Ceramics: Addressing Need for Structural Materials

LEXINGTON, Massachusetts (October 9, 2012) – WinterGreen Research announces that it has published a new study Ceramics: Market Shares, Strategy, and Forecasts, Worldwide, 2012 to 2018. The 2012 study has 541 pages, 174 tables and figures. Worldwide markets are poised to grow steadily as developing countries have parts of the population that achieve middle class and create demand for ceramic products. This is combined with steady demand in developed countries for ceramic materials used in industry and to keep the home livable and nice.

According to Susan Eustis, lead author of the WinterGreen Research team that prepared the ceramics market research study, “Ceramic markets are tied to the construction industry. The middle class has a primary focus on fixing up a pleasant home. Tile and ceramic materials are key to achieving a comfortable lifestyle, in a nice home. Ceramics also are part of the steel industry as the Refactory materials are key to lining the containers that are used to make steel for manufacturing automobiles.”

Basic steelmaking takes place in containers lined with basic refractories. These may be bricks or other ceramic material. Ceramics sub-sectors are being impacted by the need for the availability of raw materials. The cost structures of energy-intensive ceramics producers are becoming disadvantaged by increasing fuel prices. The ceramics manufacturing process in need of efficient energy is changing markets, hindering the competitiveness of ceramics producers without access to cheap fuels.

The price of energy has risen substantially mirroring to a large extent the rise in the price of crude oil. A consequence of this is that energy costs are likely to account for a far larger share of operating costs.
There are many different types of ceramic tiles including refractory tiles, technical tiles, ornamental tiles, roofing tiles, and tiles made into stands.

The vendors in the ceramics industry have to invest in high-quality production processes, logistics systems that guarantee fast delivery and the development of innovative products in order to keep market share.

The ceramics sector is faced with a number of competitiveness challenges, many of which have been fuelled by globalization. Increased environmental regulation continues to be an issue. The increase in the number of comparative low-cost ceramics products being imported from emerging economies is a sign that in some sectors, particularly in the ceramic tableware sub-sector, the local competitive advantage on the basis of cost is diminishing.

Major global players are emerging in many ceramics subsectors, especially in wall and floor tile manufacturing.

A key competitiveness factor for the ceramics sector is increased environmental regulation and control. The relatively high energy-intensity of ceramics production, brought about by the need to heat kilns up to 2000°C, makes the reduction of carbon dioxide emissions challenging.

The technologies and techniques used in ceramics production to minimize energy use by kilns are already advanced. Major short-term future increases in efficiency are unlikely.

Consideration of Ceramic Market Forecasts indicates that markets at $279 billion will reach $408 billion by 2018. Growth comes as more emphasis is put on creating middleclass jobs in China and elsewhere. People in the middle class build homes and fix up existing ones, using ceramics to do this.

WinterGreen Research is an independent research organization funded by the sale of market research studies all over the world and by the implementation of ROI models that are used to calculate the total cost of ownership of equipment, services, and software. The company has 35 distributors worldwide, including Global Information Info Shop, Market Research.com, Research and Markets, Bloomberg, and Thompson Financial.
## Companies Profiled

### Selected Market Leaders

<table>
<thead>
<tr>
<th>American Standard</th>
<th>Asahi Glass</th>
</tr>
</thead>
<tbody>
<tr>
<td>China Glass Holdings</td>
<td>Concorde Group</td>
</tr>
<tr>
<td>Corning</td>
<td>Ferro</td>
</tr>
<tr>
<td>Guardian</td>
<td>Libbey</td>
</tr>
<tr>
<td>Roca</td>
<td>Saint-Gobain</td>
</tr>
<tr>
<td>Schott</td>
<td>Şişecam</td>
</tr>
</tbody>
</table>

### Selected Market Participants

<table>
<thead>
<tr>
<th>ABK Group</th>
<th>Coop</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crane Holding</td>
<td>Ceramicima imola group</td>
</tr>
<tr>
<td>Eljer Holding Corporation</td>
<td>Corning</td>
</tr>
<tr>
<td>American Standard Legacy Of Quality And Innovation</td>
<td>Directed Vapor Technology</td>
</tr>
<tr>
<td>Asahi Glass Fuel Cell</td>
<td>Emilceramica Group</td>
</tr>
<tr>
<td>AGC Glass</td>
<td>Ferro</td>
</tr>
<tr>
<td>AGC Solar</td>
<td>Faetano-Del Conca Group</td>
</tr>
<tr>
<td>Battelle</td>
<td>Fatih Ozceleb Group</td>
</tr>
<tr>
<td>CARBO Ceramics</td>
<td>Ferro</td>
</tr>
<tr>
<td>Casagrande Padana</td>
<td>Fiandre Group –</td>
</tr>
<tr>
<td>Cemex</td>
<td>Iris</td>
</tr>
<tr>
<td>Ceramiche Caesar</td>
<td>Fincibec Group</td>
</tr>
<tr>
<td>Ceramiche Sant'agostino</td>
<td>Finfloor Group</td>
</tr>
<tr>
<td>Ceradyne</td>
<td>FLABEG Holding GmbH / FLABEG</td>
</tr>
<tr>
<td>China Glass Holdings Limited</td>
<td>Technical Glass / Naugatuck Glass</td>
</tr>
<tr>
<td>China Southern Glass (Australia) Pty Ltd</td>
<td>Fu Yao</td>
</tr>
<tr>
<td>CSG Holding Co., Ltd.</td>
<td>Fuyao Glass Industry Group</td>
</tr>
<tr>
<td>China Glass Holdings Production Base in Suqian</td>
<td>Fu Yao Solar Glass</td>
</tr>
<tr>
<td>Coem</td>
<td>Gardenia-Orchidea Group</td>
</tr>
<tr>
<td>Concorde Group</td>
<td>Gold Art Ceramica Group</td>
</tr>
<tr>
<td>Atlas Concorde and Caesar</td>
<td>Glass for Europe</td>
</tr>
<tr>
<td></td>
<td>Grespania ,</td>
</tr>
</tbody>
</table>

REPORT # SH25332811 541 PAGES 174 TABLES AND FIGURES 2012

$3,700 SINGLE COPY -- $7,400 WEB SITE POSTING
Ceramics: Market Shares, Strategies, and Forecasts, Worldwide, 2012 to 2018

Report Methodology

This is the 533th report in a series of primary market research reports that provide forecasts in communications, telecommunications, the Internet, computer, software, telephone equipment, health equipment, and energy. Automated process and significant growth potential are priorities in topic selection. The project leaders take direct responsibility for writing and preparing each report. They have significant experience preparing industry studies. Forecasts are based on primary research and proprietary data bases.

The primary research is conducted by talking to customers, distributors and companies. The survey data is not enough to make accurate assessment of market size, so WinterGreen Research looks at the value of shipments and the average price to achieve market assessments. Our track record in achieving accuracy is unsurpassed in the industry. We are known for being able to develop accurate market shares and projections. This is our specialty.

The analyst process is concentrated on getting good market numbers. This process involves looking at the markets from several different perspectives, including vendor shipments. The interview process is an essential aspect as well. We do have a lot of granular analysis of the different shipments by vendor in the study and addenda prepared after the study was published if that is appropriate.

Forecasts reflect analysis of the market trends in the segment and related segments. Unit and dollar shipments are analyzed through consideration of dollar volume of each market participant in the segment. Installed base analysis and unit analysis is based on interviews and an information search. Market share
analysis includes conversations with key customers of products, industry segment leaders, marketing directors, distributors, leading market participants, opinion leaders, and companies seeking to develop measurable market share.

Over 200 in depth interviews are conducted for each report with a broad range of key participants and industry leaders in the market segment. We establish accurate market forecasts based on economic and market conditions as a base. Use input/output ratios, flow charts, and other economic methods to quantify data. Use in-house analysts who meet stringent quality standards.

Interviewing key industry participants, experts and end-users is a central part of the study. Our research includes access to large proprietary databases. Literature search includes analysis of trade publications, government reports, and corporate literature.

Findings and conclusions of this report are based on information gathered from industry sources, including manufacturers, distributors, partners, opinion leaders, and users. Interview data was combined with information gathered through an extensive review of internet and printed sources such as trade publications, trade associations, company literature, and online databases. The projections contained in this report are checked from top down and bottom up analysis to be sure there is congruence from that perspective.

The base year for analysis and projection is 2010. With 2010 and several years prior to that as a baseline, market projections were developed for 2011 through 2017. These projections are based on a combination of a consensus among the opinion leader contacts interviewed combined with understanding of the key market drivers and their impact from a historical and analytical perspective.

The analytical methodologies used to generate the market estimates are based on penetration analyses, similar market analyses, and delta calculations to supplement independent and dependent variable analysis. All analyses are displaying selected descriptions of products and services.

This research includes reference to an ROI model that is part of a series that provides IT systems financial planners access to information that supports analysis of all the numbers that impact management of a product launch or large and complex data center. The methodology used in the models relates to having a sophisticated analytical technique for understanding the impact of workload on processor consumption and cost.

WinterGreen Research has looked at the metrics and independent research to develop assumptions that reflect the actual anticipated usage and cost of systems. Comparative analyses reflect the input of these values into models.
The variables and assumptions provided in the market research study and the ROI models are based on extensive experience in providing research to large enterprise organizations and data centers. The ROI models have lists of servers from different manufacturers, Systems z models from IBM, and labor costs by category around the world. This information has been developed from WinterGreen research proprietary data bases constructed as a result of preparing market research studies that address the software, energy, healthcare, telecommunications, and hardware businesses.

Ceramic Executive Summary

The study is designed to give a comprehensive overview of the ceramic market segment. Research represents a selection from the mountains of data available of the most relevant and cogent market materials, with selections made by the most senior analysts. Commentary on every aspect of the market from independent analysts creates an independent perspective in the evaluation of the market. In this manner the study presents a comprehensive overview of what is going on in this market, assisting managers with designing market strategies likely to succeed.
<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.4</td>
<td>Economics Of The Flat Glass Sector</td>
<td>1-9</td>
</tr>
<tr>
<td>1.5</td>
<td>Ceramic tiles</td>
<td>1-10</td>
</tr>
<tr>
<td>1.5.1</td>
<td>Format</td>
<td>1-11</td>
</tr>
<tr>
<td>1.5.2</td>
<td>Color 1-11</td>
<td></td>
</tr>
<tr>
<td>1.5.3</td>
<td>Decoration</td>
<td>1-12</td>
</tr>
<tr>
<td>1.6</td>
<td>Glass Markets</td>
<td>1-12</td>
</tr>
<tr>
<td>1.6.1</td>
<td>Annealed Glass</td>
<td>1-13</td>
</tr>
<tr>
<td>1.6.2</td>
<td>Toughened Glass</td>
<td>1-14</td>
</tr>
<tr>
<td>1.6.3</td>
<td>Laminated Glass</td>
<td>1-15</td>
</tr>
<tr>
<td>1.6.4</td>
<td>Coated</td>
<td>1-16</td>
</tr>
<tr>
<td>1.6.5</td>
<td>Mirrored Glass</td>
<td>1-16</td>
</tr>
<tr>
<td>1.6.6</td>
<td>Patterned Glass</td>
<td>1-17</td>
</tr>
<tr>
<td>1.6.7</td>
<td>Extra-Clear glass</td>
<td>1-17</td>
</tr>
<tr>
<td>1.6.8</td>
<td>Flat Glass Products for the Construction Sector</td>
<td>1-18</td>
</tr>
<tr>
<td>1.7</td>
<td>Glass Uses &amp; Applications</td>
<td>1-18</td>
</tr>
<tr>
<td>1.7.1</td>
<td>Glass in Residential Houses</td>
<td>1-18</td>
</tr>
<tr>
<td>1.7.2</td>
<td>Glass in Commercial Buildings</td>
<td>1-19</td>
</tr>
<tr>
<td>1.7.3</td>
<td>Interior Design</td>
<td>1-19</td>
</tr>
<tr>
<td>1.7.4</td>
<td>Characteristics and Functions of Glass in buildings:</td>
<td>1-19</td>
</tr>
<tr>
<td>1.8</td>
<td>Glass Solar Control</td>
<td>1-21</td>
</tr>
<tr>
<td>1.9</td>
<td>Glass Safety and Security</td>
<td>1-22</td>
</tr>
<tr>
<td>1.9.1</td>
<td>Fire Resistance</td>
<td>1-22</td>
</tr>
<tr>
<td>1.9.2</td>
<td>Noise Control</td>
<td>1-23</td>
</tr>
<tr>
<td>1.9.3</td>
<td>Decorative: Interior Design</td>
<td>1-23</td>
</tr>
<tr>
<td>1.9.4</td>
<td>Self-Cleaning Glass</td>
<td>1-23</td>
</tr>
<tr>
<td>1.9.5</td>
<td>Flat Glass for Automotive and Transports</td>
<td>1-24</td>
</tr>
<tr>
<td>1.9.6</td>
<td>Buses and Coaches</td>
<td>1-26</td>
</tr>
<tr>
<td>1.9.7</td>
<td>Agricultural and Forestry Machinery</td>
<td>1-28</td>
</tr>
<tr>
<td>1.9.8</td>
<td>Ships and Boats</td>
<td>1-28</td>
</tr>
<tr>
<td>1.9.9</td>
<td>Aircraft</td>
<td>1-29</td>
</tr>
<tr>
<td>1.9.10</td>
<td>Trains</td>
<td>1-30</td>
</tr>
<tr>
<td>1.10</td>
<td>Military Ceramic Armor Markets</td>
<td>1-30</td>
</tr>
<tr>
<td>1.11</td>
<td>Ceramic Household And Ornamental Articles</td>
<td>1-32</td>
</tr>
<tr>
<td>1.12</td>
<td>Types of Ceramics</td>
<td>1-32</td>
</tr>
<tr>
<td>1.12.1</td>
<td>Wall and Floor Tiles</td>
<td>1-33</td>
</tr>
<tr>
<td>1.12.2</td>
<td>Sanitaryware</td>
<td>1-34</td>
</tr>
<tr>
<td>1.12.3</td>
<td>Refractory Products</td>
<td>1-34</td>
</tr>
<tr>
<td>1.12.4</td>
<td>Vitrified Clay Pipes</td>
<td>1-35</td>
</tr>
<tr>
<td>1.12.5</td>
<td>Technical Ceramics</td>
<td>1-35</td>
</tr>
<tr>
<td>1.13</td>
<td>Ceramics Impacted By Availability Of Energy, Trade Barriers and</td>
<td>1-36</td>
</tr>
<tr>
<td>1.14</td>
<td>Clay Bricks</td>
<td>1-39</td>
</tr>
<tr>
<td>1.15</td>
<td>Cement Critical To Construction: United States</td>
<td>1-41</td>
</tr>
<tr>
<td>1.15.1</td>
<td>Cement</td>
<td>1-11</td>
</tr>
</tbody>
</table>
Ceramic Market Shares and Market Forecasts

This section selectively describes market shares, forecasts, segments, and regional revenue. Numbers are the result of primary research in all cases. Selected companies are described from an independent analyst perspective with a thumbnail sketch or analysis of their market numbers or commentary on their strengths and weaknesses. Some of the analysis is focused on looking at the topic segment by segment, including company descriptive analyses by segment and subsegment.

2. CERAMICS MARKET SHARES AND MARKET FORECASTS

2.1 Ceramics Sector Market Driving Forces

2.2 Total Ceramics Sector Market Analysis

2.3 Ceramic Market Regional Analysis

2.3.1 Ceramic Market Forecast Analysis: Pottery - Tableware

2.3.2 Pottery - Tableware Market Shares

2.3.3 World Glassware Market

2.3.4 Pottery - Tableware Market Forecasts

2.3.5 Pottery - Tableware Market Regional Analysis

2.3.6 Large Ceramic Producer: Capacity

2.3.7 Large Ceramic Producer: Revenue

2.3.8 Coming Singapore Holdings Private Ltd., a wholly owned subsidiary of Corning Inc., and Samsung Display Co., Ltd.

2.3.9 Strong Competition Came From Home-Based Suppliers

2.3.10 Waterford, Wedgwood and Royal Doulton (WWRD) Group / Johnson Brothers

2.4 Sanitary Pottery

2.4.1 Ceramic Sanitary Pottery Market Segmentation

2.4.2 Sanitary Ware And Ceramic Tiles Private Market

2.4.3 Sanitary Ware And Ceramic Tiles Professional Market

2.4.4 Sanitary ware Segmentation Of The Sanitary Ware Market

2.4.5 Basins

2.4.6 WCs 2-27

2.4.7 Cisterns

2.4.8 Pedestals

2.4.9 Bidets 2-28

2.4.10 Sanitary Pottery Market Shares

2.4.11 Sanitary Pottery Market Forecasts

2.4.12 Sanitary Pottery Regional Analysis

2.4.13 Roca

2.4.14 Sanitaryware Discussion

2.4.15 American Standard

2.5 Ceramic Roof Tile Building Materials

2.5.1 Ceramic Roof Tile Regional Analysis

2.5.2 Roof Tiles

2.5.3 Industrial Nanotech

2.5.4 Nansulate(R)

2.6 Ceramic Bricks

2.6.1 Ceramic Bricks Market Shares

2.6.2 Ceramic Bricks Regional Market Forecast

2.6.3 Ceramic Bricks Regional Market Analysis

2.7 Ceramic Floor Tiles

2.7.1 Ceramic Floor Tile Market Forecasts

2.7.2 Ceramic Floor Tile Regional Analysis

2.7.3 US sales of Ceramic Floor Tile Market Regional Segments

2.7.4 Main Export Markets for Turkish Ceramic Tiles

2.7.5 Ceramic Tile And Stone Consultants (CTaSC)
2.7.6 Ceramic Tile Imports
2.7.7 Agha Group of Companies / National tiles and Ceramics Limited
2.7.8 Imola 2-56
2.7.9 The Concorde Group / Atlas Concorde
2.7.10 The Concorde Group / Caesar
2.7.11 Ceramiche Caesar
2.7.12 Roca
2.7.13 Pamesa
2.7.14 Grespania
2.8 Ceramic Electric Insulator
2.8.1 Ceramic Electric Insulator Regional Market Analysis
2.8.2 Ceramic Insulator Shipment Market Forecasts
2.8.3 Ceramic Electric Insulator Market Shares
2.8.4 Elantas Beck
2.8.5 Bhopal Electrical Insulation Pvt. Ltd.
2.8.6 NGK Insulators Ltd.
2.8.7 Lapp Insulators
2.9 Glass 2-68
2.9.1 Plate Glass, Flat Glass Market Shares
2.9.2 Glass and Flat Glass Market Forecasts
2.9.3 Flat Glass Market Forecasts
2.9.4 Flat Glass Regional Market Segments
2.9.5 NSG Group
2.9.6 AGC Glass
2.9.7 Sisecam Group
2.9.8 Bottle Container Glass
2.9.9 Bottle Glass Market Shares
2.9.10 Bottle Glass Market Forecasts
2.9.11 Saint-Gobain
2.9.12 Packaging Manufacturing Process And Finished Products
2.9.13 Verallia
2.9.14 Verallia Glass Bottle Packaging
2.9.15 Bottle Glass Market Shares
2.9.16 Bottle Glass Market Segments, Regional, Shipments
2.9.17 Owens-Illinois Bottle Glass
2.9.18 Frit Glass
2.9.19 Frit Glass Market Shares
2.9.20 Frit Glass Market Forecasts
2.9.21 Schott
2.9.22 Suzhou Juxing Glass Industrial Co.
2.9.23 Frit Glass Market Shares, Regional Shipments
2.10 Cement
2.10.1 World Cement And Concrete Market Shares
2.10.2 World Cement And Concrete Market Forecasts
2.10.3 World Cement And Concrete Market Regional Analysis
2.10.4 Cement Consumption
2.10.5 US Imports Fill Production Gap
2.10.6 Cement Industry Efficiency Gains
2.10.7 Cement As A Core Industry
2.10.8 Cement Market Size in India
2.10.9 Cemex
2.10.10 Cement Corporation of India
2.10.11 Cement Market Demand
2.11 Refactory Fire Clay Bricks
2.11.1 Refactory Market Shares
2.11.2 Ceramic Refactory Market Shares
2.11.3 Refactory Market Forecasts
2.11.4 Ceramic Refactory Market Forecasts
Ceramic Product Description

This section describes selected companies and selected products. Products for this market segment are described with attention to the most significant aspect of features and functions in this category of product. The juxtaposition of a range of different product descriptions from a single market category provides a
really good way to access market directions and achieve market competitive analysis. This section is arranged in three pieces: immersive products, conference room products, and end point products. Company products are described in the appropriate sections, meaning a company is mentioned several times in the chapter in different places.

3. CERAMICS PRODUCT DESCRIPTION

3.1 Pottery Ceramic Tile
3.1.1 Casa Enzo Ferrari museum in Modena, Italy.
3.1.2 Indoor Outdoor tile
3.2 Ceramic Sanitary Ware Market
3.2.1 Toilets That Are Virtually Clog Free, Save Water And Keep Themselves Cleaner Longer
3.2.2 American Standard Advantage
3.3 Glass
3.3.1 Gorilla Glass
3.3.2 Corning Gorilla Glass
3.3.3 Bottle Glass
3.4 Refractory Products
3.4.1 Refactory
3.4.2 Refractory Suppliers Are Increasingly Quoting Steel Makers A Total System Price Per Ton
3.5 Ceradyne Ceramic Armor
3.6 Ceramic Glazes
3.7 Organic Pigments
3.7.1 Inorganic Pigments
3.7.2 Inorganic Colors Come In A Variety Of Forms
3.7.3 Inorganic Colors Background and Development
3.8 Portland Cement
3.8.1 Portland Cement (ASTM Types)
3.8.2 Types of Portland Cement
3.8.3 Cement Composition
3.8.4 Storage of Cement
3.8.5 Cement Certification
3.8.6 Blended Portland Cements
3.8.7 Modified Portland Cement (Expansive Cement)
3.8.8 Concrete Placed In An Environment Where It Begins To Dry And Lose Moisture

4. CERAMIC TECHNOLOGY

4.1 Ceramic Tile Technology and Features
4.2 Ceramic Associations
4.3 Ceradyne Ceramic Armor Performance
4.3.1 Improving Ceramic Armor Performance
4.3.2 Ceramic Armor Is Damaged On Impact
4.4 Ceramics Sector Is Impacted By Regulations
4.5 Clay’s Natural Advantages
4.6 Ceramic Environmental Regulations
4.6.1 Cement Manufacture Causes Environmental Impacts
4.7 Hydraulic Fracturing Environmental Regulations
4.8 Cement Manufacture Causes Environmental Impacts
4.9 Pigment
4.9.1 Titanium Dioxide
4.9.2 Iron Oxides.
4.9.3 Lead Chromates

REPORT # SH25332811 541 PAGES 174 TABLES AND FIGURES 2012
$3,700 SINGLE COPY -- $7,400 WEB SITE POSTING
4.9.4 Environmental Impacts 4-16
4.9.5 Bauxite and Alumina 4-17
4.9.6 Boron Minerals 4-18
4.9.7 Clays 4-18
4.9.8 Feldspar 4-19
4.9.9 Kyanite and Related Materials 4-20
4.9.10 Rare Earths 4-21
4.9.11 Silica 4-22
4.9.12 Zirconium 4-23
4.9.13 Glass in Photovoltaic Applications 4-24
4.9.14 Glass And Mirrors in Concentrated Solar Power Systems 4-24

Ceramics Company Profiles

This section selectively describes company strategies, partners, acquisitions, and revenue by segment and regional revenue when available. Companies are described by looking at what is most interesting about that company. The descriptions collectively give a sense of market directions within the industry segment. The alphabetical listing of company thumbnail sketches provides an accessible way to find out what is going on in any particular company.

5 CERAMICS COMPANY PROFILES 5-1
5.1 ABK Group 5-1
5.2 American Standard 5-2
5.2.1 Crane Holding Corporation 5-2
5.2.2 Eljer Holding Corporation 5-2
5.2.3 American Standard Legacy Of Quality And Innovation 5-3
5.3 Anchor Glass Container Corporation / Wayzata Investment Partners 5-5
5.4 Asahi Glass Co Ltd 5-6
5.4.1 Asahi Glass Fuel Cell 5-9
5.4.2 Asahi Glass Fuel Cells Close To Practical Use 5-10
5.4.3 Asahi Glass Fuel Cells In Daily Life In 2010 5-11
5.4.4 Asahi Glass Chemicals Business as Core Business to the AGC Group 5-11
5.4.5 Asahi Glass ETFE Film With High Transparency And Flexibility 5-15
5.4.6 AGC Glass Europe 5-15
5.4.7 AGC Revenue 6 Months 2012 5-16
5.4.8 AGC Asahi Glass Revenue 5-16
5.4.9 Asahi Glass Revenue 5-23
5.4.10 Asahi Glass Co., Ltd. / AGC Solar 5-28
5.4.11 AGC Solar Business Overview 5-28
5.4.12 AGC Solar Float Glass and Insulating Glass 5-33
5.4.13 Residential Homes (Low-E Insulating Glass Units) 5-33
5.4.14 AGC Group 5-34
5.4.15 Asahi Glass Co., Ltd. Revenue 5-38
5.4.16 Asahi Glass Co Glass Operations 5-39
5.4.17 AGC Group Segments 5-42
5.4.18 AGC Solar Reportable Segment Glass 5-45
5.4.19 Asahi Glass Co Glass Markets 5-47
5.4.20 Asahi Glass Co Electronics 5-48
5.4.21 Asahi Glass Co Chemicals 5-48
5.4.22 Asahi Glass Co Glass 5-49
5.4.23 Asahi Glass Co Electronics 5-49
5.4.24 Asahi Glass Co Chemicals 5-49
5.5 Battelle 5-50
5.6 CARBO Ceramics 5-50
5.6.1 CARBO Ceramics Revenue 5-51
5.6.2 CARBO Ceramics International Revenue 5-51
5.6.3 CARBO Ceramics Largest Customers 5-52
5.6.4 CARBO Ceramics Manufacturing Capacity 5-53
5.7 Casalgrande Padana 5-55
5.8 Cemex 5-56
5.9 Ceramiche Caesar 5-56
5.10 Ceramiche Sant’agostino 5-56
5.11 Ceradyne 5-57
5.11.1 Ceradyne Products and Markets 5-58
5.11.2 Ceradyne Operating Divisions 5-62
5.11.3 Ceradyne 5-63
5.11.4 Ceradyne, Inc. Reports Second Quarter, 6-Month 2012 Financial Results 5-64
5.11.5 Ceradyne Positioning 5-66
5.11.6 Ceradyne Revenue 5-66
5.11.7 Ceradyne Company Objectives For Advanced Ceramic Solutions 5-68
5.12 China Glass Holdings Limited 5-68
5.12.1 China Southern Glass (Australia)Pty Ltd is a Subsidiary of CSG Holding Co., Ltd. 5-68
5.12.2 China Glass Holdings Production Base in Suqian, Jiangsu 5-72
5.12.3 China Glass Holdings Production Base in Weihai, Shandong 5-72
5.12.4 China Glass Holdings Production Base in Xianyang, Shaanxi 5-73
5.12.5 China Glass Holdings Production Base in Beijing 5-73
5.12.6 China Glass Holdings Production Base of Wuhai, Inner Mongolia 5-73
5.12.7 China Glass Holdings Production base in Nanjing, Jiangsu 5-74
5.12.8 China Glass Holdings Production base in Taicang, Jiangsu 5-74
5.12.9 China Glass Holdings Business and Revenue 5-75
5.12.10 China Glass Holdings Business Review 5-76
5.12.11 China Glass Holdings Outlook Tied To China’s Twelfth Five Year Plan 5-77
5.12.12 China Glass Holdings Lowers Cost to Manufacture Low Iron Glass 5-78
5.12.13 China Glass Network 5-78
5.13 Coem 5-80
5.14 Concorde Group 5-81
5.14.1 Atlas Concorde and Caesar 5-82
5.14.2 The Concorde Group / Atlas Concorde 5-83
5.14.3 The Concorde Group / Caesar 5-83
5.15 Coop. Ceramica imola group 5-84
5.16 Corning 5-85
5.16.1 Corning Opens Advanced Technology Center in Taiwan 5-88
5.16.2 Corning Display Technologies Segment 5-89
5.16.3 Corning Revenue Second-Quarter 2012 Results 5-90
5.16.4 Corning Second-Quarter 2012 Segment Results 5-91
5.16.5 Corning Display Technologies Segment 5-93
5.16.6 Corning Telecommunications Segment 5-93
5.16.7 Corning Environmental Technologies Segment 5-94
5.16.8 Corning Specialty Materials Segment 5-94
5.16.9 Corning Life Sciences Segment 5-95
5.17 Directed Vapor Technology 5-95
5.17.1 Directed Vapor Deposition Next Generation Coating Technology 5-96
5.18 Dong Xu Ltd 5-98
5.19 Emilceramica Group 5-98
5.20 Emser 5-99
5.21 Faetano-Del Conca Group 5-100
5.22 Fatih Ozceleb Group 5-101
5.23 Ferro 5-102
5.23.1 Ferro 2012 Second-Quarter Results 5-102
| 5.24 | Fiandre Group - Iris | 5-103 |
| 5.25 | Fincibec Group | 5-103 |
| 5.26 | Finfloor Group | 5-104 |
| 5.27 | FLABEG Holding GmbH / FLABEG Technical Glass / Naugatuck Glass | 5-104 |
| 5.28 | Fu Yao | 5-106 |
| 5.28.1 | Fuyao Glass Industry Group Parent Company | 5-107 |
| 5.28.2 | Fu Yao Manufacturing Facilities | 5-107 |
| 5.28.3 | Fu Yao Solar Glass | 5-108 |
| 5.29 | Gardenia-Orchidea Group | 5-108 |
| 5.30 | Gold Art Ceramica Group | 5-109 |
| 5.31 | Glass for Europe | 5-110 |
| 5.32 | Grespania | 5-110 |
| 5.33 | Guangdong Golden Glass Technologies Ltd | 5-110 |
| 5.34 | Guangfeng Solarglass (Hong Kong) | 5-111 |
| 5.34.1 | Guangfeng Solar Glass (Hong Kong) Co., Ltd. | 5-113 |
| 5.35 | Guardian | 5-113 |
| 5.35.1 | Guardian Industries | 5-113 |
| 5.35.2 | Guardian Industries Manufactures Glass Using The Float Process | 5-114 |
| 5.35.3 | Guardian Heat-Treated Glass | 5-114 |
| 5.35.4 | Guardian Tempered Glass | 5-115 |
| 5.35.5 | Guardian Industries US Base, Global Growth | 5-117 |
| 5.36 | Huntsman | 5-118 |
| 5.37 | HUPC Chemical | 5-121 |
| 5.38 | IKEA | 5-121 |
| 5.39 | Imerys | 5-123 |
| 5.40 | Imola | 5-128 |
| 5.41 | Industrie Ceramiche Piamme | 5-128 |
| 5.42 | Kronos Worldwide | 5-129 |
| 5.43 | Libbey | 5-130 |
| 5.44 | Marazzi Group | 5-131 |
| 5.45 | Minsen Sanitaryware | 5-132 |
| 5.46 | Nippon Sheet Glass Co Ltd c | 5-132 |
| 5.46.1 | Pilkington North America | 5-134 |
| 5.46.2 | Pilkington in North America | 5-135 |
| 5.46.3 | Nippon Libbey-Owens-Ford Glass | 5-137 |
| 5.47 | NSG Group | 5-138 |
| 5.48 | Owens-Illinois | 5-138 |
| 5.49 | Pamesa | 5-139 |
| 5.50 | PPG | 5-139 |
| 5.50.1 | PPG Acquisition Transformation | 5-140 |
| 5.50.2 | PPG Geographical Profile Transformation | 5-143 |
| 5.50.3 | PPG Industries Business Segments | 5-145 |
| 5.51 | Pacific Northwest National Laboratory | 5-148 |
| 5.52 | Panariagroup | 5-148 |
| 5.53 | Photonics / Hoya Candeo Optronics | 5-149 |
| 5.54 | Roca | 5-152 |
| 5.55 | Ricchetti Group | 5-153 |
| 5.55.1 | Ricchetti Group / Cerdisa | 5-154 |
| 5.56 | Saint-Gobain | 5-154 |
| 5.56.1 | Saint Gobain Solar | 5-155 |
| 5.56.2 | Saint-Gobain Revenue | 5-158 |
| 5.56.3 | Saint-Gobain Packaging | 5-158 |
| 5.56.4 | Saint-Gobain Sales | 5-159 |
5.56.5 Saint-Gobain Operating income 5-159
5.56.6 Saint-Gobain Sectors of activity 5-160
5.56.7 Saint-Gobain Addresses Spanish Market 5-164
5.56.8 Saint-Gobain SGG ALBARINO Glass 5-164
5.56.9 Saint-Gobain Revenue 5-165
5.56.10 Saint-Gobain Ceramic Materials 5-166
5.56.11 Saint-Gobain Revenue 5-173
5.56.12 Saint-Gobain Sales trends by Business Sector 5-174
5.57 Samsung Electronics Co., Ltd. 5-178
5.58 Schott 5-179
5.58.1 Schott Electronic Packaging Gmbh 5-184
5.58.2 Schott Ag Flat Glass 5-186
5.58.3 Schott 5-188
5.58.4 SCHOTT Solar Global presence 5-190
5.58.5 SCHOTT Solar Photovoltaics (PV) Business Division 5-190
5.58.6 SCHOTT Solar 2008 – Hospital Ward In Senegal 5-192
5.58.7 SCHOTT Light for Tanzania 5-193
5.58.8 SCHOTT Solar PV and Consolidated Solar Technologies Inaugurate Photovoltaic Solar Installation at Moriarty High School 5-193
5.58.9 SCHOTT Solar Black Frame Modules 5-194
5.58.10 SCHOTT Solar comes out on top in PV+ Test Conducted by Solarpraxis and TÜV Rheinland 5-195
5.59 Serenissima cir ind. Ceramiche group 5-195
5.60 Shandong Glass Group Jinjing Group Co Ltd 5-196
5.60.1 Shandong Glass Group Jinjing Group Advanced Equipment 5-197
5.60.2 Shandong Glass Group Jinjing Group Quality Management 5-198
5.60.3 Shandong glass group Jinjing Grouppowerful Scientific Research Team 5-199
5.60.4 Shandong Glass Group Jinjing Group Markets 5-199
5.60.5 Shandong Glass Group Jinjing Groupgoals 5-200
5.60.6 Shandong Glass Group Driving Development 5-200
5.61 Şişecam 5-201
5.61.1 Şişecam Group 5-201
5.62 Suzhou Juxing Glass Industrial 5-206
5.63 WWRD United Kingdom Ltd 5-208
5.64 Selected List of Ceramic Companies 5-209
5.64.1 Flat Glass Companies 5-209
5.64.2 Refractory Products 5-209
5.64.3 Key Enterprises Worldwide 5-210
5.64.4 Key Enterprises in China 5-210
5.64.5 Sanitaryware Companies 5-211
5.64.6 Tableware and Ornamental Ware 5-211
5.64.7 Bricks And Roof Tiles Companies 5-211
5.64.8 Key Enterprises Worldwide 5-215
5.64.9 Key Enterprises in China 5-215

List of Tables and Figures

Ceramic Executive Summary

Figure ES-1 ES-2
Typical Ceramics Production Process
Table ES-2 ES-4
Ceramics Sector Market Driving Forces
WinterGreen Research, INC.

Figure ES-3
Organization Of The Ceramic Market Analysis: Market Segments
Figure ES-4
Organization Of The Ceramic Market Analysis: Regional
Market Segments

Ceramic Market Description and Market Dynamics

Table 1-1 1-2
Factors Having Substantial Impact On The Competitiveness Of The
Ceramics Sector:
Figure 1-2 1-3
Annual Industrial Electricity Prices, 2006
Table 1-3 1-4
Half-Yearly Electricity And Gas Prices, 2011 (EUR per kWh)
Table 1-4 1-13
Flat glass Highly Specialized Forms
Table 1-5 1-20
Characteristics and Functions of Glass in Buildings:
Table 1-6 1-25
Transportation Uses of Glass
Table 1-7 1-33
Types of Ceramics
Figure 1-8 1-38
Distribution Channels in the Brick and Roof Tile Sub Sector
Figure 1-9 1-39
Growth Levers for Clay Bricks
Figure 1-10 1-40
Imerys Structure Leader in Clay Bricks

Ceramic Market Shares and Market Forecasts

Figure 2-1 2-2
Typical Ceramics production process
Table 2-2 2-4
Ceramics Sector Market Driving Forces
Figure 2-3 2-6
Organization Of The Ceramic Market Analysis: Market Segments
Figure 2-4 2-8
Organization Of The Ceramic Market Analysis:
Regional Market Segments
Table 2-5 2-8
Ceramics Shipment Market Forecasts, Total, Dollars,
Worldwide, 2012-2018
Table 2-6 2-11
Ceramics Shipment Market Regional Forecasts, Total,
Dollars, Worldwide, 2012-2018
Table 2-7 2-12
Ceramics Shipment Market Regional Forecasts, Total,
Percent, Worldwide, 2012-2018
Table 2-8 2-13
Key Growth Drivers for Tableware
Ceramic Insulation Material in China Shipments in Kilotons Worldwide 2011
Table 2-28 2-64
Ceramic Insulator Shipment Market Forecasts Dollars, Worldwide, 2012-2018
Table 2-29 2-69
Flat Glass Key Figures:
Table 2-30 2-71
Plate Glass, Flat Glass Market Shares, Shipments in Weight and Dollars, Worldwide, 2011
Figure 2-31 2-73
Glass Demand Mapped Against Real GDP Growth
Figure 2-32 2-74
Flat Glass Capacity By Region
Table 2-33 2-75
Market Share Leaders in Plate Glass, 2012
Table 2-34 2-78
Flat Glass Shipment Market Forecasts, Dollars, 2012-2018
Table 2-35 2-79
Flat Glass Market Segments, High Quality Float, Low Quality Float, Sheet Glass, Rolled Glass Shipments
Table 2-36 2-80
Flat Glass Market Segments, Regional, Shipments in Weight and Dollars, Worldwide, 2011
Table 2-37 2-81
Number of Float Glass Tanks In Europe
Table 2-38 2-82
Market Leaders and Number of Float Glass Tanks In Europe
Table 2-39 2-86
Bottle Glass Shipment Market Forecasts Dollars, Worldwide, 2012-2018
Table 2-40 2-90
Bottle Glass Market Shares, Shipments in Weight and Dollars, Worldwide, 2011
Table 2-41 2-91
Bottle Glass Market Segments, Regional, Shipments in Weight and Dollars, Worldwide, 2011
Table 2-42 2-94
Frit Glass Market Shares, Shipments in Weight and Dollars, Worldwide, 2011
Table 2-43 2-95
Frit Glass Shipment Market Forecasts Dollars, Worldwide, 2012-2018
Table 2-44 2-97
SCHOTT Standard Materials For The Wafer:
Table 2-45 2-98
Frit Glass Market Segments, Regional, Shipments in Weight and Dollars, Worldwide, 2011
Table 2-46 2-100
Ceramic Concrete and Cement Shipment Market Forecasts Dollars, Worldwide, 2012-2018
Table 2-47 2-101
Ceramic Concrete and Cement Market Regional Segments, Shipments in Units and Dollars, Worldwide, 2011
Table 2-48 2-106
Major Producers Of Cement In The World Country
WinterGreen Research, INC.

Production In Thousand Metric Tonnes 2006
Table 2-49 2-113

Ceramic Refactory Steel, Metal, and Non Metallic Market
Table 2-50 2-114

Ceramic Refactory Market Segments, By Form Bricks and Shapes,
Monolithics (Unshaped/Unformed) Shipments in Units and Dollars,
Worldwide, 2011
Table 2-51 2-115

Ceramic Refactory Market Shares, Shipments in Units and
Dollars, Worldwide, 2011
Table 2-52 2-117

Ceramic Refactory Shipment Market Forecasts Dollars,
Worldwide, 2012-2018
Table 2-53 2-120

Ceramic Refactory Market Regional Segments, Shipments in
Units and Dollars, Worldwide, 2011
Table 2-54 2-132

Ceramic Coatings Shipments Market Forecasts Dollars,
Worldwide, 2012-2018
Table 2-55 2-133

Ceramic Coatings Market Regional Segments, Shipments in
Units and Dollars, Worldwide, 2011
Table 2-56 2-136

Capacity And Output Of Major Inorganic Pigments in China
Table 2-57 2-138

Ceramic Inorganic Color Pigments Market Shares,
Shipments in Units and Dollars, Worldwide, 2011
Table 2-58 2-139

Ceramic Coatings Shipment Market Forecasts, Dollars,
Worldwide, 2012-2018
Table 2-59 2-140

Ceramic Inorganic Color Pigments Shipments Market
Forecasts Dollars, Worldwide, 2012-2018
Table 2-60 2-141

Ceramic Inorganic Color Pigments Market Regional
Segments, Shipments in Units and Dollars, Worldwide, 2011
Table 2-61 2-144

Ceramic Enamel Frit Market Shares, Shipments in
Units and Dollars, Worldwide, 2011
Table 2-62 2-145

Frit Glass Market Shares, Shipments in Weight and Dollars,
Worldwide, 2011
Table 2-63 2-146

Ceramic Enamel Frit Shipment Market Forecasts Dollars,
Worldwide, 2012-2018
Table 2-64 2-147

Frit Glass Market Segments, Regional, Shipments in
Weight and Dollars, Worldwide, 2011
Table 2-65 2-151
Sanitary Ware Consumption in the EU By country,
2004-2008, € million

REPORT # SH25332811 541 PAGES 174 TABLES AND FIGURES 2012
$3,700 SINGLE COPY -- $7,400 WEB SITE POSTING
Ceramic Product Description

Figure 3-1 3-2
Resista Porcelain Tile
Figure 3-2 3-3
Casa Enzo Ferrari museum in Modena, Italy
Figure 3-3 3-4
Artistic Tiles for Museum
Figure 3-4 3-8
Durvat Washstand Sanitaryware.
Figure 3-5 3-9
Durvat Bathroom Sanitaryware.
Table 3-6 3-10
Raw Materials For Ceramic Sanitary ware
Table 3-7 3-11
Ceramic Sanitary ware Basin Types
Table 3-8 3-12
Ceramic Sanitaryware Bidet and Other Types
Table 3-9 3-13
Ceramic Sanitaryware Designs
Figure 3-10 3-15
American Standard Toilets
Table 3-11 3-17
Glass Float Process European Manufacturers
Figure 3-12 3-20
Owens-Illinois Bottle Glass
Table 3-13 3-23
Refractory Materials
Table 3-14 3-37
Portland Cement Types And Their Uses
Table 3-15 3-40
Effects of Cements On Concrete Properties
Table 3-16 3-42
Blended Cement Types And Blended Ratios
Table 3-17 3-44
Types of Expansive Cements

Ceramic Technology

Table 4-1 4-1
Ceramic Tile Technology and Features
Table 4-2 4-4
Ceramic Associations
Figure 4-3 4-8
Clay’s Natural Advantages

Ceramic Company Profiles

Table 5-1 5-4
American Standard Champion Functions
Figure 5-2 5-7
Asahi Glass Transparent Conductive Film Glass Substrates
Figure 5-3  5-9
Asahi Glass Fuel Cell
Figure 5-4  5-11
AGC Asahi Glass Ecoglass Sun Balance
Figure 5-5  5-13
AGC Asahi Glass Comparison Between Ordinary
Windshield and Coolverre
Figure 5-6  5-14
AGC Asahi Glass Effects of Coolverre
Figure 5-7  5-17
Asahi Glass Revenue
Figure 5-8  5-18
Asahi Glass Sales Ratios
Figure 5-9  5-20
AGC Asahi Glass New Glass Products
Figure 5-10  5-22
AGC Asahi Glass New Glass Products
Figure 5-11  5-23
Asahi Glass Segments
Figure 5-12  5-24
Asahi Glass Sales
Figure 5-13  5-25
Asahi Glass Performance Trends
Figure 5-14  5-26
Asahi Glass Growth Positioning
Figure 5-15  5-27
Asahi Glass Production Technologies
Figure 5-16  5-29
AGC Solar Business Overview
Figure 5-17  5-30
AGC Solar Group Industries
Figure 5-18  5-31
AGC Solar Glass Buildings
Table 5-19  5-32
AGC Solar Main Product Categories
Figure 5-20  5-35
AGC Solar Locations
Figure 5-21  5-36
AGC Solar Partners
Figure 5-22  5-37
AGC Solar Partner Descriptions
Figure 5-23  5-41
ACG Glass Operations, 134 Companies
Figure 5-24  5-43
ACG Solar Overseas Operations, 119 Companies
Figure 5-25  5-44
Asahi Glass Co Overview of Geographic Segments
Table 5-26  5-45
AGC Solar Main Products
Figure 5-27  5-46
Asahi Glass Co (AGC) Business Segments
Table 5-28  5-58
Saint-Gobain Glass Market Activities
Figure 5-55 5-160
Saint-Gobain Revenue By Sector
Table 5-56 5-163
Saint-Gobain Renedo Installation Aspects
Table 5-57 5-168
Saint-Gobain Grid Parity Priority Axes
Figure 5-58 5-169
Saint-Gobain Revenue By Geographic Area
Figure 5-59 5-170
Saint-Gobain European and World Leader In Each One Of Its Activities
Figure 5-60 5-172
Saint-Gobain Shareholders Ownership Structure at December 31, 2010
Figure 5-61 5-174
Saint-Gobain Sales trends by Business Sector
Figure 5-62 5-177
Saint-Gobain Sales Trends By Major Geographic Area
Figure 5-63 5-180
Schott Products Glass-to-Metal-Seals and Ceramic-to-Metal-Seals
Figure 5-64 5-181
Schott Automotive Glass
Figure 5-65 5-181
Schott Defense Seals
Figure 5-66 5-181
Schott Industry Special Products
Figure 5-66 (Continued) 5-182
Schott Industry Special Products
• Figure 5-66 (Continued) 5-183
Schott Industry Special Products
Table 5-67 5-184
Schott Electronic Packaging Product Benefits:
Figure 5-68 5-185
Schott A Flexible Glass Fiber Light Guides Transmit The Light
Figure 5-69 5-187
Schott Ultra thin Glass Flexible Substrates
Table 5-70 5-191
SCHOTT Solar Products Photovoltaic Modules Advantages
Figure 5-71 5-202
Şişecam Group Sales Profile
Figure 5-72 5-203
Şişecam Group Results by Businesses
Figure 5-73 5-204
Şişecam Group Revenue
Figure 5-74 5-204
Şişecam Group Revenue and International Sales
Figure 5-75 5-205
Şişecam Group Employees and Glass Production
ABOUT THE COMPANY

WinterGreen Research, research strategy relates to identifying market trends and growth through a deep understanding of change in markets and innovation. Innovation trends are understood by reading about and interviewing opinion leaders. Proprietary information is developed by interviewing companies and opinion leaders. By using analysis of SEC published materials, interview material, private research, detailed research, social network materials, blogs, and electronic analytics, the market size, shares, and trends are identified. Analysis of the published materials and interviews permits WinterGreen Research senior analysts to learn a lot more about markets. Discovering, tracking, and thinking about market trends is a high priority at WinterGreen Research. As with all research, the value proposition for competitive analysis comes from intellectual input.


Industry reports focus on opportunities that expand existing markets or develop major new markets. The reports access new product and service positioning strategies, new and evolving technologies, and technological impact on products, services, and markets. Innovation that drives markets is explored. Market shares are provided. Leading market participants are profiled, and their marketing strategies, acquisitions, and strategic alliances are discussed. The principals of WinterGreen Research have been involved in analysis and forecasting of international business opportunities in telecommunications and advanced computer technology markets for over 30 years.

The studies provide primary analytical insight about the market participants. By publishing material relevant to the positioning of each company, readers can look at the basis for analysis. By providing descriptions of each major participant in the market, the reader is not dependent on analyst assumptions, the information backing the assumptions is provided, permitting readers to examine the basis for the conclusions.

About The Principal Authors

Ellen T. Curtiss, Technical Director, co-founder of WinterGreen Research, conducts strategic and market assessments in technology-based industries. Previously she was a member of the staff of Arthur D. Little, Inc., for 23 years, most recently as Vice President of Arthur D. Little Decision Resources, specializing in strategic planning and market development services. She is a graduate of Boston University and the Program for Management Development at Harvard Graduate School of Business Administration. She is the author of recent studies on worldwide telecommunications markets, the top ten internet equipment companies, the top ten contract manufacturing companies, and the Top Ten Telecommunications market analysis and forecasts.

Susan Eustis, President, co-founder of WinterGreen Research, is a senior analyst. She has done research in communications, healthcare equipment, and computer markets and applications. She holds several patents in microcomputing and parallel processing. She has the original patents in electronic voting machines. She has new patent applications in format varying, multiprocessor, and electronic voting. She is the author of recent studies of the Regional Bell Operating Companies’ marketing strategies, Internet equipment, biometrics, a study of Internet Equipment, Worldwide Telecommunications Equipment, Top Ten Telecommunications, Digital Loop Carrier, Web Hosting, Web Services, and Application Integration markets. Ms. Eustis is a graduate of Barnard College.
ORDER FORM

Return To: WinterGreen Research, Inc.
6 Raymond Street
Lexington, MA 02421 USA
Phone: (781) 863-5078 --- Fax: (781) 863-1235 (preferred) info@wintergreenresearch.com

PLEASE ENTER MY ORDER FOR:


-ALL REPORTS ARE AVAILABLE IN EITHER PRINT OR PDF-

[ ] PDF [ ] PRINT

[ ] ENCLOSED IS MY CHECK FOR $3,700 FOR SINGLE COPY, $7,400 FOR WEB SITE POSTING

[ ] PLEASE BILL MY COMPANY USING P.O. NUMBER__________________________________________

[ ] PLEASE CHARGE MY MASTERCARD/Visa/AMERICAN EXPRESS—
CARDB NUMBER _______________________________ EXP. DATE __________________

If charging to a credit card use the shopping card order form on the Internet, fax, or call.

NAME________________________________________ TITLE________________________________________

SIGNATURE________________________________________________________________________________

COMPANY________________________________________ DIVISION________________________________________

ADDRESS________________________________________

CITY__________________________________________ STATE / ZIP________________________________________

TELEPHONE________________________________________

FAX________________________________________

EMAIL________________________________________

PLEASE NOTE: RESIDENTS OF MASSACHUSETTS AND CONNECTICUT MUST INCLUDE APPROPRIATE SALES TAX

SUBSCRIBERS OUTSIDE THE UNITED STATES MUST PROVIDE PREPAYMENT IN U.S. FUNDS

REPORT # SH25332811 541 PAGES 174 TABLES AND FIGURES 2012

$3,700 SINGLE COPY -- $7,400 WEB SITE POSTING