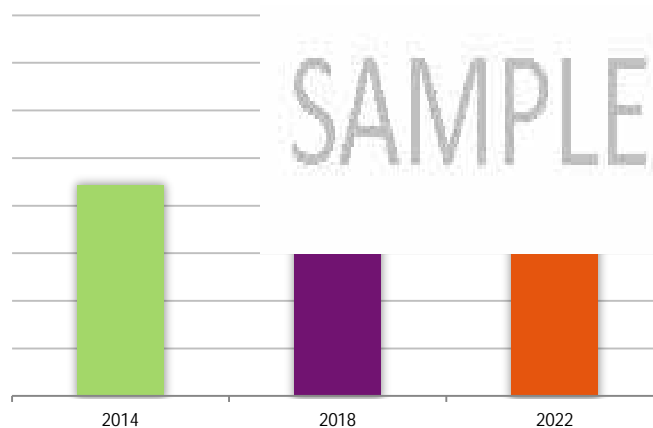
Worldwide market for Monolithic Ceramics forecast to be US\$51.2 billion in 2017 and projected to reach US\$67.5 billion by 2022 at a CAGR of 5.7% between 2017 and 2022. Electrical & Electronic Components lead the global demand for Monolithic Ceramics which is forecast to be US\$26.3 billion in 2017 and is expected to maintain a CAGR of 5.7% between 2017 and 2022 and reach a projected US\$34.7 billion by 2022.

The report analyzes the monolithic ceramic product types comprising Non-Oxides and Oxides. Monolithic Oxide Ceramics’ market further reviewed by its sub-type including Aluminum Oxide and Zirconium Oxide. The study also analyzes the key applications of monolithic ceramics consisting of Catalyst Supports, Electrical & Electronic

Components, Filters, Wear Components and Others. The global markets for aforementioned ceramic types and applications of monolithic ceramics are analyzed in terms of value in USD for 2014-2022 analysis period in the global markets comprising North America, Europe, Asia-Pacific, Latin America and Rest of World. The regional markets further analyzed for 16 independent countries across North America – The United States and Canada; Europe – France, Germany, Italy, Russia, Spain and the United Kingdom; Asia-Pacific – China, India, Japan, South Korea and Taiwan; Latin America – Argentina, Brazil and Mexico. The market is analyzed in all of these major regions by key countries, ceramic types/sub-types and by key applications in terms of USD.

This 432 page global monolithic ceramics’ market report includes 282 charts (includes a data table and graphical representation for each chart), supported with meaningful and easy to understand graphical presentation, of market numbers. The report profiles 17 key global players and 41 major players across North America – 18; Europe – 8 and Asia-Pacific – 15. The study also provides the listing of the companies engaged in manufacturing and supply of monolithic ceramics. The global list of companies covers the address, contact numbers and the website addresses of 448 companies.

Global Monolithic Ceramics Market Analysis (2014-2022) in USD Million



## SAMPLE COMPANY PROFILE

### ADVANCED CERAMICS MANUFACTURING, LLC

7800-A South Nogales Highway, Tucson, Arizona 85756  
 United States  
 Phone: 520-547-0850, Fax: 520-547-0851  
 Website: www.acmtucson.com

#### Business Overview

Established in 2001 and headquartered in Tucson, Arizona, Advanced Ceramics Manufacturing, LLC (ACM) is a worldwide leader in developing and manufacturing ceramic components and composite parts. The company's business capabilities include composite tooling, composite manufacturing, technical ceramics, ceramic processing, mechanical characterization and energy harvesting process. The company's facility is spread across 20,000 sq. ft. and has a state-of-art machine shop, autoclave, wet-lab, metrology lab, numerous ceramic firing ovens, QC lab, and two composite clean rooms. ACM provides various kinds of ceramic based solutions to clients from raw materials that can be cast into mandrels, to mandrels shaped to the customer's required tolerances, or finished composite parts. The company has served over 800 companies and has 72 active projects on hand. The company's aerospace composite products include mil-spec carbon fibers, boeing spec carbon fibers, bell spec carbon fibers, aerospace phenolics, pre-preg fibers wet lay-up. The projects of the company include thermoelectrics, tree spikes, ceramic tooling boards, cutting tools, and structural capacitors. ACM's technical ceramic materials offering cover alumina (Al<sub>2</sub>O<sub>3</sub>), alumina toughened zirconia (ATZ) grade, silicon nitride (Si<sub>3</sub>N<sub>4</sub>) grade, zirconia (ZrO<sub>2</sub>) grade and others.

#### Product Portfolio

| Product  | Description  |
|--|--|
| Alumina (Al <sub>2</sub> O <sub>3</sub> )                      | Alumina is a versatile ceramic that offers substantial wear and chemical stability. It is an ideal electrical insulator and low loss dielectric suitable for electro-magnetic applications.  |
| Alumina toughened zirconia (ATZ) grade: ATZ 1 HP               | ATZ is ACM's latest high strength ceramic material that offers extraordinary strength on par with the best state of the art materials. It combines that hardness of alumina with the strength and toughness of zirconia ("ceramic steel"). |
| Silicon nitride (Si <sub>3</sub> N <sub>4</sub> ) grade: A34HP | Silicon nitride is a covalently bonded solid that offers a desirable combination of high strength, toughness, and hardness that are stable at high temperatures  |
| Zirconia (ZrO <sub>2</sub> ) Grade: 3YSZ                       | Zirconia's offer the highest strength and toughness of all monolithic ceramics. Many zirconia's structural advantages arise from its transformational toughening which lead to its nickname "ceramic steel."                               |
| Other materials  | Silicon carbide (sic), sialon, aluminum nitride (aln), zirconia (zro2), zirconium diboride (zrb2), titanium diboride (tib2), titanium nitride (tin), tantalum carbide (tac), alumina ticn, zrb2-sic composites                             |
| Specialty ceramics   | Mazon gold: high strength / high electric conductivity, machinable: alumina, silicon nitride and fibrous monoliths: enhanced damage tolerance  |

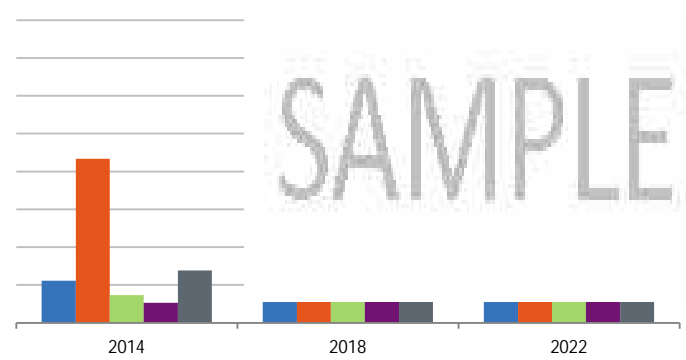
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## SAMPLE TABLE/CHART

Glance at 2017 Global Monolithic Ceramics Market Share (%) by Geographic Region – North America, Europe, Asia-Pacific, Latin America and Rest of World



Asia-Pacific Monolithic Ceramics Market Analysis (2014-2022) by Application – Catalyst Supports, Electrical & Electronic Components, Filters, Wear Components and Other Applications in USD Million



## KEY PLAYERS PROFILED

- Advanced Ceramics Manufacturing, LLC
- Advanced Monolythic Ceramics, Inc
- Aremco Products, Inc.
- AVX Corporation
- BCE Special Ceramics GmbH
- Ceradyne, Inc.
- Ceramtec GmbH
- Coorstek, Inc.
- Elan Technology, Inc.
- Ferro Corporation
- HC Starck GmbH
- Kyocera Corporation
- Materion Corporation
- Mcdanel Advanced Ceramic Technologies, LLC
- Momentive Performance Materials, Inc
- Morgan Advanced Materials PLC
- Murata Manufacturing Co., Ltd.
- NEO Tech
- NGK Insulators Limited
- Rauschert Group
- Saint-Gobain Ceramic Materials
- Vishay Intertechnology, Inc.
- Zircoa, Inc.

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## TABLE OF CONTENTS

### PART A: GLOBAL MARKET PERSPECTIVE..... 1

|   |           |
|---|-----------|
| <b>1. INTRODUCTION .....</b>  | <b>1</b>  |
| 1.1 Product Outline.....  | 3         |
| 1.1.1 A Primer on Monolithic Ceramics .....                                 | 3         |
| 1.1.2 Classification of Monolithic Ceramics .....                           | 3         |
| 1.1.2.1 Non-Oxides .....  | 3         |
| 1.1.2.1.1 Nitrides .....  | 3         |
| 1.1.2.1.1.1 Aluminum Nitride (AlN) .....                                    | 4         |
| 1.1.2.1.1.2 Boron Nitride (BN) .....  | 5         |
| 1.1.2.1.1.3 Silicon Nitride (Si <sub>3</sub> N <sub>4</sub> ) .....         | 7         |
| 1.1.2.1.2 Carbides .....  | 11        |
| 1.1.2.1.2.1 Tungsten Carbide (WC) .....                                     | 12        |
| 1.1.2.1.2.2 Boron Carbide (B <sub>4</sub> C) .....                          | 13        |
| 1.1.2.1.2.3 Silicon Carbide (SiC) .....                                     | 14        |
| 1.1.2.1.3 Borides .....   | 17        |
| 1.1.2.1.3.1 Titanium Diboride (TiB <sub>2</sub> ) .....                     | 17        |
| 1.1.2.1.4 Manufacture of Non-Oxide Monolithic Ceramics .....                | 18        |
| 1.1.2.1.4.1 Green Forming of Monolithic Ceramics .....                      | 18        |
| 1.1.2.1.4.2 Low or Pressureless Densification Methods .....                 | 18        |
| 1.1.2.1.4.3 Pressure Densification Methods .....                            | 18        |
| 1.1.2.1.4.3.1 Hot Pressing .....  | 19        |
| 1.1.2.1.4.3.2 Hot Isostatic Pressing (HIPing) .....                         | 19        |
| 1.1.2.1.5 Finishing of Non-Oxide Monolithic Ceramics .....                  | 19        |
| 1.1.2.2 Oxides .....  | 20        |
| 1.1.2.2.1 Aluminum Oxide or Alumina (Al <sub>2</sub> O <sub>3</sub> ) ..... | 20        |
| 1.1.2.2.1.1 Extraction Methods .....  | 20        |
| 1.1.2.2.1.2 Applications .....  | 23        |
| 1.1.2.2.2 Zirconium Oxide or Zirconia (ZrO <sub>2</sub> ) .....             | 23        |
| 1.1.2.2.2.1 Processing of Zirconia .....                                    | 24        |
| 1.1.2.2.2.1.1 Blank Fabrication .....                                       | 24        |
| 1.1.2.2.2.1.2 Sintering Process .....                                       | 24        |
| 1.1.2.2.2.2 Material Properties .....                                       | 25        |
| 1.1.2.2.2.3 Physical Properties .....                                       | 25        |
| 1.1.2.2.2.4 Applications .....  | 26        |
| <b>2. MONOLITHIC CERAMICS APPLICATIONS – A MARKET SNAPSHOT.....</b>         | <b>27</b> |
| 2.1 Catalyst Supports .....   | 27        |
| 2.1.1 Categories .....  | 28        |
| 2.1.1.1 Fumed Silica and Metal Oxides .....                                 | 28        |
| 2.1.1.2 Pressed Ceramic Ring Supports and Carriers .....                    | 28        |
| 2.1.1.3 Ceramic Honeycomb Catalyst Supports and Carriers .....              | 28        |
| 2.1.1.4 Colloidal Silica Supports and Carriers .....                        | 28        |
| 2.1.1.5 Zeolites .....  | 29        |
| 2.1.2 Materials Used .....  | 29        |
| 2.1.3 Applications .....  | 29        |
| 2.2 Electrical & Electronic Components .....                                | 30        |
| 2.2.1 Kiln and Furnace Engineering .....                                    | 31        |
| 2.2.2 Onshore and Offshore Engineering .....                                | 31        |
| 2.2.3 Power Electronics .....   | 32        |
| 2.2.4 Measuring Systems .....   | 32        |
| 2.2.5 Wafer Production .....  | 33        |
| 2.2.6 Telecommunications .....  | 34        |
| 2.2.7 Lighting Systems .....  | 34        |
| 2.3 Filters .....   | 35        |
| 2.3.1 Raw Materials .....   | 36        |
| 2.3.2 Design .....  | 36        |
| 2.3.3 Production Process .....  | 37        |
| 2.4 Wear Components .....   | 38        |
| 2.5 Other Applications .....  | 40        |
| 2.5.1 Body & Vehicle Armor .....  | 40        |
| 2.5.2 Cutting Tools .....   | 41        |
| 2.5.3 Engine Components .....   | 41        |
| 2.5.4 Membranes .....   | 42        |

### 3. KEY MARKET TRENDS..... 45

|   |    |
|---|----|
| 3.1 Garnet Ceramic Solid-State Batteries Offer Improved Performance with Ultrathin Aluminum Oxide Layer ..... | 45 |
| 3.2 Zirconia Ceramics May Be a Reality in Apple's iPhone 8 .....  | 46 |
| 3.3 Aerospace Sector Takes Off with Ceramics .....  | 46 |
| 3.4 Extreme Temperature Resistant Ceramic Developed .....   | 47 |
| 3.5 Fabrication of Ceramic Electronics Enhanced through Perovskites .....                                     | 48 |
| 3.6 Functionally Graded Ceramics (FGCs): Materials of the Future? .....                                       | 49 |
| 3.6.1 Ceramic-Metal .....   | 49 |
| 3.6.2 Ceramic-Ceramic and Glass-Ceramic .....   | 50 |
| 3.6.3 Ceramic-Polymer .....   | 50 |
| 3.6.4 In Conclusion .....   | 51 |
| 3.7 Novel High-Performance Monolithic Ceramics Boost Turbomachinery Performance .....                         | 52 |
| 3.8 Carbon Nanotubes and Graphene-Reinforced Ceramics Nanocomposites Strengthen Monolithic Ceramics .....     | 53 |
| 3.9 Ceramic Components Find Application in Gas Turbines for Industrial Cogeneration .....                     | 55 |
| 3.10 Porous and Dense Layers of Monolithic YSZ Developed for Ceramic Fuel Cell Applications .....             | 56 |
| 3.11 Low Temperature Co-Fired Ceramic Fuel Processor for Micro-Scale SOFCs Developed .....                    | 57 |

### 4. KEY GLOBAL PLAYERS..... 58

|   |    |
|---|----|
| Advanced Ceramics Manufacturing, LLC (United States) .....  | 58 |
| Ceradyne, Inc. (United States) .....                        | 59 |
| Ceramtec GmbH (Germany) .....                               | 60 |
| Coorstek, Inc. (United States) .....                        | 61 |
| Elan Technology, Inc. (United States) .....                 | 62 |
| Ferro Corporation (United States) .....                     | 63 |
| Hc Starck GmbH (Germany) .....                              | 64 |
| Kyocera Corporation (Japan) .....                           | 65 |
| Materion Corporation (United States) .....                  | 67 |
| Mcdanel Advanced Ceramic Technologies, LLC (US) .....       | 70 |
| Momentive Performance Materials, Inc. (United States) ..... | 71 |
| Morgan Advanced Materials Plc (United Kingdom) .....        | 72 |
| Murata Manufacturing Co., Ltd. (Japan) .....                | 72 |
| Ngk Insulators Limited (Japan) .....                        | 73 |
| Rauschert Group (Germany) .....                             | 75 |
| Saint-Gobain Ceramic Materials (France) .....               | 76 |
| Zircoa, Inc. (United States) .....                          | 79 |

### 5. KEY BUSINESS TRENDS..... 80

|  |    |
|--|----|
| VY1 Compact Series Ceramic Disc Capacitors from Vishay Intertechnology, Inc Qualifies "biased 85/85" Accelerated Life Test ..... | 80 |
| Coorstek Inc Showcases Engineered Ceramic Components at AHR Expo 2017, US .....  | 80 |
| Ceradyne Receives US Army soldier protection programs contract .....   | 80 |
| Ferro Corporation Acquires Electro-Science Laboratories, Inc .....   | 81 |
| AVX Corporation Launches MM Series Medical Grade Multilayer Ceramic Capacitors (MLCCs) .....                                     | 81 |
| Morgan Advanced Materials Plc Expands Silicon Carbide Volumes in UK .....  | 81 |
| NGK Insulators, Ltd Increases Ceramic Production Volumes in China .....  | 82 |
| CoorsTek Inc Showcases Wear-Resistant Ceramics at MINExpo in Las Vegas .....   | 82 |
| Morgan Advanced Materials Plc Unveils new alumina sensor .....   | 82 |
| Morgan Advanced Materials Plc Introduces new Nilcra® Zirconia TS Grade Ceramic Die .....   | 83 |
| CoorsTek Inc Develops New Ceramic Membrane .....   | 83 |
| Blasch Precision Ceramics, Inc Develops VERKAPSE™ Hydrocyclone Liners .....  | 83 |

|  |    |
|--|----|
| CoorsTek Inc Acquires Philips Ceramics Uden .....  | 83 |
| Ceradyne Bags Body Armor Plates Contract from US Defense Logistics Agency .....                        | 84 |
| CoorsTek Inc to Establish New Center for Advanced Ceramic Materials in Golden, Colorado .....          | 84 |
| 3M Deutschland GmbH and Schubert GmbH Enter into Collaboration .....                                   | 84 |
| AVX Corporation Introduces Multilayer Organic (MLO®) High Pass Filters For Wireless Applications ..... | 85 |
| CoorsTek Inc Showcases Semiconductor Processing Ceramic Components at SEMICON Japan .....              | 85 |
| Aremco Products, Inc Develops Alumina Ceramic Material Aremcolox™ 502-1400-99 .....                    | 85 |
| Blasch Precision Ceramics, Inc Launches CeraLine™ .....  | 86 |
| NASA Approves AVX's Space-Level X7R BME Multilayer Ceramic Capacitors (MLCCs) .....                    | 86 |
| AVX Corporation Launches new AVX Radial CapGuard™ Varistors .....                                      | 86 |
| CoorsTek Inc Acquires BLS Textiles, Inc .....  | 87 |
| Morgan Advanced Materials Plc Develops New PGS-100 Graphite-Loaded Silicon Carbon Material .....       | 87 |
| AVX Corporation Introduces SV Series Multilayer Ceramic (MLC) Radial-Leaded Capacitors .....           | 87 |
| CoorsTek Inc Acquires Covalent Materials Corporation ..  | 88 |
| Aremco Products, Inc Develops Ceramacast™ 900 ceramic ..   | 88 |
| Morgan Advanced Materials Plc Develops Silicon Carbide Degassing Rotors .....                          | 88 |

### 6. GLOBAL MARKET OVERVIEW..... 89

|  |     |
|--|-----|
| 6.1 Global Monolithic Ceramics Market Overview by Ceramic Type .....                 | 90  |
| 6.1.1 Global Monolithic Oxide Ceramics Market Overview by Sub-Type .....             | 92  |
| 6.1.2 Monolithic Ceramic Types Market Overview by Global Region .....                | 94  |
| 6.1.2.1 Non-Oxides .....   | 94  |
| 6.1.2.2 Oxides .....   | 96  |
| 6.1.2.2.1 Monolithic Oxide Ceramics Sub-Types Market Overview by Global Region ..... | 98  |
| 6.1.2.2.1.1 Aluminum Oxide .....   | 98  |
| 6.1.2.2.1.2 Zirconium Oxide .....  | 100 |
| 6.2 Global Monolithic Ceramics Market Overview by Application .....                  | 102 |
| 6.2.1 Monolithic Ceramics Applications Market Overview by Global Region .....        | 104 |
| 6.2.1.1 Catalyst Supports .....  | 104 |
| 6.2.1.2 Electrical & Electronic Components .....                                     | 106 |
| 6.2.1.3 Filters .....  | 108 |
| 6.2.1.4 Wear Components .....  | 110 |
| 6.2.1.5 Other Applications .....   | 112 |

### PART B: REGIONAL MARKET PERSPECTIVE.. 114

#### REGIONAL MARKET OVERVIEW..... 116

|   |            |
|---|------------|
| <b>1. NORTH AMERICA .....</b>   | <b>116</b> |
| 1.1 North American Monolithic Ceramics Market Overview by Geographic Region ..... | 117        |
| 1.2 North American Monolithic Ceramics Market Overview by Ceramic Type .....      | 119        |
| 1.2.1 North American Monolithic Oxide Ceramics Market Overview by Sub-Type .....  | 121        |
| 1.2.2 Monolithic Ceramic Types Market Overview by NA Region .....                 | 123        |
| 1.2.2.1 Non-Oxides .....  | 123        |
| 1.2.2.2 Oxides .....  | 125        |
| 1.2.2.2.1 Monolithic Oxide Ceramics Sub-Types Market Overview by NA Region .....  | 127        |
| 1.2.2.2.1.1 Aluminum Oxide .....  | 127        |
| 1.2.2.2.1.2 Zirconium Oxide .....   | 129        |
| 1.3 North American Monolithic Ceramics Market Overview by Application .....       | 131        |



|  |            |   |            |   |            |
|--|------------|---|------------|---|------------|
| 3.5.6.1.1 Rest of Asia-Pacific Monolithic Oxide Ceramics Market Overview by Sub-Type .....   | 346        | 4.3.1.4 Wear Components .....   | 373        | 4.4.4 Rest of Latin America .....   | 398        |
| 3.5.6.2 Rest of Asia-Pacific Monolithic Ceramics Market Overview by Application .....        | 348        | 4.3.1.5 Other Applications .....  | 375        | 4.4.4.1 Rest of Latin America Monolithic Ceramics Market Overview by Ceramic Type .....     | 399        |
| <b>4. LATIN AMERICA .....</b>  | <b>350</b> | 4.4 Country-wise Analysis of Latin American Monolithic Ceramics Market .....    | 377        | 4.4.4.1.1 Rest of Latin America Monolithic Oxide Ceramics Market Overview by Sub-Type ..... | 401        |
| 4.1 Latin American Monolithic Ceramics Market Overview by Geographic Region .....            | 351        | <b>4.4.1 Argentina .....</b>  | <b>377</b> | 4.4.4.2 Rest of Latin America Monolithic Ceramics Market Overview by Application .....      | 403        |
| 4.2 Latin American Monolithic Ceramics Market Overview by Ceramic Type .....                 | 353        | 4.4.1.1 Argentine Monolithic Ceramics Market Overview by Ceramic Type .....     | 378        | <b>5. REST OF WORLD .....</b>   | <b>405</b> |
| 4.2.1 North American Monolithic Oxide Ceramics Market Overview by Sub-Type .....             | 355        | 4.4.1.1.1 Argentine Monolithic Oxide Ceramics Market Overview by Sub-Type ..... | 380        | 5.1 Rest of World Monolithic Ceramics Market Overview by Ceramic Type .....                 | 406        |
| 4.2.2 Monolithic Ceramic Types Market Overview by Latin American Region .....                | 357        | 4.4.1.2 Argentine Monolithic Ceramics Market Overview by Application .....      | 382        | 5.1.1 Rest of World Monolithic Oxide Ceramics Market Overview by Sub-Type .....             | 408        |
| 4.2.2.1 Non-Oxides .....   | 357        | <b>4.4.2 Brazil .....</b>   | <b>384</b> | 5.2 Rest of World Monolithic Ceramics Market Overview by Application .....                  | 410        |
| 4.2.2.2 Oxides .....   | 359        | 4.4.2.1 Brazilian Monolithic Ceramics Market Overview by Ceramic Type .....     | 385        | <b>PART C: GUIDE TO THE INDUSTRY .....</b>  | <b>412</b> |
| 4.2.2.2.1 Monolithic Oxide Ceramics Sub-Types Market Overview by Latin American Region ..... | 361        | 4.4.2.1.1 Brazilian Monolithic Oxide Ceramics Market Overview by Sub-Type ..... | 387        | <b>1. NORTH AMERICA .....</b>   | <b>412</b> |
| 4.2.2.2.1.1 Aluminum Oxide .....   | 361        | 4.4.2.2 Brazilian Monolithic Ceramics Market Overview by Application .....      | 389        | <b>2. EUROPE .....</b>  | <b>423</b> |
| 4.2.2.2.1.2 Zirconium Oxide .....  | 363        | <b>4.4.3 Mexico .....</b>   | <b>391</b> | <b>3. ASIA-PACIFIC .....</b>  | <b>427</b> |
| 4.3 Latin American Monolithic Ceramics Market Overview by Application .....                  | 365        | 4.4.3.1 Mexican Monolithic Ceramics Market Overview by Ceramic Type .....       | 392        | <b>4. REST OF WORLD .....</b>   | <b>430</b> |
| 4.3.1 Monolithic Ceramics Applications Market Overview by Latin American Region .....        | 367        | 4.4.3.1.1 Mexican Monolithic Oxide Ceramics Market Overview by Sub-Type .....   | 394        | <b>PART D: ANNEXURE .....</b>   | <b>431</b> |
| 4.3.1.1 Catalyst Supports .....  | 367        | 4.4.3.2 Mexican Monolithic Ceramics Market Overview by Application .....        | 396        | <b>1. RESEARCH METHODOLOGY .....</b>  | <b>431</b> |
| 4.3.1.2 Electrical & Electronic Components .....   | 369        |   |            | <b>2. FEEDBACK .....</b>  | <b>433</b> |
| 4.3.1.3 Filters .....  | 371        |   |            |   |            |

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