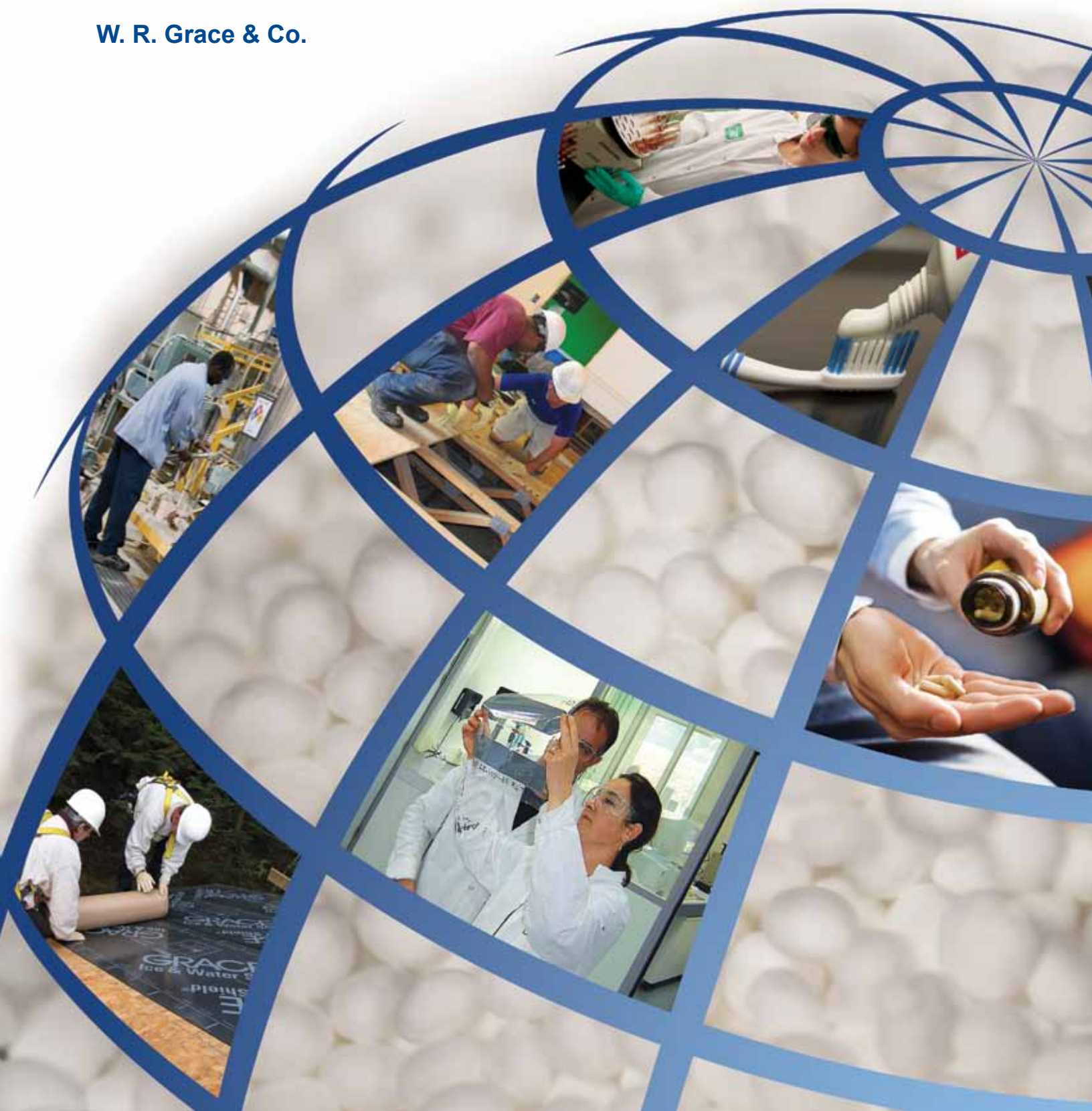


GRACE

Enriching Lives, *Everywhere.*®

Annual Report 2010

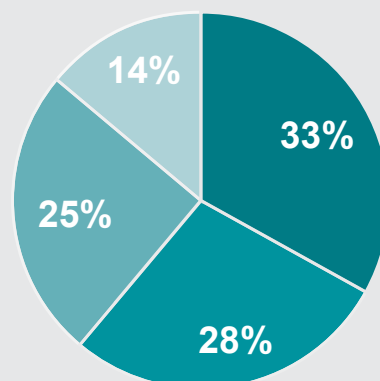
W. R. Grace & Co.



“ We are making important investments in our businesses, particularly in the emerging regions, which will continue to drive our growth in sales, earnings, and returns to shareholders.”

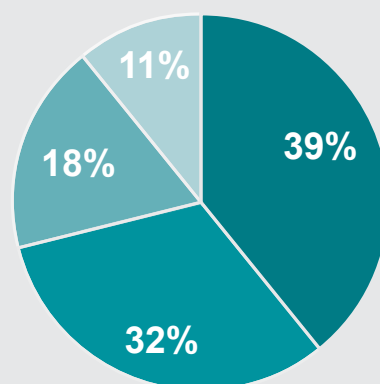
– Fred Festa

2010 Sales by Product Group



- **\$873 million**
Grace Construction Products
- **\$742 million**
Grace Davison Refining Technologies
- **\$674 million**
Grace Davison Materials Technologies
- **\$386 million**
Grace Davison Specialty Technologies

2010 Sales by Region



- **\$1,053 million**
Europe, Middle East and Africa
- **\$854 million**
North America
- **\$483 million**
Asia Pacific
- **\$285 million**
Latin America

Grace's manufacturing facility in
Baltimore (Curtis Bay), Maryland
celebrated 100 years of operation in 2010







President's Letter

Dear Fellow Shareholders, Customers, Colleagues and Business Partners,

An important test of the **quality** and **strength** of any business is how it finds opportunities in weak economic times. Over the last two years, the economy has been more challenging than any time in my memory. We made important decisions to **improve** the long-term **growth** and **profitability** of Grace. We acted quickly to match our operations to our markets; revisited and reinvigorated our strategies; and, maintained focus on improving our core business. I am proud of what we accomplished and I believe we are well positioned for **success** in 2011.

As 2009 came to a close, we worked hard to understand how our markets would perform in 2010 and then selected the best strategies for our businesses. We owe much of our success to the way we executed on that effort. For Grace Davison, the markets were stabilizing and excellent growth opportunities were beginning to emerge. Grace Davison did a great job anticipating and capturing these opportunities. Their execution was nearly flawless.

For Grace Construction Products, the massive overhang from the construction bubble and other external forces in North America and Europe were still quite challenging. Consequently, we entered 2010 with plans to improve profitability in the core business, rapidly accelerate growth in emerging regions and tightly control expenses. We delivered on all three elements of our strategy. Today, we are improving our position in emerging markets, moving resources around the globe to capture the best growth opportunities and not adding resources

unless we have absolute clarity around market performance. As a result, Grace Construction Products is in a good position to grow profitably as underperforming regions recover.

The cover of this year's Annual Report says a lot about Grace today. Although we have always had operations around the world, we made a decision several years ago to invest more aggressively in emerging economies. The mature economies of the U.S. and Europe are still important to us, but growth is slowing in these regions. We are seeing the fruit of that decision now.

Today, we have 34 manufacturing facilities, five technology centers and strong sales and technical support in the emerging regions, as defined by the International Monetary Fund. In 2011, Grace Davison plans to expand capacity to supply polypropylene catalysts to the Middle East and silica gel in Asia and South America to support our renewable fuels effort, a growth platform for



Grace manufacturing facility in
Worms, Germany

Financial Highlights

Amounts in millions, except per share data

	2010	2009	2008
Net Sales.....	\$2,675.0	\$2,825.0	\$3,317.0
Net Income.....	\$207.4	\$81.2	\$136.9
Diluted EPS.....	\$2.78	\$0.98	\$1.68
Weighted Average Diluted Shares Outstanding.....	74.4	72.6	72.5
Cash and Cash Equivalents.....	\$1,015.7	\$893.0	\$460.1
Net Cash Provided by Operating Activities*	\$327.7	\$433.4	\$15.0

* Net cash provided by operating activities includes payments of \$28.6 million, \$54.2 million and \$321.3 million for the years ended December 31, 2010, 2009 and 2008, respectively, for Chapter 11 expenses and settlements of contingencies subject to Chapter 11. Net cash provided by operating activities before Chapter 11 expenses and settlements was \$356.3 million, \$487.6 million and \$336.3 million for the years ended December 31, 2010, 2009 and 2008, respectively.

Please refer to our Annual Report on Form 10-K filed with the United States Securities and Exchange Commission and available at www.sec.gov for additional information on our business, proposed plan of reorganization and other legal proceedings, and our financial condition and results of operations.

“We are just as focused as ever on being the world’s premier specialty chemicals and materials company. Our purpose, to do everything we can to help our customers, still drives us.”

our future. Grace Construction Products added new facilities in Brazil, China, Saudi Arabia and Vietnam in 2010 and expects to open at least four new plants in 2011. We believe that these investments and others in emerging regions will make increasingly significant contributions to our growth for many years to come. Today, many of our sales outside of North America come from products manufactured here. In 2010, over \$450 million worth of products were exported from the U.S. to over 50 countries. Many Grace jobs in the U.S. depend on exports continuing to grow. I am hopeful that the U.S. Administration will continue pursuing trade agreements that open more markets to our products.

In addition to investing in new facilities, we also continued to make small bolt-on acquisitions to extend our product lines, increase our geographic reach and expand our manufacturing capacity. In 2010, we acquired Synthetech, Inc. as a way to quickly add new capacity for single site and polypropylene specialty catalysts and extend our discovery sciences offerings to the pharmaceutical sector. In China, we acquired a building materials business to increase the footprint of Grace Construction Products in Asia, shorten our supply lines and give us a portfolio of new products. And, as the year came to a close, we acquired RS Solutions, a U.S. company engaged in the design and manufacturing of quality control systems for ready mix concrete trucks.

We continue to rely on our productivity efforts to deliver cost savings and revenue enhancements. Grace Construction Products focused on improving their manufacturing to make products with equal or better quality at lower costs. Grace Davison worked to improve the volume of products manufactured on existing equipment without sacrificing quality. In 2010, these efforts—and many others like them—generated a productivity gain of \$92.1 million.

Among the things that impress me most about Grace is the way people respond to adverse conditions—not just those faced by the business. Last year, many of our colleagues experienced natural disasters that threatened them, their families and our facilities. Whether it was in Chile, Tennessee or Southeast Asia, Grace employees stepped forward with donations of money, materials and, most importantly, their hearts, hands and energy to help affected communities get back on their feet again. It is humbling to watch our people come together in this way, not because their managers told them to, but because it’s the Grace way.

Before closing, I wanted to update you on the status of our Plan of Reorganization under Chapter 11 of the Bankruptcy Code. On January 31, 2011, our Plan was confirmed by the Bankruptcy Court; it will now be considered by the U.S. District Court, the next step in the legal process before we may emerge with the cloud of asbestos liability removed. This is a major step in our bankruptcy proceedings. We look forward to completing the process as quickly as possible.

Much has changed over the last two years because of global market conditions. Yet, in some respects, nothing has changed. We still believe that safety comes first and we are doing a better job at looking out for each other. Our customers around the world still bring us their problems to solve. We have stayed true to our vision, purpose and values. We are just as focused as ever on being the world’s premier specialty chemicals and materials company. Our purpose, to do everything we can to help our customers, still drives us. Our values continue to unite us, whether we are in Dammam, Buenos Aires or Baltimore. Unknown challenges lie ahead for sure, but with our common vision, purpose and values guiding us, we believe we are well positioned to continue enriching lives, everywhere!

Sincerely,



Fred Festa
Chairman, President and Chief Executive Officer

In its simplest form, sustainability at Grace is about maximizing our **growth** while minimizing our impact on the environment and **enhancing** lives.

It is about the programs we have in place to ensure the safety of our employees and others who work or live near our plants. It is about putting innovative products in the market that our customers can use safely while achieving their sustainability objectives. It is about giving back to the communities in which we live and work. And, it is about understanding how we can better manage and minimize our environmental footprint.

As part of our overall sustainability strategy, we announced in 2010 that Grace has targeted reducing the energy intensity of our operations by 20% per pound of production by 2017 off of the 2007 base year.

Sustainability Performance

Through 2010, discrete energy reduction projects contributed to our goal in our most energy intensive businesses. However, we did not make as much progress as expected—primarily due to reduced production volumes.



At the site level, however, we made significant progress at many locations and were recognized in 2010 with the Energy Saver Award from the U.S. Department of Energy for our facility in Alabama. We also received the Responsible Care® Energy Efficiency Award

from the American Chemistry Council for our plants in Louisiana and Maryland for the second consecutive year.

We know that our customers are equally aggressive in trying to reduce their environmental footprints and we are focused on ways that we can help. For example, we are working to develop technologies to upgrade bio-oils into gasoline, diesel and jet fuels. This work earned a grant of up to \$3.3 million from the U.S. Department of Energy in 2010 and is one component of our larger, global efforts.

Grace is committed to continue working towards our sustainability goals, as well as those of our customers, as we believe doing so will drive innovation and productivity, and enhance our collective stewardship of the environment.

Grace-sponsored teachers attending a sustainability training workshop in Colorado



More information on our sustainability and environment, health and safety performance for the years 2008 through 2010 is available on our web site, www.grace.com, in the "About Grace" – "Environment, Health and Safety" section.

Our safety goal is extremely simple: no one should ever get hurt. The **health** and **safety** of our employees and their families, our customers, and the communities in which we work are among our most critical concerns.



Employees in Sorocaba, Brazil during a stretching exercise

Back in 2006, Grace began the global rollout of our Environment, Health and Safety (EHS) Management System that provides an organized approach to managing all EHS aspects of our business. These aspects include the health and safety of our employees, cyber and physical plant security, the safe use of our products and minimizing our impact on the environment.

The process of implementing the Grace EHS Management System at a particular site is lengthy and can require the efforts of dozens of people, if not more, but the system is worth the effort. In 2010 alone, we secured third-party certifications at six facilities in six different countries. Our sites are in locations as diverse as Peru and Poland, but they have

the same framework and EHS dedication. Since we began the process five years ago, 45 of our sites have successfully earned the certification.

Lead With Safety

In 2010, we put emphasis on “Lead with Safety” as a company philosophy of engaging employees to talk openly about safety with each other and their supervisors, and accept personal accountability for safety. This work helps us create a company culture of speaking up if we see an unsafe action or situation. In 2010, 290 safety observation reports were filed by employees, the highest level in many years. The observations can be small

ones, such as noting a walkway that has a tripping hazard, but all are opportunities to address a situation before anyone is injured. That approach helped 71 Grace sites in 28 countries surpass 12 months or longer without a workplace injury last year.



Safety Performance

	2010	2009	2008
Recordable Incidents	52	44	60
Lost Workday Cases	13	16	11
Lost Workdays	299	653	185
Recordable Incident Rate	0.89	0.70	0.91
Lost Workday Incident Rate	0.22	0.25	0.17

Research & Development

Innovation keeps us at the **forefront** of our industry. Around a third of Grace's annual sales come from products introduced in the past five years. To achieve these results, we are continuously striving to **develop** the next generation of products that can **enrich lives**.

Our products are used by millions of people, either directly or as part of our customers' products, each year. In 2010, we invested \$60 million in R&D activities and launched many new products that help make better tasting foods, new medications, cleaner fuels and safer and more durable buildings. To meet these important needs, our employees must be innovative.

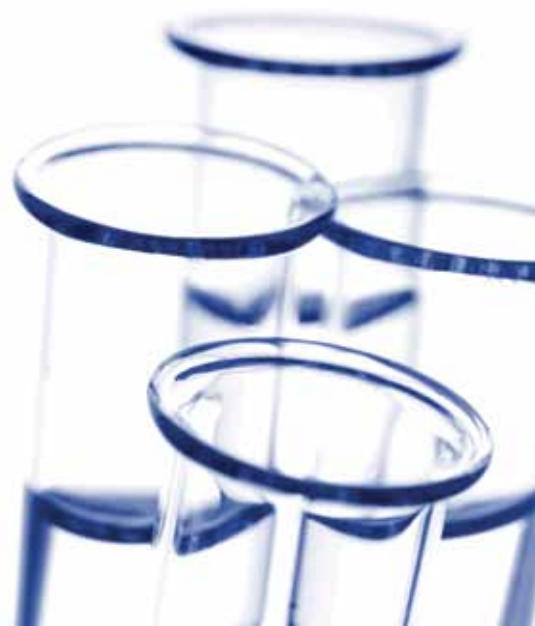
Of particular distinction is the ALCYON™ catalyst used to maximize the conversion of crude oils into transportation fuels. Several patent applications are pending and once finalized will join the existing 1,718 active global patents held by Grace.

For their work, the ALCYON™ catalyst development team was named Top Innovator of the Year by the business journal *The Daily Record*. We have long known that our R&D community is one of the best in the world and were thrilled when this review committee and others selected Grace products for special distinctions in 2010.

The ALCYON™ catalyst is just one recent example of our efforts to help customers maximize the production of valuable materials while reducing operating expenses, which is critical in today's business climate.

This innovative spirit extends to our manufacturing facilities where employees use their Six Sigma training and their creative thinking to optimize equipment performance and reduce natural gas and electricity usage. Employees' innovation is a win-win for everyone involved. As a company, we are reducing our environmental footprint and helping the bottom line.

We also fund programs that support the next generation of researchers. One outreach is our \$105,000 chemistry fellowship with the University of Maryland Baltimore County (UMBC). The investment in future scientific leaders helps Grace as a member of the global community—as we need future researchers, engineers and technologists to join us in developing the next generation of products to benefit us all.





Grand opening of new manufacturing facility near Hanoi, Vietnam

Our business development activities intensified in 2010 as we pursued investments in **high-margin, high-growth** businesses and regions.

Our strong preference has been for bolt-on acquisitions with clear synergies that generate product or geographic expansions, especially in emerging regions. Our emerging region businesses continue to be a source of significant sales growth—sales volumes were up approximately 13% in 2010 compared to 2009. Sales to emerging regions represented 33% of our total sales last year—a new record—up from 29% in 2009. Earlier investments are paying off by increasing our growth rates.

Manufacturing

To expand our construction products capabilities, we made acquisitions in Asia Pacific and Latin America, regions that grew despite the global downturn. In central China, we acquired a manufacturer of customizable, fit-for-use waterproofing

membranes, materials and compounds, while in Brazil, we acquired assets of a Rio de Janeiro manufacturer of specialty construction chemicals. This acquisition better positions us to participate in infrastructure projects related to the 2014 World Cup and 2016 Summer Olympics.

We also entered into a joint venture with a Saudi investment and development company. Through this joint venture, we opened a new manufacturing facility for construction products in Dammam and quickly began working to open a second site in Jeddah.

And, our purchase of a manufacturer of fine chemicals headquartered in the United States enabled us to immediately expand our manufacturing capabilities for specialty single-site and polypropylene catalysts

used to make plastics, and to further extend our discovery sciences offerings in the pharmaceutical sector.

Technology

These investments expanded our manufacturing reach. To extend our technological capabilities, we finalized the purchase of a manufacturer of devices, sensors and other technologies that assist concrete producers in measuring concrete consistency during transport to job sites.

In the past decade, Grace has completed more than two dozen strategic acquisitions for a collective investment of almost \$300 million. We will aggressively work to identify additional opportunities that provide the greatest potential benefits to our customers and our financial results.

Growth

We shipped products and samples to customers in 141 countries in 2010, and made **significant** investments in our manufacturing facilities to maintain and **grow** our worldwide reach.

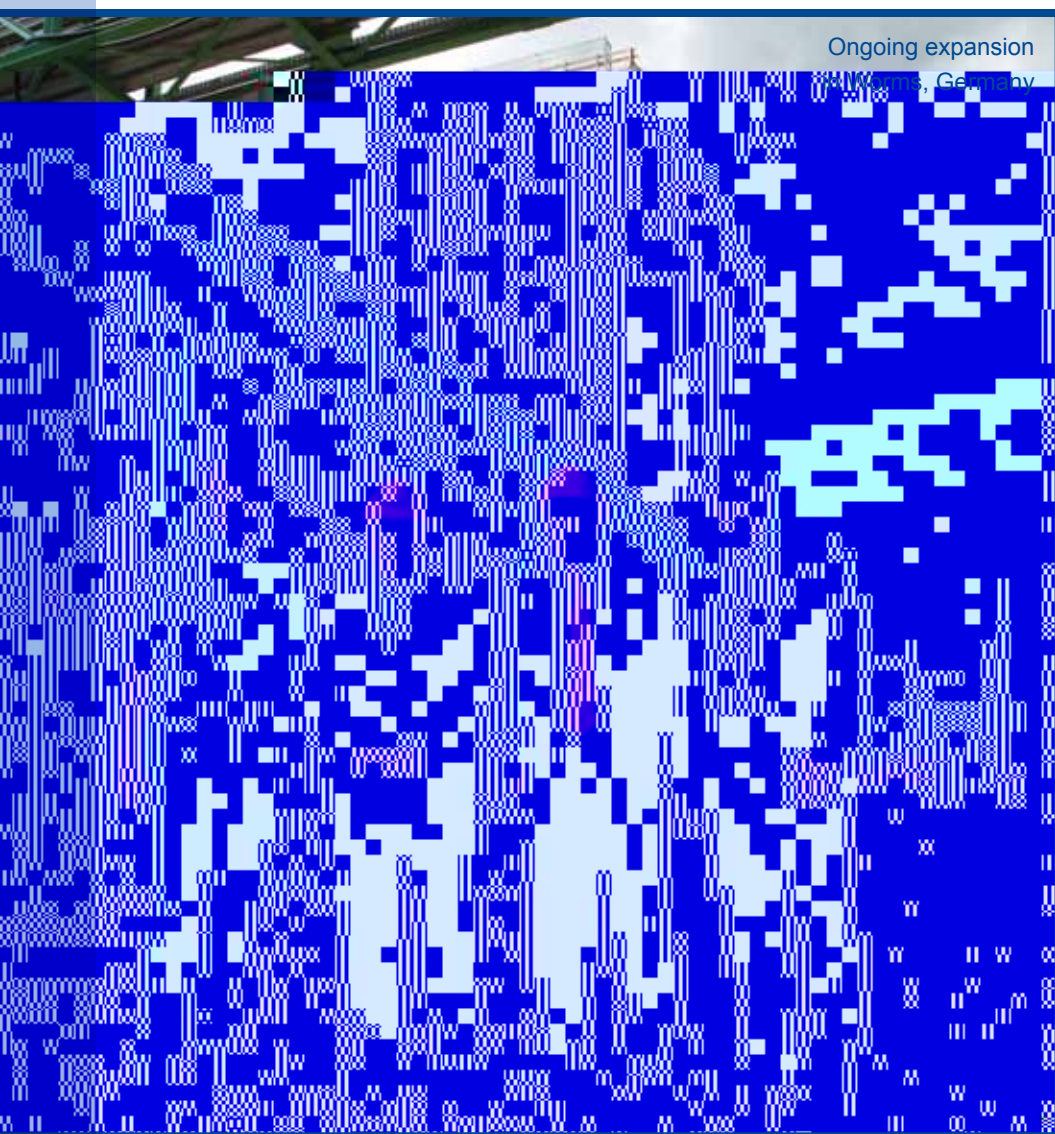
improve the quality, strength, durability and appearance of concrete. These investments enable us to better serve our construction customers and elevate our brand visibility.

Expansions

In Worms, Germany, we continued the construction of a new plant that will manufacture polypropylene catalysts used in the production of plastics. We expect this multi-million dollar investment to be operational in 2011. In addition, we brought a new recovery unit online in 2010 that captures ammonia used in our manufacturing processes and returns it back to the plant, aiding in our sustainability efforts.

In Kuantan, Malaysia and Sorocaba, Brazil, we began to expand our manufacturing facilities for greater production of silica gel products. Grace's TriSyl® silica gel is used by customers to remove contaminants from natural oil feedstocks more efficiently. Our silica gels also are used in the renewable fuels industry, particularly for biodiesel. We expect production at both facilities to begin in the second half of 2011.

Since the company's founding in 1854 in Peru, Grace has consistently pursued new markets, growing the company from its initial foothold in Latin America to our current operations in more than 40 countries. We will pursue further investments so we have resources where our customers need them.



Grand Openings

We expanded our manufacturing network with the opening of new facilities for concrete admixtures and cement additives in Epping, Australia; Chongqing, China;

and Hai Duong, Vietnam. Our additives are used by cement producers to improve grinding efficiency, enhance the quality of cement, and reduce energy consumption and carbon dioxide emissions. Our admixtures

Leadership Team

D. Andrew Bonham
Vice President, W. R. Grace & Co.
President, Grace Construction Products

William M. Corcoran
Vice President, Public and Regulatory Affairs
W. R. Grace & Co.

Fred E. Festa
Chairman, President and Chief Executive Officer
W. R. Grace & Co.

J. P. "Butch" Forehand
Vice President, Operations
W. R. Grace & Co.

Gloria L. Keesee
Chief Information Officer
W. R. Grace & Co.

Hudson La Force III
Senior Vice President and Chief Financial Officer
W. R. Grace & Co.

W. Brian McGowan
Senior Vice President
W. R. Grace & Co.

Gregory E. Poling
Vice President, W. R. Grace & Co.
President, Grace Davison

Mark A. Shelnitz
Vice President, General Counsel and Secretary
W. R. Grace & Co.

Pamela K. Wagoner
Vice President and Chief Human Resources Officer
W. R. Grace & Co.

Board of Directors

John F. Akers*
Retired Chairman and Chief Executive Officer
International Business Machines Corporation

H. Furlong Baldwin*
Retired Chairman of the Board, President and
Chief Executive Officer
Mercantile Bankshares Corporation

Ronald C. Cambre*
Retired Chairman of the Board and Chief Executive Officer
Newmont Mining Corporation

Fred E. Festa
Chairman, President and Chief Executive Officer
W. R. Grace & Co.

Marye Anne Fox*
Chancellor
University of California San Diego

John J. Murphy*
Retired Chairman of the Board and Chief Executive Officer
Dresser Industries Inc.

Christopher J. Steffen*
Retired Vice Chairman
Citicorp and Citibank N.A.

Mark E. Tomkins*
Retired Senior Vice President and Chief Financial Officer
Innovene

Thomas A. Vanderslice*
Retired Chairman and Chief Executive Officer
M/A-COM, Inc.

* Also serves on Audit, Nominating and Governance, Compensation, and Corporate Responsibility Committees

Investor Information

Transfer Agent

Inquiries and changes to shareholder accounts should be directed to our transfer agent:

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c/o BNY Mellon Shareowner Services
P.O. Box 358015
Pittsburgh, PA 15252-8015
+1 800.648.8392 or +1 201.680.6578
www.bnymellon.com/shareowner/isd

Investor Relations

Inquiries from shareholders and requests for the company's securities filings should be directed to:

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Our Vision

Grace strives to be a premier specialty chemical and materials company. We provide innovative technologies and value-added products and services around the world to enhance the quality of life.

Our Purpose

We are dedicated to our customers. They trust us to provide products, knowledge, technologies, services, and the people to make their products work better.

Our Values

Teamwork

Treat others with respect.
Work safely and effectively with each other to win in the marketplace. Communicate openly and candidly.

Performance

Provide products and services that will make our customers successful.

Integrity

Maintain and expect the highest level of ethical behavior.

Speed

Move quickly to seize advantages in the marketplace. Anticipate market shifts and respond before our competitors.

Innovation

Encourage people to constantly look for new ways to create value.

The logo for Grace, featuring the word "GRACE" in a bold, green, sans-serif font. The letters are closely spaced and have a slight shadow effect.

Enriching Lives, *Everywhere.*®