

# Essential Chemistry

**An Interview with Jack N. Gerard, President and Chief Executive Officer, American Chemistry Council, Arlington**

**EDITORS' NOTE** *Prior to joining the American Chemistry Council in July 2005, Jack Gerard served as President and Chief Executive Officer of the National Mining Association. Earlier in his career, Gerard was a founding partner, Chairman and Chief Executive Officer of McClure, Gerard & Neuenschwander, Inc., a Washington, DC-based government-relations consulting firm. Prior to that venture, he spent close to a decade working in the U.S. Senate and House of Representatives. Gerard is also the recipient of a B.A. in political science and a J.D. from George Washington University.*

**COUNCIL BRIEF** *The American Chemistry Council (ACC) represents the leading companies engaged in the business of chemistry, who apply the science of chemistry to make innovative products and services that make people's lives better, healthier, and safer. ACC's mission is to deliver business value to its members through exceptional advocacy, based on enhanced member performance, high-quality scientific research, communications, effective participation in the political process, and a commitment to sustainable development through member contributions to economic, environmental, and societal progress. ACC ([www.americanchemistry.com](http://www.americanchemistry.com)) is committed to improved environmental, health, and safety performance through its Responsible Care® advocacy program, designed to address major public policy issues, and health and environmental research and product testing.*

## How do you plan to build upon the public's awareness of the chemical industry?

We are working to improve public awareness of chemistry and our industry, particularly in public policy forums. We have recently launched the essential<sub>2</sub> campaign, a multi-million dollar public education effort to begin a dialogue with the general public about the importance of chemistry in our daily lives. Chemistry makes our lives better, safer, and more

convenient, and communicating that message is a priority for the ACC.

## How did the leading companies in the chemical industry come together via ACC to get that message out?

The American Chemistry Council's member companies include well-known global players that have made significant investments in their own brands and reputations. They understand the importance of a positive image, and they work hard at it. The essential<sub>2</sub> campaign is one of the few times that the industry has come together collectively through its trade association and said, "In addition to our individual brands, we need to be looking at the general image of our industry." The industry asked itself, "How does the public perceive the business of chemistry? Do they truly understand the importance of chemistry to their everyday lives and to the economy?" Together these companies recognized that improving public appreciation for the industry could improve the business environment for chemistry, so they made a collective decision to invest in this campaign.

## How do you inspire incredibly busy CEOs and other executives to dedicate their time to the organization?

I have been very impressed with the personal commitment these industry leaders make to developing and advancing a collective agenda for the industry, particularly as this effort competes with the time they have to spend on multi-billion dollar deals and shareholder satisfaction. When we have a board meeting or a committee meeting, they all participate. So I've been pleased and, frankly, impressed that they've recognized the importance of advancing a public policy agenda to running a productive business. Our CEOs appreciate that reducing the regulatory burden imposed on chemistry companies can add value to their bottom lines. So we have a very active group.

## What are ACC's key initiatives for the coming years?

We have a number of pressing issues before us. In the U.S., we are focused on two key areas: energy policy and chemical facility security. In the energy arena, we have seen the price of natural gas shoot

through the ceiling in recent years, and it has taken an exorbitant toll on our sector. Improving U.S. energy policy, particularly with regard to natural gas, is a key priority for us. We are working hard to call attention to this issue with Congress and the Bush administration. We're spending time to not only educate public policy makers, but also help them understand the implications of a failed energy policy. So energy is a top priority right now. The second area we're focused on is chemical plant security. Post 9/11, we live in a new world, and the U.S. chemical industry is a target of some hostile interests. Our industry has voluntarily spent close to \$3 billion to upgrade the security operations at its facilities, and as an industry – as a business community – we are asking Congress to impose further standards and regulations for chemical plant security. Those standards, if imposed, will require all chemical plants, not just our member companies' facilities, to operate at more secure levels.

## Has the working relationship between industry leaders and government officials been effective?

That's a relationship that we continue to strengthen. We see our role as one of ongoing education on our industry's critical issues. Elected officials today must deal with everything from social interests to health care to fundamental economics. Our industry leaders determine their public policy priorities through participation in the trade association, then ACC works to educate government officials about the impacts and implications of those policies, advancing policies that are in our best interests. Our goals seek to improve the business environment for the chemical industry, but they are in the public's interest as well. At the end of the day, what is good business for the chemical industry is good business for America. We're striving hard to keep that standard.

## Even though ACC is an American organization, are you operating on global basis?

The American Chemistry Council's primary mission is advocacy, whether it's at the state, federal, or global level. On the global level, we primarily operate in coordi-

nation with our sister organizations in Europe, Japan, and China, for instance. ACC also chairs the International Chemical Council Association, in which a variety of other national organizations come together under a single umbrella to work collectively. It's important that we manage our public policy issues in a global context.

### **Exactly how do you define the chemistry industry?**

The business of chemistry is a very broad, \$550 billion industry that impacts our daily lives in a variety of ways. For instance, 96 percent of all manufactured goods in the United States have some

move overseas? If the latter, we'll lose great talent to the rest of the world. Occasionally we see a ray of hope. Congress, the Bush administration, and others have, on occasion, commissioned a special task force to look at these questions, and there's currently debate in Congress. We will do all we can as an industry to fuel that debate and that discussion, because when people begin to recognize the ripple effects fundamental policy decisions have on our economy, they begin to scratch their heads and say, "We should preserve this base industry." It's important that we advance our students in the area

Because they do a lot of business with each other, they have great relationships, and it's much easier to come to consensus. They are competitors in one sense, but in another sense, they're business partners. And these relationships exist all across the industry. So it makes it easier for us to come together as a sector and make timely decisions about collective positions to advance the interests of the industry as a whole. Nobody gets their way 100 percent of the time, and occasionally we have to sacrifice one company's interest for the collective good. But to date, our members have been very responsive in doing that. And we're thrilled that we're able to focus all of our energy, activity, and resources on those public policy forums where we can make a difference and advance good public policy.

### **Your time is pulled in a number of different directions, but what are your key focuses?**

Trade associations are perhaps a hybrid of business and bureaucracy. I strive to make ACC more businesslike and less bureaucratic. In some associations, every member has a veto, and therefore, unless you have 100 percent consensus, nothing moves forward. We're driving the American Chemistry Council in the opposite direction. We believe we can step forward and lead the issues. We can provide expertise and resources to advance our companies' business interests, and at the same time, allow the companies to do what they do best – deliver shareholder value and stay focused on business. So we're driving the strategy and approach, and our members become the correction in the process. We're not waiting for instructions; rather, we are moving forward while looking to our members for guidance along the way.

### **Corporations look to their bottom lines to evaluate their performance. How do you define the success of a trade association like ACC?**

The metrics in trade associations are more difficult to measure than those of standard businesses, but I believe there is a business model that can be imposed on a trade association. And while those metrics are more difficult to describe or create, it can be done. You can't quantify the value of public policies to the industry. If we are successful in achieving a sensible energy policy in this country that brings natural gas prices down to historic levels, so we can continue to operate without hemorrhaging jobs and opportunities in the United States, that will deliver a huge bottom-line value to companies. That's not a selfish interest for the chemical sector. It's in the best interest of the United States. It's in the best interest for global activities that prosper, thrive, and benefit from the business of chemistry. ●



*Jack N. Gerard at the New York Stock Exchange*

component of chemistry, and chemistry directly employs close to a million people. We touch close to 26 percent of the entire domestic economy. People don't always think about it, but the plastics in your cars that make them more fuel-efficient, the medicines we take that improve health and extend life, and the clothes we wear all tie back to the business of chemistry. It's essential to everything we do and the standard of living we enjoy. Chemistry is essential to our economy and to business in this country – various industries are wholly dependent upon our success. So we are a critically important industry for our society, and it's important that people begin to understand that.

### **How can the United States ensure that enough talent is cultivated to continue running the domestic chemical industry?**

From the United States' perspective, that's a serious concern. How can we attract the country's top talent to the business of chemistry? I believe we're at a point of transition. The United States has to decide whether we are serious about securing a strong domestic manufacturing base, which is dependent upon a solid foundation of chemistry, or are we willing to let our industries, including chemistry,

of the hard sciences, so they understand the business of chemistry and the implications it has on our economy and country as a whole.

### **How does chemistry impact the development of new technologies?**

We, as an industry, will develop many of the cutting-edge technologies that will take us into the future. One out of every eight patents issued in the U.S. is generated by our industry. Even iPods and computers are just machines created from silicone wafers, which in turn are products of chemistry. Innovation has always been at the core of the chemical industry, and it will continue to be in the future. Technological advances based in chemistry drive the development of new technologies and make possible many of the things we take for granted in modern society.

### **In an industry where there's a competitive marketplace, time is of the essence. Can you really provide that unifying voice and be that spokesman for those who need it?**

Yes, absolutely, although it's not always easy. One of the things that impresses me about the business of chemistry is that the leaders in this industry are no-nonsense. They are focused on results.

# Leading the Specialty Chemical Space

An Interview with Robert Wood, Chairman, President, and Chief Executive Officer, Chemtura Corporation, Middlebury, Connecticut

**EDITORS' NOTE** Prior to joining Chemtura's legacy firm Crompton Corporation in 2004, Robert Wood spent 27 years with the Dow Chemical Company, serving most recently as Business Group President for Thermosets and Dow Automotive (2000 to 2004) and, before that, in a number of executive roles in human resources and sales and marketing. The recipient of a bachelor of arts degree in history from the University of Michigan, Wood serves on the Boards of Directors of the Jarden Corporation and Praxair Inc., and is past Chairman of Big Brothers Big Sisters of America.



Robert Wood

As a result, we've been bringing some new blood into the company, and that is helping us develop our new culture.

## What is your outlook for Chemtura's growth?

Our operations encompass a range of businesses, including crop protection; petroleum additives; flame retardants; plastics additives; consumer products, which are primarily pool chemicals and household cleaners; urethane

additives; and rubber chemicals and EPDM [ethylene propylene diene monomer]. So we have a pretty broad presence in a wide range of industries and markets. We've seen strong growth across the entire range, although, inevitably, some segments of the business grow faster than others. Those are the areas on which we want to focus most of our activity going forward.

## How large a role does acquisition play in your growth strategy?

Acquisition has always been an important part of our strategy, and it will continue to be, but on a very selective basis. We look for markets where we have a competitive advantage, where there's fairly low competitive intensity, and where the business or markets are growing faster than GDP.

## What global markets are the most promising?

We believe that there's a significant amount of opportunity in the former Soviet Union and in Asia. For our businesses, being first in the former Soviet republics is an advantage, and we're working very hard to get ourselves established there.

## The chemical industry is not often thought of as "sexy." Are you able to attract and retain the talent you need?

For our headquarters-staffing efforts, we are concentrating our efforts on people who are familiar with the Northeast, as there is a perception that life is more expensive here. We have beefed up our recruiting staff and soon will have a more robust campus recruiting program.

From an industry point of view, I think one of the real positives of the

essential<sub>2</sub> campaign, which is run by the American Chemical Council [ACC], is that it gives us an opportunity to talk more about the importance of chemistry and the chemical industry. In the long run, I think this will help us to attract more top talent. I have believed for a long time that it's essential for us to run a campaign like this. Until recently, we have allowed people to paint their own picture of what the chemical industry is like: who we are and what we do. If we don't tell our own story, we're going to greatly limit the impact that we're able to have on society, and the ability of our industry to continue growing. Pointing out the essential nature of what we do as an industry, and educating people about the enabling technologies that we provide, are critical to our ability to continue making those contributions.

## Broadly speaking, how effective is the ACC in speaking out on behalf of the industry?

As with many things, none of us is as strong by ourselves as all of us working together. The progress that the ACC has made over the last year is pretty remarkable. I think it has been terrific, and its advocacy efforts will continue to pay dividends as we go forward from here.

## You spent 27 years with Dow Chemical Company before you moved to Crompton Corporation in 2004. Why did you think that was the right move for you at that time?

I made the move because I wanted to be a CEO, and I knew I wasn't going to be CEO of Dow Chemical, after the succession process had settled. I believed that Crompton offered a great opportunity to turn around a company that had done very well in the past but whose performance was now lagging. The merger with Great Lakes to form Chemtura came in my second year, a little bit earlier than we had anticipated. Melding those two companies together, and making Chemtura the sort of high-performance company we want it to be, has turned out to be a little bit bumpier than I expected, but I have huge optimism for the future. I fully believe that what we thought we could achieve, we will achieve. ●

**COMPANY BRIEF** Formed in July 2005 via the merger of Crompton Corporation and Great Lakes Chemical Corporation, Chemtura Corporation ([www.chemtura.com](http://www.chemtura.com)) is one of the largest publicly traded specialty chemicals companies in the United States and a leading producer and marketer of plastic additives. With more than 6,500 employees in research, manufacturing, sales, and administrative facilities in every major market of the world, Chemtura (NYSE: CEM) reported pro forma sales of \$3.9 billion in 2005.

## Chemtura Corporation was formed a year ago, upon the merger of Crompton Corporation and Great Lakes Chemical Corporation. How much progress have you made on integrating the two cultures?

A merger is always challenging, but I feel pretty good about everything we've accomplished over the past year. We've brought together businesses and functions, created Process Excellence teams that have made great progress in improving processes through the organization, merged and improved our information systems, and earnestly began developing our own corporate culture. My biggest regret is that we had difficulty getting people to move from the Midwest, where Great Lakes was headquartered, to the East Coast, because of the cost of living.

essential<sub>2</sub>America

SPECIAL REPORT

American  
Chemistry  
Council

# A Diversified Chemical Company

An Interview with Gary Cappeline, President and Chief Operating Officer, Chemical Sector, Ashland Inc., Dublin, Ohio

**EDITORS' NOTE** After joining Ashland Inc. in 1974, Gary Cappeline held positions of increasing responsibility, rising to Group Vice President of Ashland Specialty Chemical in 1993. He joined Englehard Corporation in 1997, as Group Vice President of Pigments and Additives, and subsequently served as President of Allied-Signal's specialty chemical company and as a chemical industry partner for Bear Stearns. Cappeline returned to Ashland in December 2002, as President of Ashland Specialty Chemical. He was named President and COO of Ashland's Chemical Sector in February 2004, which includes responsibilities for Ashland Distribution, Ashland Specialty Chemical, Valvoline, and shared service centers in Europe and China. The recipient of a bachelor's degree and a master's degree in chemical engineering from the City College of New York, Cappeline holds an advanced management certificate from Harvard Business School and undertook postgraduate studies at Indiana University. He is a member of the board of the American Chemistry Council and chairs the board's committee on communications.



Gary Cappeline

**COMPANY BRIEF** Headquartered in Covington, Kentucky, Ashland Inc. (NYSE: ASH), is a diversified global chemical company, with holdings in transportation construction. It provides innovative products and services through four wholly owned divisions: Ashland Paving And Construction (APAC®), Ashland Distribution, Ashland Specialty Chemical, and Valvoline. A Fortune 500 company, Ashland Inc. ([www.ashland.com](http://www.ashland.com)) operates throughout the United States and in more than 100 countries around the world.

**What services does Ashland provide within the chemical sector, and what is your growth outlook?**

Approximately three-fourths of Ashland's \$9.3 billion in total revenues last year was derived from our chemicals businesses. Our Chemical Sector comprises three busi-

nesses: Ashland Distribution, a chemicals and plastics distribution business; Ashland Specialty Chemical, which manufactures and sells high value-added products and provides technical services to help in their application; and Valvoline, our branded motor oils and car-care products business. We think all of these segments will grow, particularly outside the more mature markets of North America and

Western Europe. We are putting a lot of emphasis on the faster-growth regions of the world, concentrating on the BRIC nations – Brazil, Russia, India, and China. We want to make sure that we have the right value proposition in those regions, from the ability to manufacture and distribute products, to the ability to provide technical services to our customers.

Ashland Distribution is already number one in the world for plastics distribution, but we want to grow even bigger, so we're widening the scope of the services we offer. Valvoline is expanding its non-lubricant car-care products, such as appearance products. A recent example is the introduction of AroMetrics, an air-freshener system for vehicles. We have recently purchased a company called Car Brite, which makes automotive appearance products.

Ashland Specialty Chemical is focusing its growth efforts on water treatment and adhesives. We recently bolstered our water-treatment business significantly through two acquisitions. One was a Chinese water-treatment company, based in Nanjing, which provides us with a great platform from which to serve the fast-growing Chinese market. The other was Degussa's water treatment business, based in Krefeld, Germany, with approximately \$250 million in revenue. That will improve our ability to compete globally, because Degussa has manufacturing facilities in three of the four BRIC nations: Brazil, Russia, and China.

**The chemical industry is not considered one of the world's most exciting industries, and many people**

**are not aware of how much it touches their lives. Should the industry be doing more to raise its profile?**

I certainly believe that public awareness about what the industry does is insufficient. I'm a board member of the American Chemistry Council [ACC], which has recently launched an educational campaign called "essential<sub>2</sub>" to fill this knowledge gap. For a long time, the industry has spent a lot of money doing the right thing; making sure that our plants are safe and secure and reducing emissions. All those things are worthwhile. But we haven't told the story properly and that's what the essential<sub>2</sub> campaign is all about: conveying how valuable the American chemistry industry is to our economy, to the health and safety of our families, to other U.S. businesses, and to the creation of the next generation of products, both within the chemical industry and outside it.

**In your role at the ACC, you're responsible for the communications efforts associated with this campaign. How will you find the time for this, considering the extent of your current responsibilities?**

I have been a part of this industry for 30 years, and I have a lot of passion for it. I also have a lot of conviction that we do the right thing every day. So when I was asked to take on this role, I was willing and ready to do so, because I think that this story has to be told.

**What has kept you in this industry for 30 years?**

I'm a chemical engineer, so I made a choice relatively early in life to go into this industry. One of the reasons I find the industry so fascinating is that an understanding of chemistry, and an understanding of the innovation that chemistry can bring, is really an understanding of life itself. Every product we touch – from the telephone, which was invented more than 100 years ago, to the ubiquitous Blackberry, which was invented a few years ago – is based on chemistry. Understanding how chemistry works and how it can create value is a fascinating subject. It has fascinated me since I was in high school, and it continues to fascinate me today. ●

# Tomorrow's Technologies

An Interview with Nance Dicciani, President and Chief Executive Officer, Honeywell Specialty Materials, Morristown, New Jersey

**EDITORS' NOTE** Prior to assuming her current posts, Nance Dicciani served as Senior Vice President and Business Group Executive of Chemical Specialties and Director, European Region, of Rohm and Haas, which she joined in 1991. Before that, she spent 14 years with Air Products and Chemicals, Inc., where she held positions of increasing responsibility in research, engineering, and research management. The recipient of a B.S. degree in chemical engineering from Villanova University (Pennsylvania), an M.S. degree in chemical engineering from the University of Virginia, a Ph.D. in chemical engineering from the University of Pennsylvania, and an M.B.A. from the Wharton School of the University of Pennsylvania, Dicciani was appointed by President George W. Bush to the President's Council of Advisers on Science and Technology. She additionally serves on the executive committee of the American Chemistry Council and chairs the board research committee.



Nance Dicciani

**COMPANY BRIEF** Honeywell Specialty Materials ([www.honeywell.com/sites/sm/Specialty\\_Chemicals.htm](http://www.honeywell.com/sites/sm/Specialty_Chemicals.htm)), based in Morristown, New Jersey, is a \$4.5-billion, global company, providing customers with high-performance specialty materials, including fluorine products; specialty films and additives; advanced fibers and composites; intermediates; specialty chemicals; electronic materials and chemicals; and technologies and materials for petroleum refining. With nearly 10,000 employees and 80 manufacturing and sales facilities, the business serves diverse market segments including petroleum refining, construction, semiconductor manufacturing, health care, body armor, and agriculture.

## What role does your company play within the chemical industry?

We've been in existence, under one name or another, for about 85 years, and over that time, we've created products that typically build more comfortable and

energy-efficient homes, protect our military troops in the field, provide new technologies to make petroleum refining more efficient, and help grow more robust and plentiful crops. In addition, we make products that contribute to public safety and make electronic devices better. So we are in what I would call "tomorrow's technologies" – we're not in the basic chemical business.

## How competitive are your markets? How do you show what makes Honeywell unique?

We develop and create new products, and in many cases, we create new markets. Our differentiation is based on products that are usually protected by intellectual property law. For the most part, we don't make high-volume products, and, as I mentioned, we have moved away from basic chemical businesses. That means we have significantly decreased our dependence on the hydrocarbon cycle over the last four years.

## Is your business global?

Yes. In fact, some of our highest growth rates are in the Middle East, India, and China. The Chinese market is particularly important. It already represents some 20 percent of the world's population, and its growth rate is phenomenal. The chemical industry is expected to grow faster there than just about any other place in the world. In many ways, India is the same. Many people now recognize that India can be a truly global player. It's also a large market with a growing economy, and whenever you have economic growth, you have chemical growth, because chemistry touches virtually every industry sector.

## Chemistry impacts so much of people's everyday lives, but is that message understood among the general public? Could the industry be doing more to promote itself?

The chemical industry is underestimated, under-recognized, and frequently misunderstood, but we are doing our best

to correct that. The American Chemistry Council is promoting not only the essential<sub>2</sub> campaign, but also a range of other issues, such as energy conservation, energy development, and the availability of natural gas. We're also promoting chemical plant security. We'd like to see legislation in that area, because we believe that every chemical company should be held to the same standards.

In all these areas, we have a lot of work to do. There's a high degree of misunderstanding associated with chemicals, which we need to address. While not all chemicals are benign, if they are used in the appropriate way, the benefits far outweigh the risks. We need to talk to people about the associated risks and benefits, as opposed to the inherent hazards.

## Are you happy with the company's ability to attract and retain talent?

Yes, we run some absolutely terrific community and education programs. For instance, we have something called FMA Live!, which is an interactive hip-hop program that travels around the country explaining to kids how science and technology impacts their world. However, it is apparent that the industry is not doing as good a job as it needs to do in attracting young people into the engineering sciences in this country.

## What attracted you to the chemical industry?

What attracted me most to this industry is what still excites me and keeps me in it. It is the fact that this industry, probably more than any other, makes a difference. Not only do we make a big difference today, but we will also impact the future more than any other industry. To me, that's pretty exciting.

I also appreciate the multifaceted aspects of the industry. We don't make just one kind of widget. We do so many different things with so many new technologies and breakthrough capabilities, whether it's a low-global-warming refrigerant or a new high-strength fiber for use in our body armor to protect soldiers in the field. It doesn't get much more exciting than that. ●

essential<sub>2</sub>America

SPECIAL REPORT

American  
Chemistry  
Council

# Building Performance Products

An Interview with Jeffrey M. Lipton, President and Chief Executive Officer, NOVA Chemicals Corporation, Moon Township, Pennsylvania

**EDITORS' NOTE** After a 29-year career with DuPont, during which time he served as Vice President of the corporate plans, polymer products, and medical products divisions, Jeff Lipton moved to NOVA Corporation as Senior Vice President and Chief Financial Officer in 1993. He became President in 1994 and a Director in 1996. In July 1998, he was appointed to his current role as President and CEO of NOVA Chemicals Corporation.



Jeffrey M. Lipton

The recipient of a bachelor of chemical engineering degree from Rensselaer Polytechnic Institute and an M.B.A. from Harvard University, Lipton additionally serves as Chairman and Director of Trimeris, Inc.; Director of Hercules Incorporated; and Chairman of the American Chemistry Council, among other professional affiliations.

**COMPANY BRIEF** Incorporated in Canada and with executive offices in suburban Pittsburgh, NOVA Chemicals Corporation ([www.novachem.com](http://www.novachem.com)) produces plastics and chemicals that are essential to everyday life, focusing on two product lines for the industrial and consumer markets: ethylene/polyethylene and styrene/polystyrene. Employing 3,600 people around the world, NOVA Chemicals Corporation (NYSE: NCX, Toronto: NCX) reported sales of \$5.6 billion in 2005.

## What are the principal features of NOVA's business, and what are your prospects for future growth?

We are a relatively straightforward, medium-sized, plastics and chemicals company. We have two basic product lines – styrene and polystyrene, and ethylene and polyethylene – and that combination makes us rather unusual. Most companies choose to diversify, in order to bring stability to their businesses. Our approach is a little different in that we try to be the best in the fields in which we are already working. That involves upgrading the mix of products we sell in these two simple lines to deliver more value to our customers and more earnings

and stability for our shareholders. We've invested a lot in research and development to enable us to build what we call "performance products," and we achieve balance that way, rather than building out across a series of product lines.

With regard to future growth, the market for ethylene and polyethylene is moving into a period when the supply-and-demand balance will be in the producer's

favor. As a consequence, we expect margins to expand and stay strong for a relatively long period of time.

## So you are not planning to expand your product line at all?

No. We believe we've got to stay highly focused. In any case, it's difficult for a company of our size to make a significant impact in any diversification efforts. If success means having global-scale facilities and the capacity to invest in research and development, then we have to focus on our existing products. Dabbling in other areas isn't going to get us there. What does get us there is providing best-in-class, innovative products that result from research and development investments in our core businesses.

## Is it difficult to keep quality high while keeping the costs low?

In our major business, which is ethylene and polyethylene, a lot of our success has to do with our geographical location. The company's origins are in Western Canada, where we can buy natural gas liquids, ethane being the most important of these, at a much lower price than they are available on the U.S. Gulf Coast. As a consequence, our average cost to make ethylene, which is the most basic of all petrochemicals, has been more than \$0.06 per pound lower than the average cost to make ethylene on the U.S. Gulf Coast. That difference is very meaningful, as it has allowed us to run the business with a very good cost structure throughout the last couple of decades. It has also enabled us to build the world's largest ethylene and polyethylene complex in Western Canada, which adds to

our ability to make products at a very low cost, because of the energy and manpower efficiency we gain from that large-scale facility. We expect this situation to continue well into the future.

## To what extent has the essential<sub>2</sub> campaign, run by the American Chemistry Council, created a sense of solidarity within the industry?

It has brought most of the industry leaders together, although we still need to convince a few people that they ought to be part of this campaign. The plastics industry recently demonstrated how effective an awareness campaign like this can be. I was Chair of the American Plastics Council for a couple of terms, and during that time we saw our communications efforts have a significant impact on the way people thought about plastics. We did a lot of market research, and we found that plastic went from being one of the least favorable of all materials to being one of the most favorable. Now, most people have no problem at all using plastics.

We're trying to bring about a similar change of perception with chemicals. It's a little harder than with plastics, because people don't always see the relationship between chemicals and the things they touch and feel in everyday life, whereas they can see that relationship with plastics. In fact, some people are very frightened when they hear the word "chemicals." They think of toxicity and risk to the environment. They don't understand the rewards. If we can get them to the point when they understand the rewards of using chemicals – and the progress our industry's products have brought and continue to bring to modern life – then they'll be more willing to listen to how well we take care of the environment, how safe we keep our workers, how concerned we are about health care, and how much research we're doing to understand the nature of our products and how they interact with humans and animals in general. Once that happens, we'll be able to attract better people to work in this industry, and we'll be able to attract more investors, which is fundamental to our future success. ●