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Chemtura CORP

Form 10-K

February 22, 2017

U.S. SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

(Mark One)

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2016

OR

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from to

Commission File No. 1-15339

Chemtura Corporation

(Exact name of registrant as specified in its charter)

Delaware

52-2183153

(State or other jurisdiction of incorporation or organization) (I.R.S. Employer Identification Number)

1818 Market Street, Suite 3700, Philadelphia, Pennsylvania 19103

199 Benson Road, Middlebury, Connecticut 06749

(Address of principal executive offices) (Zip Code)

Registrant's telephone number, including area code: (203) 573-2000

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Name of each exchange on which registered
Common Stock, \$0.01 par value	New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act: NONE

Indicate by check mark whether the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes  No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act.

Yes  No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes  No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes  No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or a smaller reporting company. See definition of "accelerated filer," "large accelerated file" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check off):

Large accelerated filer  Accelerated filer  Non-accelerated filer  Smaller reporting company

(Do not check if a smaller reporting company)

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Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes  
 No

The aggregate market value of the voting and non-voting common equity held by non-affiliates of the registrant, computed as of June 30, 2016, based on the value of the closing price of these shares as quoted on the New York Stock Exchange was \$1.6 billion.

The number of voting shares of Common Stock of the registrant outstanding as of January 31, 2017 was 63.2 million. Indicate by check mark whether the registrant has filed all documents and reports required to be filed by Section 12, 13 or 15(d) of the Securities Exchange Act of 1934 subsequent to the distribution of securities under a plan confirmed by a court. Yes  No

**DOCUMENTS INCORPORATED BY REFERENCE**

Portions of the Proxy Statement to be delivered to shareholders in connection with the Annual Meeting of Shareholders to be held on May 31, 2017 are incorporated by reference into Part III.

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#### Note About Forward-Looking Statements

Certain statements in this report, other than purely historical information, including estimates, projections, statements relating to our business plans, objectives and expected operating results, and the assumptions upon which those statements are based, are “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995, Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. Forward-looking statements may appear throughout this report, including without limitation, in the following sections: “Business,” “Risk Factors” and “Management’s Discussion and Analysis.” These forward-looking statements generally are identified by the words “believe,” “project,” “expect,” “anticipate,” “estimate,” “intend,” “strategy,” “future,” “opportunity,” “should,” “will,” “would,” “will be,” “will continue,” “will likely result,” and similar expressions. Forward-looking statements are based on current expectations and assumptions that are subject to risks and uncertainties which may cause actual results to differ materially from the forward-looking statements. A detailed discussion of risks and uncertainties that could cause actual results and events to differ materially from such forward-looking statements is included in the section entitled “Risk Factors” (See Part I, Item 1A of this Form 10-K). We undertake no obligation to update or revise publicly any forward-looking statements, whether as a result of new information, future events, or otherwise.

#### PART I

##### Item 1: Business

When we use the terms “Corporation,” “Company,” “Chemtura,” “Registrant,” “We,” “Us” and “Our,” unless otherwise indicated in the context otherwise requires, we are referring to Chemtura Corporation and our consolidated subsidiaries.

##### PENDING MERGER TRANSACTION WITH LANXESS

On February 1, 2017, Chemtura's stockholders voted to approve and adopt the agreement and plan of merger (the "Merger Agreement") we entered into on September 25, 2016 with Lanxess Deutschland GmbH, a limited liability company under the laws of Germany ("Lanxess"), and LANXESS Additives Inc., a Delaware corporation and an indirect, wholly-owned subsidiary of Lanxess ("Merger Subsidiary"). Upon the terms, and subject to the conditions set forth in the Merger Agreement, the Merger Subsidiary will merge with and into Chemtura (the "Merger"), with Chemtura surviving the merger in an all-cash transaction in which Chemtura's stockholders will receive \$33.50 in cash, without interest, per share of Chemtura common stock, which represented an 18.9% premium to the stock's closing share price of \$28.18 on September 23, 2016, the last trading day prior to the announcement of the Merger. The Merger remains subject to customary closing conditions including, among others, the receipt of necessary antitrust and regulatory approvals and the accuracy of representations and warranties made in the Merger Agreement. Assuming timely satisfaction of the necessary closing conditions, we currently expect the Merger to close by mid-2017.

Until the Merger has occurred, we will continue to operate as an autonomous company from Lanxess. This Annual Report on Form 10-K has been written based upon that premise. However, as a direct result of the Merger, changes to our common stock, strategic initiatives, structure, markets or locations may occur that would not have occurred if we were to continue as an independent entity.

For a further discussion of the Merger, see Note 2 — Mergers and Divestitures in our Notes to Consolidated Financial Statements.

##### GENERAL

We are a leading global developer, manufacturer and marketer of performance-driven engineered industrial specialty chemicals. Most of our products are sold to industrial manufacturing customers for use as additives, ingredients or intermediates that add value to their end products. We are committed to global sustainability through “greener technology” and developing engineered chemical solutions that meet our customers’ evolving needs. Our Industrial Performance Products segment is a global manufacturer and marketer of high-performance lubricant additive components, synthetic lubricant base-stocks, synthetic finished fluids, high-performing calcium sulfonate specialty greases and phosphate and polyester based fluids. This segment is also a leader in the development and production of hot cast elastomer pre-polymers. Our Industrial Engineered Products segment is a global developer and manufacturer of bromine and bromine-based products and organometallic compounds.



We are the successor to Crompton & Knowles Corporation which was incorporated in 1900 and through several acquisitions and divestitures since that time we renamed ourselves Chemtura Corporation in 2005. In 2013, we divested our antioxidants and UV stabilizers (“Antioxidants”) and Consumer Products businesses, and in 2014, we divested our Chemtura AgroSolutions business.

Our principal executive offices are located at 1818 Market Street, Suite 3700, Philadelphia, Pennsylvania 19103 and at 199 Benson Road, Middlebury, Connecticut 06749. Our telephone numbers in Philadelphia, Pennsylvania and Middlebury, Connecticut are (215) 446-3911 and (203) 573-2000, respectively. Our Internet Web site address is [www.chemtura.com](http://www.chemtura.com). We make available free of charge on or through our Internet Web site ([www.chemtura.com](http://www.chemtura.com)) our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, as soon as reasonably practicable after we electronically file such material with, or furnish to, the Securities and Exchange Commission.

Our Corporate Governance Principles, Code of Business Conduct and charters of our Audit, Compensation & Governance and Environmental, Health & Safety Committees are available on our Internet Web site and are free of charge to any stockholder who requests them from the Corporate Secretary at Chemtura Corporation, 199 Benson Road, Middlebury, CT 06749. The information contained on our Internet Web site is not incorporated by reference into this Annual Report on Form 10-K and should not be considered a part of this Annual Report.

Financial information for each of our segments discussed below can be found in Note 16 - Business Segments in our Notes to Consolidated Financial Statements.

#### OUR COMPETITIVE STRENGTHS

We believe our key competitive strengths are:

**Our Key Businesses Have Industry Leading Positions:** Our key businesses and many of our products hold leading positions within the various industries they serve. We believe our scale and global reach in product development and marketing provide us with advantages over many of our smaller competitors.

**Broad Diversified Business:**

**Geographic Diversity.** Our worldwide manufacturing, sales and marketing network enables us to serve the needs of both local and global customers worldwide. As of December 31, 2016, we operated 19 manufacturing facilities in 11 countries. For the year ended December 31, 2016, 43% of our net sales were generated in the United States and Canada, 31% from Europe, 24% from Asia/Pacific and 2% from Latin America. We market and sell our products in more than 70 countries, providing the opportunity to develop new markets for our products in higher-growth regions. Our historical strength in the United States and Europe has allowed us to expand our business geographically, thereby diversifying our exposure to many different economies.

## GEOGRAPHIC INFORMATION

**Product and Industry Diversity.** We are comprised of a number of distinct businesses based on different chemistries, each of which is subject to a set of varied industry trends. Additionally, the product lines of each of our businesses serve a variety of industries and applications, thereby providing us with further diversification.

**Diversified Customer Base.** We have a large and diverse global customer base in a broad array of industries and applications. No single customer comprises more than ten percent of our consolidated 2016 net sales.

**Unique Industry Positions:** We believe our businesses possess significant differentiation within their respective industry segments. Some of our businesses are vertically integrated into key feedstocks or have long lead time product registrations or technical and formulatory know-how. We believe these attributes are difficult to replicate and allow us to attract customers looking for consistent performance, reliability and cost-effective results, and are distinct competitive advantages. Examples include:

Our Industrial Performance Products segment participates in a production joint venture that produces cost competitive alkylated diphenylamine, a building block for our Naugalube® antioxidants used in lubricants, and develops urethane systems, the production of which is enhanced by our technical and formulatory know-how that permits us to engineer our products to meet specific customer needs.

Our Industrial Engineered Products segment has a strong diversified position in bromine with an extensive brine field operation in South Arkansas and long-term strategic sourcing agreements that provide access to Dead Sea and additional South Arkansas bromine. Bromine is used as a building block for products such as flame retardants used in automotive, electronics, building and construction, and brominated derivatives used in pharmaceutical, agriculture, and energy-based industry segments. Our high-purity organometallics products are based on more than 50 years of innovation and safe handling and provide state of the art solutions to rapidly developing new applications such as the chemical vapor deposition of metal oxide layers in electronics and photovoltaics, pharmaceutical synthesis reagents and next generation polymerization catalysts.



Well Positioned to Expand in the Faster Growing Regions: Our businesses' product portfolios have positioned us to benefit from high-growth regions in the future. We derived 26% of our revenues during 2016 from the faster growing regions of Asia/Pacific and Latin America. Despite current economic uncertainty in the faster growing regions, we will continue to build our presence in these regions as we believe that their polymer production will increase, their manufacturing of electronic products will expand and their automotive industries will build vehicles that have to meet emission standards such that they can be exported to western markets. There are a limited number of suppliers that can supply the products or provide the technical support that customers in these regions require, giving us the opportunity to capture this growth in demand for our products. In 2016, we completed the construction of a multi-purpose manufacturing plant in China which produces high-performance specialty greases, synthetic lubricants and high-performance urethane products to service that region.

#### OUR STRATEGY

Our primary goal has been to create value by driving profitable revenue growth while continuing to manage our costs. We continue to develop and engineer new products, processes and applications, leverage our global scale for regional growth and manage our portfolio of industrial specialty chemical businesses. Our efforts are directed by the following key business strategies:

**Technology-Driven Growth through Industry Focused Innovation.** As an industrial specialty chemical developer and manufacturer, our competitive strength lies in continually developing and engineering new products and processes that meet our customers' changing needs. We are investing in innovation to strengthen our new product pipelines and to reduce the cost of our products and will license or acquire technologies to supplement these initiatives. We focus on the development of products that are sustainable, meet ecological concerns and capitalize on growth trends in the industries we serve.

**Growth Expansion in Faster-Growing Regions through Building Global Scale.** We are building our local presence in the faster-growing regions notably in Asia Pacific, through sales representation, technical development centers, joint ventures and local manufacturing. We empower our regional teams to serve their growing customer base. We leverage our global scale by sharing service functions and technologies that no one region or business could replicate on its own while utilizing our regional presence to lower raw material costs.

**Performance-Driven Culture.** We believe we have outstanding people who can deliver superior performance under strong, experienced leaders who instill a culture of accountability. We expect accountability on safety, environmental stewardship, compliance with laws, customer commitments and performance. We are focused on understanding the needs of our customers and meeting such needs by efficiently executing their orders and delivering technology-based solutions that meet their requirements to earn the position as their preferred supplier. We measure our performance against benchmarks and metrics using statistical analysis and drive operational excellence through continuous improvement.

**Portfolio and Cost Management.** We will continue to build upon our strengths as an industrial specialty chemical company through organic growth that will maximize our global industrial specialty chemical portfolio. We are intent that any Chemtura portfolio business must have sustainable competitive advantages in the industries and applications it serves and can leverage its technology, scale and customer intimacy required to drive profitable growth at returns in excess of its cost of capital. The ability to leverage global demographic and technology trends combined with our in-depth knowledge and expertise will provide our portfolio businesses with the "right to play" in their chosen applications. We will continue to drive value-accreting growth fueled by our focus on innovation and the faster-growing regions. We will continue to increase the differentiation of our products while pruning or exiting under-performing products, driving continuous improvement and managing costs.

#### Our Business and Segments

Information as to the sales, operating income, depreciation and amortization, assets and capital expenditures attributable to each of our business segments during each of our last three fiscal years, as well as certain geographic information, is set forth in Note 16 - Business Segments in our Notes to Consolidated Financial Statements.

The table below illustrates the Industrial Performance Products and Industrial Engineered Products segments net sales for the year ended December 31, 2016 as well as these segment's major products, end-use markets and brands.



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	Industrial Performance Products		Industrial Engineered Products	
2016 Net Sales	\$823 million		\$721 million	
Key Products	<ul style="list-style-type: none"> <li>• Synthetic Lubricants</li> <li>• Synthetic Basestocks</li> <li>• Specialty Greases</li> </ul>	<ul style="list-style-type: none"> <li>• Lubricant Additives</li> <li>• Urethanes</li> </ul>	<ul style="list-style-type: none"> <li>• Brominated Performance Products</li> <li>• Flame Retardants</li> </ul>	<ul style="list-style-type: none"> <li>• Fumigants</li> <li>• Organometallics</li> </ul>
Major End-Use Markets	<ul style="list-style-type: none"> <li>• Adhesives</li> <li>• Automotive</li> <li>• Aviation</li> <li>• Building and Construction</li> <li>• Coatings</li> <li>• Consumer Products</li> <li>• Energy</li> </ul>	<ul style="list-style-type: none"> <li>• General Industrial</li> <li>• Lubricants</li> <li>• Marine</li> <li>• Mining</li> <li>• Packaging</li> <li>• Refrigeration</li> <li>• Sealants</li> </ul>	<ul style="list-style-type: none"> <li>• Agriculture</li> <li>• Building and Construction</li> <li>• Coatings</li> <li>• Consumer Durables</li> <li>• Electronics</li> <li>• Furniture</li> <li>• Fine Chemical</li> <li>• Fumigants</li> <li>• Oil and Gas Exploration</li> </ul>	<ul style="list-style-type: none"> <li>• Pharmaceuticals</li> <li>• Polymerization Catalysts</li> <li>• Energy                             <ul style="list-style-type: none"> <li>- Mercury Control</li> <li>- Oilfield</li> <li>- Photovoltaic</li> </ul> </li> <li>• Paints and Coatings</li> <li>• Polymerization</li> <li>• Transportation</li> </ul>
Key Brands	<ul style="list-style-type: none"> <li>• Adiprene®</li> <li>• Anderol®</li> <li>• Durad®</li> <li>• Everest®</li> <li>• Fomrez®</li> <li>• Hatcol®</li> <li>• Hybase®</li> <li>• Lobase®</li> </ul>	<ul style="list-style-type: none"> <li>• Naugalube®</li> <li>• Reolube®</li> <li>• Royco®</li> <li>• Synton®</li> <li>• Vibrathane®</li> <li>• Witcobond®</li> </ul>	<ul style="list-style-type: none"> <li>• Axion®</li> <li>• DaySta<sup>FM</sup></li> <li>• Emerald Innovation®</li> <li>• Firemaster®</li> <li>• Fyrebloc<sup>TM</sup></li> <li>• GeoBrom®</li> <li>• Kronitex®</li> <li>• Meth-o-Gas®</li> </ul>	<ul style="list-style-type: none"> <li>• Ongard®</li> <li>• Pyrobloc®</li> <li>• Reofos®</li> <li>• Smokebloc®</li> <li>• Thermoguard®</li> <li>• Timonox®</li> </ul>

### Industrial Performance Products

The Industrial Performance Products segment (also known by the acronym "IPP") develops, manufactures and markets specialty performance chemicals, formulations and polymers. Industrial Performance Products include: synthetic base-stocks and petroleum additives that enable engine and machine protection through friction reduction, thermal and oxidative stabilization, detergency, corrosion inhibition, and wear protection in transportation and industrial lubricating fluids and greases; specialty synthetic finished lubricants and greases for aviation, marine, refrigeration, power generation and general industrial applications; thermoset and thermoplastic urethane polymers engineered to provide superior performance properties in a broad range of industrial and recreational applications; and polyester polyols for cast polyurethane pre-polymers, flexible polyurethane foams and water-based polyurethane dispersions used in various types of coatings such as wood floor finishes, glass fiber coatings and textile treatments.

These products are supplied to our customers globally through diverse sales channels including selected distribution channel partners.

The Industrial Performance Products segment had net sales of \$823 million for 2016, \$886 million for 2015 and \$987 million for 2014. This segment represented 50%, 51% and 45% of our total net sales in 2016, 2015 and 2014, respectively. The major product offerings of this segment are described below and in the table above.

**Petroleum Additives**

We are a global manufacturer and marketer of high-performance base-stocks, additive components, finished synthetic lubricants and specialty greases. Our position along multiple parts of the value chain provides us with unique insight into industry needs and requirements, enabling us to design and develop differentiated solutions for our “blue-chip” customer base.

Our specialty synthetic lubricant base-stocks, including high-viscosity SYNTON® polyalphaolefins, REOLUBE® phosphate esters, and a broad portfolio of HATCOL® esters, are used in automotive, aviation, refrigeration, hydraulic systems and various industrial applications. These synthetic base-stocks offer performance benefits versus non-synthetic base-stocks, especially when operating under extreme conditions of temperature or load. Benefits of our synthetic base-stocks include improved thermal stability, oxidative stability, and lower volatility, providing extended drain intervals and reduced oil consumption. Additionally, REOLUBE® phosphate esters provide fire-resistant capability that allows the safe operation of equipment under high-risk situations, such as in nuclear power plants. Our specialty additive components, such as NAUGALUBE® alkylated diphenylamine antioxidants, play a critical role in meeting rising regulatory mandated automotive standards for engine performance and emissions as well as consumer demand for improved fuel economy and longer service intervals. Our oil-soluble HYBASE® and LOBASE® calcium sulfonate surfactants enable lubricants to keep car, truck and ship engines clean with minimal wear by providing detergency and corrosion protection properties. Additionally, we market a specially-developed overbased magnesium sulfonate detergent to prevent corrosion in turbines which burn heavy fuels for electrical power generation.

Our ANDEROL® and ROYCO® branded specialty and synthetic finished lubricants come with extensive original equipment manufacturer approvals for the aerospace & defense and industrial markets. Additionally, ROYCO® lubricants are approved under the specifications of U.S. military agencies and approving bodies including the US Department of Defense and the Society of Automotive Engineers. We manufacture and sell calcium sulfonate specialty greases and phosphate ester-based fluids for extreme temperature applications, thereby increasing machine durability under harsh conditions. In addition to our branded lubricants, we also manufacture private label finished lubricants for key customers.

#### Urethanes

We are a leading global supplier of a broad range of low-free monomer and high-performance conventional cast urethane pre-polymers, thermoplastic polyurethanes, custom curatives and urethane chemicals serving a variety of industries. We serve our customers in each region with a dedicated technical team, which, together with our product and formulation development capabilities, allow us to differentiate ourselves in these markets by tailoring our products to the specialized needs of each customer application.

Cast polyurethane products produced from our ADIPRENE® and VIBRATHANE® urethane pre-polymers offer high durability, abrasion resistance, cut resistance, high temperature resistance and chemical resistance for performance-oriented applications. These characteristics allow us to market our urethane pre-polymers for customer applications where such performance qualities are critical, such as oil field pipeline cleaning pigs, industrial printing rolls, mining machinery, semiconductor polishing pads, solid industrial tires and wheels, sporting goods and roller coaster wheels.

Our ULTRALAST® thermoplastic polyurethane ("TPU") polymers can be used in a variety of high performance applications in the oil and gas, mining, construction, and sports equipment industries. ULTRALAST® TPU offers not only superior dynamic properties and longer component life in harsh environments, but also certain processing advantages for our customers.

Our urethane chemicals business consists primarily of two product lines. FOMREZ® polyester polyols serve as raw materials for our pre-polymer line of products and are also utilized in industrial applications such as flexible foam for seating. WITCOBOND® polyurethane dispersions serve a more diverse customer base and are primarily utilized for glass fiber sizing, wood floor coatings and ballistics protection applications.

#### Industrial Engineered Products

We are a global leader in manufacturing and selling engineered specialty chemicals utilized in the plastics, agriculture, fine chemicals, oil and gas, building and construction, insulation, electronics, mercury control, solar energy, pharmaceutical and automotive industries. Our products include catalyst components, surface treatments, flame retardants and an extensive bromine based product line used as agricultural and pharmaceutical intermediates, completion fluids for oil and gas extraction and mercury control products for coal fired power stations. These products are sold across the entire value chain ranging from direct sales to monomer producers, polymer manufacturers, compounders and fabricators, fine chemical and pharmaceutical manufacturers, photovoltaic panel and LED producers, oilfield service and electricity generation companies to industry distributors.

The Industrial Engineered Products segment had net sales of \$721 million for 2016, \$722 million for 2015 and \$800 million for 2014. This segment represented 44%, 41% and 37% of our total net sales in 2016, 2015 and 2014, respectively. The major product offerings of this segment are described below and in the table above.

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## Great Lakes Solutions

Great Lakes Solutions (also known by the acronym "GLS") is a leading global manufacturer and marketer of bromine, bromine intermediates and flame retardant products and solutions. We deliver sustainable value to our customers and shareholders through industry diversification, fire safety advocacy and business excellence. Our flame retardant products are used in applications such as electronic components, electrical enclosures and building products, including insulation and furniture foam, and automotive, while bromine and bromine intermediates are used in the manufacture of a wide variety of industrial and consumer products and energy producing industries.

Great Lakes Solutions is a leading global producer of safe and cost-efficient flame retardants, which reduce or eliminate the flammability of a wide variety of combustible materials. Our additives help stop fire before it starts by resisting ignition and slowing the rate of combustion and are used in a wide variety of applications, including flexible and rigid foams, fabrics and furniture, auto interiors and under the hood, circuit boards and electrical connectors, computer cabinetry and wiring in building and construction. We work tirelessly to advocate for increased fire safety standards in new and developing economies and, for more than 40 years, we have helped our customers by providing the broadest portfolio of flame retardant products and solutions. We continue to offer new products with exceptional performance along with environmentally friendly characteristics leading to enhanced long-term sustainability. Our leading products include the Emerald Innovation® Series, Firemaster® bromine-based flame retardants; Kronitex®, Reofos® phosphorus-based flame retardants; Fyrebloc™ flame retardants; Fire Shield® LSFR, Ongard®, Oncor™, Pyrobloc®, Smokebloc®, Thermoguard® / Timonox® / Trutint® antimony-based flame retardants/synergists; and PetCat® antimony-based catalysts.

Great Lakes Solutions is one of the world's leading manufacturers of bromine and bromine intermediates which are utilized in many industries including agrochemicals, pharmaceuticals, fine chemicals, butyl rubber, polymers and biocides. Bromine and bromine based intermediates serve as building blocks for developing and engineering highly complex organic molecules that meet specific performance, environmental and quality requirements. Our expertise in bromine and bromine based chemicals, both in the lab and in full scale production, is built on a foundation of over 60 years of innovation and continuous improvement. Our state of the art Naugatuck Research Campus is staffed by a team of highly experienced scientists skilled in a wide array of synthetic methods and chemical manufacturing processes. We also operate multi-purpose, flexible pilot facilities that enable us to readily scale up new products and processes from grams to tonnes before the commitment to full scale production. While primarily focused on providing the highest quality and most reliable bromine and brominated intermediate products, our technology team also provides custom synthesis and process development services to customers seeking a development partner. With access to the world's two main sources of bromine and a modern bromine ISO tank fleet with in-house maintenance capability, Great Lakes Solutions is positioned as the supplier of choice.

Great Lakes Solutions' high quality, solids-free clear brine fluids are an important part of oil exploration and development which are used in the preparation of well equipment for production including insertion of liners, screens, packers and other equipment. Bromide fluids are unique in that they are high density fluids that are suitable for deepwater production and also for high temperature and high pressure oil and gas formations. They allow for well pressure control and help to protect the formation so that oil and gas production is both efficient and economical. Our specialty brine fluids are available in a wide range of densities to meet the unique pressure characteristics of each well and meet the stringent requirements of the oil and gas industry. Bromide fluids are also used for deepwater fracturing operations in order to provide the necessary pressure in the well to successfully fracture the geological formation area that supplies oil and gas to the wellbore so that higher volumes flow to the production piping.

Rounding out our portfolio, our GeoBrom® line of bromine and bromine derivative products is another example of environmentally friendly innovation where we deploy our technology expertise to provide a solution to controlling mercury emissions from coal-fired power stations. Great Lakes Solutions has a strong position in the United States for bromine production based on access to quality brine resources in areas of South Arkansas which can be economically developed to manufacture high quality bromine for sale to customers or for use to manufacture products like GeoBrom® mercury control solutions.

Great Lakes Solutions is a global product line with expanding footprint and services. Through our strategic geographic and operational initiatives, we have significantly expanded our shipping container fleet capabilities. We are backwardly integrated to brine, a primary source of bromine, and since 2009 we have invested a significant

amount of capital in infrastructure to redeploy our assets to produce new sustainable innovative brominated flame retardants and increase the efficiency and reliability of our plants and pipelines. Great Lakes Solutions is well-positioned to support not only growth of our traditional industry segments but also to provide security of supply with expansion capability to our mercury control customers. Operational excellence initiatives are being designed to bring an improved, cost-competitive and service-oriented footprint to our customers globally.



## Organometallics

Organometallics are a special group of metals containing organic chemicals which play a significant role in a variety of industrial applications. Organometallics are essential catalyst components used to initiate the polymerization reactions that transform monomers into polymers and cure certain paints. They are also used as precursors in glass coatings, metal organic chemical vapor deposition ("MOCVD") agents in the production of semiconductors, LEDs and photovoltaic panels, as well as reagents used in the production of pharmaceutical intermediates.

Building on more than 50 years' experience, Organometallics (also known as "Organometallic Specialties" or by the acronym "OMS") continues to enhance our portfolio of world-class products and renew our commitment to delivering customer value. Today our OMS business is a leaner and stronger global partner for the development, manufacture and marketing of an impressive array of specialty organometallic products.

Leveraging our history of strength, OMS is poised for a future of growth in a range of high-performance products that serve the fastest growing organometallics applications, such as single-site catalyst systems, high-brightness LEDs and semiconductors, photovoltaics (solar panels), pharmaceuticals and fine chemicals.

## PREVIOUSLY DIVESTED BUSINESSES

### Chemtura AgroSolutions Business

In November 2014, we sold our Chemtura AgroSolutions business to Platform Specialty Products Corporation ("Platform"). Under the terms of the sale, we retained most of the property, plant and equipment used to manufacture products for the Chemtura AgroSolutions business and will continue to manufacture products for Platform under several supply agreements and a tolling agreement (collectively, the "supply agreements") with minimum terms between two and four years. The supply agreements include contractual obligations to continue to supply for a period of up to 2 years after the termination of the supply agreement. The Agrochemical Manufacturing segment represents the results of operations for the Chemtura AgroSolutions business prior to the sale and, since the date of the sale, the ongoing operations under the supply agreements. Contemporaneous with the sale, we no longer market the Chemtura AgroSolutions business products to third parties.

Information related to the sale of our Chemtura AgroSolutions business and financial information related to the Agrochemical Manufacturing segment can be found in Note 2 - Mergers and Divestitures and Note 16 - Business Segments in our Notes to Consolidated Financial Statements.

### Divestitures Reported as Discontinued Operations

In 2013, we sold our subsidiaries that constituted our Consumer Products business to KIK Custom Products Inc. ("KIK") and we sold our Antioxidant business to SK Blue Holdings, Ltd. ("SK"), an affiliate of SK Capital Partners III, L.P. During 2014 and 2015, we continued to finalize and complete certain closing terms under the sale agreements, including the customary settlement of working capital.

For further discussion of these divestitures, see Note 2 - Mergers and Divestitures in our Notes to Consolidated Financial Statements.

### Sources of Raw Materials

Hydrocarbon-based and inorganic chemicals constitute the majority of the raw materials required to manufacture our products. These materials are generally available from a number of sources. We use significant amounts of chemicals derived from ethylene, propylene, benzene, iso-and, n-butane and n-Octene as well as ethyl and butylchlorides, palm and coconut oil, methanol, phosphorus and urea. In addition, chlorine, caustic, other petrochemicals and metals like tin, aluminum and zinc represent some key materials used in our chemical manufacturing processes. Major requirements for key raw materials are purchased typically pursuant to multi-year contracts. Large increases in the cost of such key raw materials, as well as natural gas, which powers some of our key production facilities, could adversely affect our operating margins if we are not able to pass the higher costs on to our customers through higher sales prices. While temporary shortages of raw materials we use may occur occasionally, key raw materials have generally been available. However, there can be no assurance that unforeseen developments (including markets and political and regulatory conditions) will not affect our raw material supplies, their continuing availability and their cost. For additional information related to these risks, see Item 1A. - Risk Factors.

#### Seasonal Business

No material portion of our Industrial Performance Products or Industrial Engineered Products business is significantly seasonal.

#### Employees

We had approximately 2,500 full time employees at December 31, 2016.

#### Backlog

We do not consider backlog to be a significant indicator of the level of future sales activity. In general, we do not manufacture our products against a backlog of orders. Production and inventory levels are based on the level of incoming orders as well as projections of future demand. Therefore, we believe that backlog information is not material to understanding our overall business and should not be considered a reliable indicator of our ability to achieve any particular level of sales or financial performance.

#### Competitive Conditions

The breadth of our product offering provides multiple channels for growth and mitigates our dependence on any one market or end-use application. We sell our products in more than 70 countries. This worldwide presence reduces our exposure to any one country's or region's economy although a majority of our sales are in North America and Europe. We have a broad customer base and believe that our products, many of which we customize for the specific needs of our customers, allow us to enhance customer loyalty and attract customers that value product innovation and reliable supply.

Product performance, quality, price, and technical and customer service are all important factors in competing in substantially all of our businesses.

We face significant competition in many of the industries in which we operate due to the trends toward global expansion and consolidation by competitors. Many of our existing competitors are larger than we are and may have more resources and better access to capital markets for continued expansion or new product development than we do. Some of our competitors also have a greater product range, are more vertically integrated or have better distribution capability than we do for specific products or geographical areas.

#### Research and Development

All of our businesses conduct research and development activities to increase competitiveness. Our businesses conduct research and development activities to develop new and optimize existing production technologies, as well as to develop commercially viable new products and applications while also maintaining existing product registrations required by regulatory agencies and customers around the world. Our research and development expense totaled \$21 million in 2016, \$20 million in 2015 and \$36 million in 2014.

#### Intellectual Property and Licenses

We attach great importance to patents and trademarks in order to protect our investment in research and development, manufacturing and marketing. Our policy is to seek wide protection for significant products and process developments on our major applications. We also seek to register trademarks extensively as a means of protecting the brand names of our products.

We have approximately 800 United States and foreign granted patents and pending patent applications and approximately 1,000 United States and foreign registered and pending trademarks. Patents, trademarks, trade secrets in the nature of know-how, formulations, and manufacturing techniques assist us in maintaining the competitive position of certain of our products. Our intellectual property is of particular importance to a number of specialty chemicals we manufacture and sell. However, we do business in countries where protection may be limited and difficult to enforce. We are licensed to use certain patents and technology owned by other companies, including some foreign companies, to manufacture products complementary to our own products, for which we pay royalties in amounts not considered material, in the aggregate, to our consolidated results.

Neither our business as a whole nor any particular segment is materially dependent upon any one particular patent, trademark, copyright or trade secret.

### Regulatory Matters

Chemical companies are subject to extensive environmental laws and regulations concerning, among other things, emissions to the air, discharges to land, surface, subsurface strata and water and the generation, handling, storage, transportation, treatment and disposal of hazardous waste and other materials. Chemical companies are also subject to other federal, state, local and foreign laws and regulations regarding health and safety matters.

Environmental Health and Safety Regulation - We believe that our business, operations and facilities are being operated in substantial compliance, in all material respects, with applicable environmental, health and safety laws and regulations, many of which provide for substantial fines and criminal sanctions for violations. The ongoing operations of chemical manufacturing plants, however, entail risks in these areas and there can be no assurance that material costs or liabilities will not be incurred. In addition, future developments of environmental, health and safety laws and regulations and related enforcement policies, could bring into question the handling, manufacture, use, emission or disposal of substances or pollutants at facilities we own, use or control. These developments could involve potential significant expenditures in our manufacture, use or disposal of certain products or wastes. To meet changing permitting and regulatory standards, we may be required to make significant site or operational modifications, potentially involving substantial expenditures and reduction or suspension of certain operations. In 2016, we incurred \$9 million of costs for capital projects and \$56 million for operating and maintenance costs related to environmental, health and safety programs at our facilities. In 2017, we expect to incur approximately \$12 million of costs for capital projects and \$54 million for operating and maintenance costs related to environmental, health and safety programs at our facilities. During 2016, we paid \$8 million to remediate previously utilized waste disposal sites and current and past facilities. We expect to spend approximately \$13 million during 2017 to remediate such waste disposal sites and current and former facilities.

#### Item 1A: Risk Factors

The most significant risks that could materially and adversely affect our financial condition, results of operations or cash flows include, but are not limited to, the factors described below. Except as otherwise indicated, these factors may or may not occur and we cannot predict the likelihood of any such factor occurring.

The proposed Merger may not be completed on a timely basis, or at all, and the failure to complete the Merger could adversely affect our business and the market price of our common stock.

On September 25, 2016, we entered into the Merger Agreement with Lanxess and Merger Subsidiary. Completion of the Merger is subject to the satisfaction of various conditions, including, among other things, the receipt of necessary antitrust and regulatory approvals and the accuracy of representations and warranties made in the Merger Agreement. Failure to complete the Merger could adversely affect our business and the market price of our common stock in a number of ways, including the following:

If the Merger is not completed, and there are no other parties willing and able to acquire Chemtura for consideration that is equivalent or more attractive than that in the Merger Agreement, on terms acceptable to us, our stock price may decline.

We have incurred, and will continue to incur, significant costs, expenses and fees for professional services and other transaction costs in connection with the proposed Merger, for which we will have received little or no benefit if the Merger is not completed. Many of these fees and costs will be payable by us even if the Merger is not completed and may relate to activities that we would not have undertaken other than to complete the Merger.

The announcement of the proposed Merger could adversely affect our business, financial condition and results of operations.

The announcement of the proposed Merger could cause disruptions in and create uncertainty surrounding our ongoing business operations, which could have an adverse effect on our financial condition and results of operations, regardless of whether the Merger is completed. These risks to our business include the following, all of which could be exacerbated by a delay in the completion of the Merger:

- the diversion of significant management time and resources towards the completion of the Merger
- the impairment of our ability to retain and hire key personnel, including our senior management
- the interim operating restrictions in the Merger Agreement that limit our ability to operate our business;
- difficulties maintaining relationships with customers, suppliers and others with whom we conduct business and
- potential litigation relating to the Merger and the costs related thereto.

We operate on an international scale and are exposed to risks in the countries in which we have significant operations or interests.

We are dependent, in large part, on the economies of the countries in which we manufacture and market our products. Of our 2016 net sales, 43% were to customers in the United States and Canada, 31% to Europe, 24% to the Asia/Pacific region and 2% to Latin America. As such, we are subject to risks inherent in multinational operations.

Those risks include:

- compliance with U.S. laws affecting operations outside of the United States, such as Office of Foreign Assets Control trade sanction regulations and anti-boycott regulations;
- compliance with anti-corruption laws, including Foreign Corrupt Practices Act and U.K. Bribery Act;
- compliance with antitrust and competition laws, data privacy laws, and a variety of other local, national and multi-national regulations and laws in multiple regimes;
- changes in tax laws, interpretation of tax laws and tax audit outcomes;
- fluctuations or devaluations in currency values, especially in emerging markets;
- changes in capital controls, including currency exchange controls, government currency policies or other limits on our ability to import raw materials or finished product or repatriate cash from outside the United States;
- changes in local regulations and laws, the uncertainty of enforcement of remedies in foreign jurisdictions, and foreign ownership restrictions and the potential for nationalization or expropriation of property or other resources;
- discriminatory or conflicting fiscal policies;
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increased sovereign risk, such as default by or deterioration in the economies and credit worthiness of local governments;

•varying abilities to enforce intellectual property and contractual rights;

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• greater risk of uncollectible accounts and longer collection cycles;  
• design and implementation of effective control environment processes across our diverse operations and employee base; and  
• imposition of more or new tariffs, quotas, trade barriers, and similar restrictions on our sales or regulations, taxes or policies that might negatively affect our sales.

In addition, political and economic changes or volatility, geopolitical regional conflicts, terrorist activity, political unrest, civil strife, acts of war, public corruption, expropriation and other economic or political uncertainties could interrupt and negatively affect our business operations or customer demand. A slowdown in economic growth or high unemployment in some emerging markets could constrain consumer spending, and declining consumer purchasing power could adversely impact our profitability. Continued instability in the banking and governmental sectors of certain countries in the European Union and in emerging markets could adversely affect us. All of these factors could result in increased costs or decreased revenues, and could materially and adversely affect our product sales, financial condition, results of operations and cash flows.

Increases in the price of the raw materials or energy utilized for our products may have a material adverse effect on our operating results.

We purchase significant amounts of raw materials and energy for our businesses. The cost of these raw materials and energy, in the aggregate, represents a substantial portion of our operating expenses. The prices and availability of the raw materials we utilize vary with market conditions and may be highly volatile. From time to time in the past, we have experienced significant cost increases in purchases of raw materials and energy which has had a negative impact on our operating results.

Although we have attempted, and will continue to attempt, to match increases in the prices of raw materials or energy with corresponding increases in sales prices for the products produced with these materials, we may not be able to immediately raise product prices, if at all. Ultimately, our ability to pass on increases in the cost of raw materials or energy to customers is highly dependent upon market conditions and contractual terms. Specifically, there is a risk that raising prices charged to our customers could result in a loss of sales volume. In the past, we have not always been able to pass on increases in the prices of raw materials and energy to our customers, in whole or in part, and there will likely be periods in the future when we will not be able to pass on these price increases. Reactions by our customers and competitors to our price increases could cause us to reevaluate and possibly reverse such price increases, which would negatively affect operating results.

Any disruption in the availability of the raw materials or energy utilized for our products may have a material adverse effect on our operating results.

Across our businesses, there are a limited number of suppliers for some of our raw materials and utilities and, in some cases, the number of sources for and availability of raw materials and utilities is specific to the particular geographic region in which a facility is located. It is also common in the chemical industries for a facility to have a sole, dedicated source for its utilities, such as steam, electricity and gas. Having a sole or limited number of suppliers may result in our having limited negotiating power, particularly during times of rising raw material costs. Having a sole source supplier also increases the vulnerability and severity of disruptions in the supply of raw materials. Even where we have multiple suppliers for a raw material or utility, these suppliers may not make up for the loss of a major supplier. Moreover, any new supply agreements we enter into may not have terms as favorable as those contained in our current supply agreements. For some of our products, the facilities or distribution channels of raw material and utility suppliers and our production facilities form an integrated system, which limits our ability to negotiate favorable terms in supply agreements.

In addition, as part of an increased trend towards vertical integration in the chemicals industry, other chemical companies are purchasing raw material suppliers. This is further reducing the available suppliers for certain raw materials.

If one or more of our significant raw material or utility suppliers were unable to meet its obligations under present supply arrangements, raw materials may become unavailable within the geographic area from which they are now sourced, or supplies may otherwise be constrained or disrupted, our businesses could be forced to incur increased costs for our raw materials or utilities, which would have a direct negative impact on plant operations and may adversely affect our financial condition, results of operations and cash flows.

Production facilities are subject to operating risks that may adversely affect our financial condition, results of operations and cash flows.

We are dependent on the continued operation of our production facilities. Such production facilities are subject to hazards inherent in the manufacturing and marketing of chemical products, which include chemical spills, pipeline or storage tank leaks

and ruptures, discharges or releases of toxic or hazardous substances or gases and exposure to hazardous substances related to the manufacturing, storage and transportation of dangerous chemicals.

Disruptions at any of our facilities could be caused by maintenance outages; prolonged power failures or reductions; explosions or fires; a breakdown, failure or substandard performance of any of our equipment; the effect of noncompliance with material environmental requirements or permits; disruptions in the transportation infrastructure, including railroad tracks, ports, bridges, tunnels or roads; fires, floods, earthquakes, hurricanes or other catastrophic disasters; an act of terrorism; cyber-attack on operating systems; or other operational problems.

Any prolonged disruption in operations at any of our facilities could cause significant lost production. Losses related to any such disruption in operations may be either uninsured or underinsured. Moreover, we could incur significantly higher costs and longer lead times associated with distributing our products to our customers during the time that it takes for us to reopen or replace a damaged facility. If any of these events were to occur, it could cause our customers to seek other suppliers and could have a material adverse effect on our business, financial condition, operating results and cash flows.

Many potential hazards can cause bodily injury and loss of life, severe damage to or destruction of property and equipment and environmental damage, and may result in suspension of operations and the imposition of civil or criminal penalties and liabilities. Furthermore, we are subject to present and future claims with respect to workplace exposure, including workers compensation, exposure of persons located nearby our premises as well as other matters. In addition, we are subject to various claims and litigation in the ordinary course of business.

We maintain property, business interruption, products liability and casualty insurance policies which we believe are in accordance with customary industry practices, as well as insurance policies covering other types of risks, but we are not fully insured against all potential hazards and risks incident to our business. Each of these insurance policies is subject to customary exclusions, deductibles and coverage limits, in accordance with industry standards and practices.

As a result of market conditions, premiums and deductibles for certain insurance policies can increase substantially and, in some instances, certain insurance may become unavailable or available only for reduced amounts or terms of coverage. If we were to incur a significant liability for which we were not fully insured, it could have a material adverse effect on our business, results of operations, financial condition and liquidity.

Maintenance, expansion and refurbishment of our facilities or the construction of new facilities involve significant risks.

Our facilities may require periodic upgrading and improvement. Any unexpected operational or mechanical failure, including failure associated with breakdowns and forced outages, could reduce our facilities' production capacity below expected levels which would reduce our revenues. Unanticipated capital expenditures associated with maintaining, upgrading or repairing our facilities may also reduce profitability.

If we make any major modifications to our facilities, we may be required to install the best available control technology or to achieve the lowest achievable discharge or emissions rates as such terms are defined under applicable law. Any such modifications likely would result in substantial additional capital expenditures and may prolong the time necessary to bring the facility on line. We may also choose to refurbish or upgrade our facilities based on our assessment that such activity will provide adequate financial returns. However, such activities require time for development and capital expenditures before commencement of commercial operations, and key assumptions underpinning a decision to make such an investment may prove incorrect, including assumptions regarding construction costs and timing which could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Finally, the construction of new manufacturing facilities entails a number of risks, including the ability to begin production within the cost and timeframe estimated and to attract a sufficient number of skilled workers to meet the needs of the new facility. Additionally, our assessment of the projected benefits associated with the construction of new manufacturing facilities is subject to a number of estimates and assumptions, which in turn are subject to significant economic, competitive and other uncertainties that are beyond our control. If we experience delays or increased costs, our estimates and assumptions are incorrect, or other unforeseen events occur, our business, ability to supply customers, financial condition, results of operations and cash flows could be adversely impacted.

Failure to develop and market new products and manage product life cycles could impact our competitive position and have an adverse effect on our business, financial condition and results of operations.



Our operating results are largely dependent on our assessment and management of our portfolio of current, new and developing products and our ability to bring those products to market. We plan to grow earnings by focusing on developing markets and

solutions to meet increasing demand for products. Our ability to execute this strategy and our other growth plans successfully could be adversely affected by difficulties or delays in product development such as the inability to identify viable new products, successfully complete research and development, obtain relevant regulatory approvals, effectively manage our manufacturing process or costs, obtain intellectual property protection, or gain market acceptance of new products and services. Because of the lengthy and costly development process, technological challenges and intense competition, we cannot assure you that any of the products we are currently developing, or could begin to develop in the future, will achieve commercial success. Further, sales of our new products could replace sales of some of our current products, offsetting the benefit of even a successful product introduction. We must also successfully anticipate and adapt our products to the changing requirements of our customers. If we do not keep our products current with our customers' needs, they may seek alternative suppliers. A failure to develop commercially successful products, to develop additional uses for existing products or to keep existing products at the cutting edge of product performance, could materially adversely affect our business, financial condition, results of operations and cash flows.

The cyclical nature of the chemicals industry causes significant fluctuations in our results of operations and cash flows.

Our historical operating results reflect the cyclical and volatile nature of the supply and demand balance of the chemicals industry. The chemicals industry has experienced alternating periods of inadequate capacity and supply, allowing prices and profit margins to increase, followed by periods when substantial capacity is added, resulting in oversupply, overcapacity, corresponding declining utilization rates and, ultimately, declining prices and profit margins. Some of the markets in which our customers participate, such as the automotive, aviation, electronics, energy and building and construction industries, are cyclical in nature, thus posing a risk to us. These markets are highly competitive, are driven to a large extent by end-use markets and may experience overcapacity, all of which may affect demand for and pricing of our products and result in volatile operating results and cash flows over our business cycle. Future growth in product demand may not be sufficient to utilize current or future capacity. Excess industry capacity may continue to depress our volumes and margins on some products. Our operating results, accordingly, may be volatile as a result of these changes in industry capacity.

Failure to accurately forecast market and customer trends for our products could adversely affect our business and financial results or operating efficiencies.

Our ability to meet the product demands of our customers require that we accurately forecast market and customer trends for our products. If we are unable to accurately forecast market and customer trends for our products, our revenues and operating results could be adversely affected.

We may experience excess capacity with respect to the products we have agreed to supply to the purchaser of our Chemtura AgroSolutions business under the post-closing supply agreements. If such supply agreements are terminated at the end of their minimum contract terms and we are unable to find additional production to fill the vacated capacity, we may experience declining utilization rates which could have an adverse impact on our operating results.

Decline in general economic conditions and other external factors may adversely impact our operations.

External factors, including domestic and global economic conditions, international events and circumstances, competitor actions and government regulation, are beyond our control and can cause fluctuations in demand and volatility in the prices of raw materials and other costs that can intensify the impact of economic cycles on our operations. We produce a broad range of products that are used as additives and components in other products in a wide variety of end-use markets. As a result, our products may be negatively impacted by supply and demand instability in other industries and the effects of that instability on supply chain participants. Economic and political conditions in countries in which we operate may also adversely impact our operations. For example, some countries in Europe have been particularly adversely affected by rising government deficits and debt levels, which require certain countries to adopt deflationary fiscal and monetary policies that could negatively affect our businesses. Although our diversified product portfolio and international presence lessens our dependence on a single market and exposure to economic conditions or political instability in any one country or region, our businesses are nonetheless sensitive to changes in economic conditions. For example, in 2016, 24% of our net sales were from the Asia/Pacific region. To further our growth strategies in the Asia/Pacific region, we completed the construction of a manufacturing facility in Nantong, People's Republic of China. An economic downturn in China could negatively impact our growth strategies

in the Asia/Pacific region. Financial crises and economic downturns anywhere in the world could adversely affect our results of operations, cash flows and financial condition.

Competition may adversely impact our results of operations.

We face significant competition in many of the markets in which we operate due to the trend toward global expansion and consolidation by competitors. Many of our existing competitors are larger than we are and may have more resources and better access to capital markets to facilitate continued expansion or new product development.

Additionally, some of our competitors have a greater product range and distributional capability than we do for certain products and in specific regions. We also expect that we will continue to face new competitive challenges as well as additional risks inherent in international operations in developing regions. We are susceptible to price competition in certain markets in which customers are sensitive to changes in price. At the same time, we also face downward pressure on prices from industry overcapacity, lower cost structures in certain businesses and lower energy and raw material prices. The further use and introduction of generic and alternative products by our competitors may result in increased competition and could require us to reduce our prices and take other steps to compete effectively. These measures could negatively affect our financial condition, results of operations and cash flows. Alternatively, if we were to increase prices in response to this competition, the reactions of our competitors and customers to such price increases could cause us to reevaluate and possibly reverse such price increases or risk a loss in sales volumes.

The loss of or a significant reduction in purchases by our largest customers could adversely affect our operations.

While some of our largest customers have entered into supply contracts with us, these customers may not continue to purchase the same levels of our products in the future due to a variety of reasons. Some of our major customers could decide to purchase the products we provide to them from other third-party providers. If any of our major customers substantially reduces or altogether ceases purchasing our products, depending on market conditions, we could suffer a material adverse effect on our business, financial condition, results of operations and cash flows.

Our products are subject to extensive government scrutiny and regulation.

We are subject to regulation by federal, state, local and foreign government authorities. In some cases, we need government approval of our products, manufacturing processes and facilities before we may sell certain products. Many products are required to be registered with the U.S. Environmental Protection Agency (the "EPA") and with comparable government agencies in the European Union and elsewhere. We are also subject to ongoing reviews of our products, manufacturing processes and facilities by government authorities, and must also produce product data and comply with detailed regulatory requirements.

The REACH legislation requires chemical manufacturers and importers in the European Union to demonstrate the safety of the chemical substances contained in their products via a substance registration process. The registration process requires capital and resource commitments to compile and file comprehensive chemical dossiers regarding the use and attributes of each chemical substance manufactured or imported by Chemtura and requires us to perform chemical safety assessments. Successful registration under REACH is a functional prerequisite to the continued sale of our products in the European Union market. Thus, REACH and other similar regulations present a risk to the continued sale of our products in the European Union should we be unable or unwilling to complete the registration process or if the European Union seeks to ban or materially restrict the production or importation of the chemical substances used in our products.

The Frank R. Lautenberg Chemical Safety for the 21<sup>st</sup> Century Act (the "Lautenberg Act"), signed into law in June 2016, amends existing chemical safety laws in the United States, giving the EPA significant new powers in the regulation of not only new but also existing chemicals. Under the Lautenberg Act, the EPA has a mandate to review chemicals that are on the Toxic Substances Control Act Inventory to assess whether they present an unreasonable risk, and the EPA is authorized to impose restrictions on its use if it determines they do. We may have to perform chemical safety assessments in conjunction with the EPA reviews, and we may find that the availability of some of the chemicals we use in our processes is restricted or eliminated over time.

New or stricter laws and regulations may be introduced that could result in additional compliance costs and prevent or inhibit the development, manufacture, distribution and sale of our products. Such outcomes could adversely impact our results of operations, financial position and cash flows.

Environmental, health and safety regulation matters could have a negative impact on our results of operations and cash flows.

We are subject to extensive federal, state, local and foreign environmental, health and safety laws and regulations concerning, among other things, emissions in the air, discharges to land, surface, subsurface strata and water and the

generation, handling, storage, transportation, treatment and disposal of hazardous waste and other materials. Our operations bear the risk of

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violations of those laws and sanctions for violations such as clean-up and removal costs, long-term monitoring and maintenance costs, costs of waste disposal, natural resource damages and payments for property damage and personal injury. Although it is our policy to comply with such laws and regulations, it is possible that we have not been or may not be at all times in compliance with all of these requirements.

Additionally, these requirements, and enforcement of these requirements, may become more stringent in the future. The ultimate additional cost of compliance with any such requirements could be material. Non-compliance could subject us to material liabilities such as government fines or orders, criminal sanctions, third-party lawsuits, remediations and settlements, the suspension, modification or revocation of necessary permits and licenses, or the suspension of non-compliant operations. We may also be required to make significant site or operational modifications at substantial cost or pay remediation costs at current or former facilities. In addition, various federal and state statutes impose strict liability upon various classes of persons with respect to costs associated with the investigation and remediation of waste disposal sites. Future regulatory or other developments could also restrict or eliminate the use of, or require us to make modifications to, our products, packaging, manufacturing processes and technology, which could have a significant adverse impact on our financial condition, results of operations and cash flows.

At any given time, we may be involved in claims, litigation, administrative proceedings, settlements and investigations of various types in a number of jurisdictions involving potential environmental liabilities, including clean-up costs associated with hazardous waste disposal sites, natural resource damages, property damage, personal injury and regulatory compliance or non-compliance. The resolution of these environmental matters could have a material adverse effect on our results of operations and cash flows.

Current and future litigation, governmental investigations, prosecutions and administrative claims, including antitrust-related governmental investigations and lawsuits, could harm our financial condition, results of operations and cash flows.

We have been involved in several significant lawsuits and claims relating to environmental and chemical exposure matters, and may in the future be involved in similar litigation. Additionally, we are routinely subject to other civil claims, litigation and arbitration and regulatory investigations arising in the ordinary course of our business as well as with respect to our divested businesses. We could become subject to additional claims. An adverse outcome of these claims could have a materially adverse effect on our business, financial conditions, results of operations and cash flows.

We have also been involved in a number of governmental investigations, prosecutions and administrative claims in the past, including antitrust-related governmental investigations and civil lawsuits, and may in the future be subject to similar claims. Additionally, we have incurred and could again incur expenses in connection with antitrust-related matters, including expenses related to our cooperation with governmental authorities and defense-related civil lawsuits.

Conflicts, military actions, terrorist attacks and general instability along with increased security regulations related to our industry, could adversely affect our business.

Conflicts, military actions and terrorist attacks have precipitated economic instability and turmoil in financial markets. The uncertainty and economic disruption resulting from hostilities, military action or acts of terrorism may impact our facilities and operations or those of our suppliers or customers. Accordingly, any conflict, military action or terrorist attack that impacts us or any of our suppliers or customers, could have a material adverse effect on our business, results of operations, financial condition and cash flows.

Federal regulations aimed at increasing security at certain chemical production plants and similar legislation that may be proposed in the future could require us to enhance plant security and to alter or discontinue our production of certain chemical products, thereby increasing our operating costs and causing an adverse effect on our results of operations.

Regulations have been implemented by the U.S. Department of Homeland Security (“DHS”) aimed at decreasing the risk, and effects, of potential terrorist attacks on chemical plants located within the United States. Pursuant to these regulations, these goals would be accomplished in part through the requirement that certain high-priority facilities develop a prevention, preparedness, and response plan after conducting a vulnerability assessment. In addition, companies may be required to evaluate the possibility of using less dangerous chemicals and technologies as part of

their vulnerability assessments and prevention plans and implementing feasible safer technologies in order to minimize potential damage to their facilities from a terrorist attack. While we have registered certain of our sites with DHS in accordance with these regulations, have conducted vulnerability assessments at applicable sites and have received DHS review and approval of our security plans. DHS is

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requiring new risk assessments of all chemical facilities in 2017, which may increase the number of our facilities requiring security plans. These regulations may be revised further and additional legislation may be proposed in the future on this topic. It is possible that such future legislation could contain terms that are more restrictive than what has recently been passed and which would be more costly to us. We cannot predict the final form of currently pending legislation or other related legislation that may be passed and we can provide no assurance that such legislation will not have an adverse effect on our results of operations in a future reporting period. In addition, we may incur liabilities for subsequent damages in the event that we fail to comply with these regulations.

Our businesses depend upon many proprietary technologies, including patents, licenses and trademarks. Our competitive position could be adversely affected if we fail to protect our patents or other intellectual property rights or if we become subject to claims that we are infringing upon the rights of others. Our patents may not provide full protection against competing manufacturers outside of the United States, the European Union countries and certain other developed countries. Weaker protection may adversely impact our sales and results of operations.

Our intellectual property is of particular importance for a number of the specialty chemicals that we manufacture and sell. The trademarks and patents that we own may be challenged, and because of such challenges, we could eventually lose our exclusive rights to use and enforce such patented technologies and trademarks, which could adversely affect our competitive position and results of operations. We are licensed to use certain patents and technology owned by other companies, including foreign companies, to manufacture products complementary to our own products. We pay royalties for these licenses in amounts not considered material, in the aggregate, to our consolidated results.

In some of the countries in which we operate, such as China, the laws protecting patent holders are significantly weaker than in the United States, countries in the European Union and certain other developed countries. Weaker protection may assist competing manufacturers in becoming more competitive in markets in which they might not have otherwise been able to introduce competing products for a number of years. As a result, we tend to rely more heavily upon trade secret and know-how protection in these regions, as applicable, rather than patents.

We also rely on unpatented proprietary know-how and continuing technological innovation and other trade secrets in all regions to develop and maintain our competitive position. Although it is our policy to enter into confidentiality agreements with our employees and third parties to restrict the use and disclosure of trade secrets and proprietary know-how, those confidentiality agreements may be breached. Additionally, adequate remedies may not be available in the event of an unauthorized use or disclosure of such trade secrets and know-how, and others could obtain knowledge of such trade secrets through independent development or other access by legal means. The failure of our patents, trademarks or confidentiality agreements to protect our processes, apparatuses, technology, trade secrets or proprietary know-how and the brands under which we market and sell our products could have a material adverse effect on our business, financial condition, results of operations and cash flows.

We cannot be assured that our products or methods do not infringe on the patents, trademarks or other intellectual property rights of others. Infringement and other intellectual claims or proceedings brought against us, whether successful or not, could result in substantial costs and harm our reputation. Such claims and proceedings can also distract and divert management and key personnel from other tasks important to the success of our business. In addition, intellectual property litigation or claims could force us to do one or more of the following:

- cease selling products that contain asserted intellectual property;
- pay substantial damages for past use of the asserted intellectual property;
- obtain a license from the holder of the asserted intellectual property, which may not be available on reasonable terms;
- and

- redesign or rename, in the case of trademark claims, our products to avoid infringing the rights of third parties.

Such requirements could adversely affect our revenue, increase costs, and harm our financial condition.

Cybersecurity attack, acts of cyber-terrorism, failure of technology systems and other disruptions to our information technology systems could compromise our information, disrupt our operations, and expose us to liability, which may adversely impact our operations.

In the ordinary course of our business, we store sensitive data, including intellectual property, our proprietary business information and that of our customers, suppliers and business partners, and personally identifiable information of our employees in our information technology systems, including in our data centers and on our networks. The secure processing, maintenance and transmission of this data is critical to our operations. Despite our security measures, our



information technology systems may be vulnerable to attacks by hackers or breached or disrupted due to employee error, malfeasance or

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other disruptions. Any such attack, breach or disruption could compromise our information technology systems and the information stored in them could be accessed, publicly disclosed, lost or stolen and our business operations could be disrupted. Any such access, disclosure or other loss of information or business disruption could result in legal claims or proceedings, liability under laws that protect the privacy of personal information, and damage to our reputation, which could adversely impact our operations.

Legislative and regulatory initiatives related to global warming and climate change could have an adverse effect on our operations and the demand for specialty chemicals.

Due to concerns about the risks of global warming and climate change, a number of various international, national and regional legislative and regulatory initiatives to limit greenhouse gas emissions are currently in various stages of discussion or implementation. Legislative and regulatory programs to reduce emissions of greenhouse gases could require us to incur substantially increased capital, operating, maintenance, and compliance costs, such as costs to purchase and operate emissions control systems, costs to acquire emissions allowances, and costs to comply with new regulatory or reporting requirements. In addition, increasing regulation of fuel emissions could substantially increase the distribution and supply chain costs associated with our products. Consequently, legislative and regulatory programs to reduce emissions of greenhouse gases could have an adverse effect on our business, financial condition, results of operations, and cash flows.

In addition, there has been public discussion that climate change may be associated with more extreme weather conditions, such as increased frequency and severity of storms, droughts, and floods. Extreme weather conditions can interfere with our development and production activities, increase our costs of operations or reduce the efficiency of our operations, and potentially increase costs for insurance coverage in the aftermath of such conditions. Significant physical effects of climate change could also have an indirect effect on our financing and operations by disrupting the transportation or process-related services provided by companies or suppliers with whom we have a business relationship.

We are dependent upon a trained, dedicated sales force, the loss of which could materially affect our operations.

Many of our products are sold and supported through dedicated staff and specifically trained personnel. The loss of this sales force due to market or other conditions could affect our ability to sell and support our products effectively, which could have an adverse effect on our results of operations.

Our results of operations are subject to exchange rate and other currency risks. A significant movement in exchange rates could adversely impact our results of operations.

Significant portions of our businesses are conducted in currencies other than the U.S. dollar. Accordingly, foreign currency exchange rates affect our operating results. Effects of exchange rate fluctuations upon our future operating results cannot be predicted because of the number of currencies involved, the variability of currency exposure and the potential volatility of currency exchange rates. We face risks arising from the imposition of exchange controls and currency devaluations. Exchange controls may limit our ability to convert foreign currencies into U.S. dollars or to remit dividends and other payments by our foreign subsidiaries or businesses located in or conducted within a country imposing controls. In certain foreign countries, some components of our cost structure are denominated in U.S. dollars while our revenues are denominated in the local currency. In those cases, currency devaluation could adversely impact our operating margins.

Our unfunded and underfunded defined benefit pension plans and post-retirement health care plans could adversely impact our financial condition, results of operations and cash flows.

The cost of our defined benefit pension and post-retirement health care plans is recognized through operations over extended periods of time and involves many uncertainties during those periods of time. Our funding policy for defined benefit pension plans is to accumulate plan assets through our cash contributions and prudent investment returns, such that, over the long run, they will approximate the present value of projected benefit obligations. Our pension cost is materially affected by certain factors and assumptions, including the discount rate used to measure pension obligations, changes in the life expectancy of plan beneficiaries, the level of plan assets available to fund those obligations at the measurement date and the expected long-term rate of return on plan assets. Significant changes in investment performance or a change in the portfolio mix of invested assets can result in corresponding increases and decreases in the valuation of plan assets or in a change of the expected rate of return on plan assets. Similarly, our post-retirement health care cost is materially affected by certain factors and assumptions, including the discount rate

used to measure these obligations, as well as by changes in the actual cost of providing these medical benefits.

We have underfunded obligations under our U.S. tax-qualified defined benefit pension plans totaling approximately \$11 million on a projected benefit obligation basis as of December 31, 2016. Declines in the value of the plan investments, the discount rate used to measure liabilities, increases in life expectancy of beneficiaries or unfavorable changes in law or regulations that govern pension plan funding could materially change the timing and amount of required funding. Additionally, we sponsor other foreign and non-qualified U.S. pension plans under which there are substantial unfunded liabilities totaling approximately \$73 million on a projected benefit obligation basis as of December 31, 2016. Foreign regulatory authorities may seek to have Chemtura and/or certain of our non-sponsoring subsidiaries take responsibility for some portion of these obligations. Mandatory funding contributions with respect to these obligations and potential unfunded benefit liability claims could have a material adverse effect on our financial condition, results of operations or future cash flows. In addition, we have unfunded post-retirement health care plan liabilities totaling approximately \$86 million on a projected benefit obligation basis at December 31, 2016. Our actual costs with respect to our post-retirement health care plans could exceed our current actuarial projections.

Restrictive covenants in our credit facilities may limit our ability to engage in certain transactions.

Our credit facilities contain various covenants that limit our ability to engage in specified types of transactions. The covenants limit our ability to, among other things, incur additional indebtedness or repay certain indebtedness, create liens, pay dividends on or make other distributions on or repurchase capital stock or make other restricted payments, make investments, and enter into acquisitions, dispositions and joint ventures. Such restrictions in our credit facilities could result in us having to obtain the consent of our lenders in order to take certain actions. We may be unable to obtain such consents from our lenders, or obtaining such consents may be difficult or costly for us. Our ability to expand our business or to address declines in our business may be limited if we are unable to obtain (or hindered from obtaining) such consents.

A breach of any of these covenants could result in a default under our credit facilities and other debt obligations.

Upon the occurrence of an event of default, the lenders could elect to declare all amounts outstanding under our credit facilities immediately due and payable and terminate all commitments to extend further credit. If we were unable to repay those amounts, the lenders could proceed against the collateral granted to them to secure our indebtedness. Our subsidiaries have pledged a significant portion of their assets as collateral under our credit facilities. If the lenders under credit facilities accelerate the repayment of borrowings, we may not have sufficient assets to repay amounts borrowed under the credit facilities which could have a material adverse effect on our cash flow and on the value of our stock.

Future events may impact our deferred tax asset position related to our utilization of net operating losses ("NOLs") and U.S. deferred federal income taxes on undistributed earnings of international affiliates that are considered to be reinvested indefinitely.

We evaluate our ability to utilize deferred tax assets and our need for valuation allowances based on available evidence. This process involves significant management judgment about assumptions that are subject to change from period to period based on changes in tax laws or variances between future projected operating performance and actual results. We are required to establish a valuation allowance for deferred tax assets if we determine, based on available evidence at the time the determination is made, that it is more likely than not that some portion or all of the deferred tax assets will not be utilized. In making this determination, we evaluate all positive and negative evidence as of the end of each reporting period. Future adjustments (either increases or decreases), to a deferred tax asset valuation allowance are determined based upon changes in the expected realization of the net deferred tax assets. The utilization of our deferred tax assets ultimately depends on the existence of sufficient taxable income in either the carry-back or carry-forward periods under the applicable tax law. Due to significant estimates used to establish a valuation allowance and the potential for changes in facts and circumstances, it is reasonably possible that we will be required to record adjustments to a valuation allowance in future reporting periods. Changes to a valuation allowance or the amount of deferred taxes could have a material adverse effect on our business, financial condition and results of operations. Further, while we have no current intention to do so in the foreseeable future, should we change our assertion regarding the permanent reinvestment of the undistributed earnings in foreign operations, a deferred tax liability may need to be established.

If our goodwill, intangible assets or long-lived assets become impaired, we may be required to record a significant charge to earnings.

Under U.S. generally accepted accounting principles (“GAAP”), we review our intangible assets and long-lived assets for impairment when events or changes in circumstances indicate the carrying value may not be recoverable. Goodwill is tested for impairment on July 31 of each year, or more frequently if required. Factors that may be considered a change in circumstances, indicating that the carrying value of our goodwill, intangible assets or long-lived assets may not be recoverable, include, but are not limited to, a decline in stock price and market capitalization, reduced future cash flow estimates, and slower

growth rates in our industry. We may be required to record a significant charge in our financial statements during the period in which any impairment of our goodwill, intangible assets or long-lived assets is determined, negatively impacting our results of operations.

If our estimates or judgments relating to our accounting policies prove to be incorrect, our operating results could be adversely affected.

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the amounts reported in the consolidated financial statements and accompanying notes. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances, as provided in Management's Discussion and Analysis of Financial Condition and Results of Operations. The results of these estimates form the basis for making judgments about the carrying values of assets, liabilities and equity, and the amount of revenue and expenses that are not readily apparent from other sources. Significant assumptions and estimates used in preparing our consolidated financial statements include, among others, those related to allowance for uncollectible accounts receivable, inventories, environmental matters, pension and other post-retirement benefits expense, income taxes and the carrying value of goodwill and long-lived assets. Our operating results may be adversely affected if our assumptions change or if actual circumstances differ from those in our assumptions, which could cause our operating results to fall below the expectations of securities analysts and investors, resulting in a decline in the price of our common stock.

If we fail to establish and maintain adequate internal controls over financial reporting, we may not be able to report our financial results in a timely and reliable manner, which could harm our business and impact the value of our securities.

We depend on our ability to produce accurate and timely financial statements in order to run our business. If we fail to do so, our business could be negatively affected and our independent registered public accounting firm may be unable to attest to the fair presentation of our Consolidated Financial Statements in accordance with U.S. GAAP and the effectiveness of our internal control over financial reporting, as required by Section 404 of the Sarbanes-Oxley Act. Effective internal controls are necessary for us to provide reliable financial reports and to effectively prevent fraud. If we cannot provide reliable financial reports and effectively prevent fraud, our reputation and operating results could be harmed. Even effective internal controls have inherent limitations including the possibility of human error, the circumvention or overriding of controls, or fraud. Therefore, even effective internal controls can provide only reasonable assurance with respect to the preparation and fair presentation of financial statements. In addition, projections of any evaluation of effectiveness of internal control over financial reporting in future periods are subject to the risk that the control may become inadequate because of changes in conditions or a deterioration in the degree of compliance with the policies or procedures.

If we fail to maintain adequate internal controls, including any failure to implement new or improved controls, or if we experience difficulties in their implementation, we could fail to meet our reporting obligations, and there could be a material adverse effect on our business and financial results. In the event that our current control practices deteriorate, we may be unable to accurately report our financial results or prevent fraud, and investor confidence and the market price of our securities may be adversely affected.

If we issue additional shares of common stock in the future, it will result in the dilution of our existing stockholders. Our certificate of incorporation authorizes the issuance of 500 million shares of common stock, of which 100.6 million shares were issued and 63.0 million shares outstanding as of December 31, 2016. Our board of directors (the "Board") has the authority to issue additional shares of common stock up to the authorized capital stated in the certificate of incorporation. The issuance of any new shares of common stock may result in a reduction of the book value or market price of the outstanding shares of our common stock. Additionally, we have an incentive plan that allows for the issuance of up to 11 million shares (currently 4.0 million shares remain available for future grants).

**Item 1B: Unresolved Staff Comments**

None.

Item 2: Properties

The following table sets forth information regarding our principal operating properties and other significant properties as of December 31, 2016. All of the following properties are owned except where otherwise indicated. In general, our operating properties are well maintained, suitably equipped and in good operating condition.

Location	Facility	Reporting Segment
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NORTH AMERICA

United States

Arkansas