

Celanese Corp
Form 10-K
February 07, 2019
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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Form 10-K

☒ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2018

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

(Commission File Number) 001-32410

CELANESE CORPORATION

(Exact Name of Registrant as Specified in its Charter)

Delaware

98-0420726

(State or Other Jurisdiction of Incorporation or Organization) (I.R.S. Employer Identification No.)

222 West Las Colinas Blvd., Suite 900N, Irving, TX

75039-5421

(Address of Principal Executive Offices)

(Zip Code)

(972) 443-4000

(Registrant's telephone number, including area code)

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

Title of Each Class	Name of Each Exchange on Which Registered
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Common Stock, par value \$0.0001 per share	New York Stock Exchange
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3.250% Senior Notes due 2019	New York Stock Exchange
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1.125% Senior Notes due 2023	New York Stock Exchange
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1.250% Senior Notes due 2025	New York Stock Exchange
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2.125% Senior Notes due 2027	New York Stock Exchange
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Securities registered pursuant to Section 12(g) of the Act

None

Indicate by check mark if 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 every Interactive Data File required to be submitted 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 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 the 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, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer,"

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"accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☐ Accelerated filer ☐ Non-accelerated filer ☐ Smaller reporting company ☐ Emerging growth company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

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

The aggregate market value of the registrant's common stock held by non-affiliates as of June 30, 2018 (the last business day of the registrants' most recently completed second fiscal quarter) was \$14,934,861,283.

The number of outstanding shares of the registrant's common stock, \$0.0001 par value, as of January 31, 2019 was 128,100,117.

DOCUMENTS INCORPORATED BY REFERENCE

Certain portions of the registrant's Definitive Proxy Statement relating to the 2019 annual meeting of stockholders, to be filed with the Securities and Exchange Commission, are incorporated by reference into Part III.

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CELANESE CORPORATION

Form 10-K

For the Fiscal Year Ended December 31, 2018

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Special Note Regarding Forward-Looking Statements

Certain statements in this Annual Report on Form 10-K ("Annual Report") or in other materials we have filed or will file with the Securities and Exchange Commission ("SEC"), and incorporated herein by reference, are forward-looking in nature as defined in Section 27A of the Securities Act of 1933, as amended, Section 21E of the Securities Exchange Act of 1934, as amended, and the Private Securities Litigation Reform Act of 1995. You can identify these statements by the fact that they do not relate to matters of a strictly factual or historical nature and generally discuss or relate to forecasts, estimates or other expectations regarding future events. Generally, the words "believe," "expect," "intend," "estimate," "anticipate," "project," "plan," "may," "can," "could," "might," "will" and similar expressions identify forward-looking statements, including statements that relate to such matters as planned and expected capacity increases and utilization rates; anticipated capital spending; environmental matters; legal proceedings; sources of raw materials and exposure to, and effects of hedging of raw material and energy costs and foreign currencies; interest rate fluctuations; global and regional economic, political, business and regulatory conditions; expectations, strategies, and plans for individual assets and products, business segments, as well as for the whole Company; cash requirements and uses of available cash; financing plans; pension expenses and funding; anticipated restructuring, divestiture, and consolidation activities; planned construction or operation of facilities; cost reduction and control efforts and targets and integration of acquired businesses.

Forward-looking statements are not historical facts or guarantees of future performance but instead represent only our beliefs at the time the statements were made regarding future events, which are subject to significant risks, uncertainties, and other factors, many of which are outside of our control and certain of which are listed above. Any or all of the forward-looking statements included in this Annual Report and in any other materials incorporated by reference herein may turn out to be materially inaccurate. This can occur as a result of incorrect assumptions, in some cases based upon internal estimates and analyses of current market conditions and trends, management plans and strategies, economic conditions, or as a consequence of known or unknown risks and uncertainties. Many of the risks and uncertainties mentioned in this Annual Report, such as those discussed in Item 1A. Risk Factors, Item 3. Legal Proceedings and Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations will be important in determining whether these forward-looking statements prove to be accurate. Consequently, neither our stockholders nor any other person should place undue reliance on our forward-looking statements and should recognize that actual results may differ materially from those anticipated by us.

All forward-looking statements made in this Annual Report are made as of the date hereof, and the risk that actual results will differ materially from expectations expressed in this Annual Report will increase with the passage of time. We undertake no obligation, and disclaim any duty, to publicly update or revise any forward-looking statements, whether as a result of new information, future events, changes in our expectations or otherwise. However, we may make further disclosures regarding future events, trends and uncertainties in our subsequent reports on Forms 10-K, 10-Q and 8-K to the extent required under the Exchange Act. The above cautionary discussion of risks, uncertainties and possible inaccurate assumptions relevant to our business includes factors we believe could cause our actual results to differ materially from expected and historical results. Other factors beyond those listed above or in Item 1A. Risk Factors, Item 3. Legal Proceedings and Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations below, including factors unknown to us and factors known to us which we have determined not to be material, could also adversely affect us.

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Item 1. Business

Basis of Presentation

In this Annual Report on Form 10-K, the term "Celanese" refers to Celanese Corporation, a Delaware corporation, and not its subsidiaries. The terms "Company," "we," "our" and "us" refer to Celanese and its subsidiaries on a consolidated basis. The term "Celanese US" refers to the Company's subsidiary, Celanese US Holdings LLC, a Delaware limited liability company, and not its subsidiaries.

Industry

This Annual Report on Form 10-K includes industry data obtained from industry publications and surveys as well as our own internal company surveys. Third-party industry publications, surveys and forecasts generally state that the information contained therein has been obtained from sources believed to be reliable.

Overview

We are a global technology and specialty materials company. We are a leading global producer of high performance engineered polymers that are used in a variety of high-value applications, as well as one of the world's largest producers of acetyl products, which are intermediate chemicals, for nearly all major industries. As a recognized innovator in the chemicals industry, we engineer and manufacture a wide variety of products essential to everyday living. Our broad product portfolio serves a diverse set of end-use applications including automotive, chemical additives, construction, consumer and industrial adhesives, consumer and medical, energy storage, filtration, food and beverage, paints and coatings, paper and packaging, performance industrial and textiles. Our products enjoy leading global positions due to our differentiated business models, large global production capacity, operating efficiencies, proprietary technology and competitive cost structures.

Our large and diverse global customer base primarily consists of major companies across a broad array of industries. We hold geographically balanced global positions and participate in diversified end-use applications. We combine a demonstrated track record of execution, strong performance built on differentiated business models and a clear focus on growth and value creation. Known for operational excellence, reliability and execution of our business strategies, we partner with our customers around the globe to deliver best-in-class technologies and solutions.

Celanese's history began in 1918, the year that its predecessor company, The American Cellulose & Chemical Manufacturing Company, was incorporated. The company, which manufactured cellulose acetate, was founded by Swiss brothers Drs. Camille and Henri Dreyfus. Since that time, the Company has transformed into a leading global technology and specialty materials company. The current Celanese was incorporated in 2004 under the laws of the State of Delaware and is a US-based public company traded on the New York Stock Exchange under the ticker symbol CE.

Headquartered in Irving, Texas, our operations are primarily located in North America, Europe and Asia and consist of 32 global production facilities and an additional 9 strategic affiliate production facilities. As of December 31, 2018, we employed 7,684 people worldwide.

Business Segment Overview

During 2018, we reorganized our operating and reportable segments to align with recent structural and management reporting changes. These changes reflect: (1) the movement of our food ingredients business from the Consumer Specialties reportable segment into our Engineered Materials reportable segment, (2) the renaming of the former Consumer Specialties reportable segment as the Acetate Tow segment, (3) the renaming of the former Advanced Engineered Materials reportable segment as the Engineered Materials segment and (4) the combination of the former Industrial Specialties and former Acetyl Intermediates operating and reportable segments into the Acetyl Chain operating and reportable segment.

We operate principally through three business segments: Engineered Materials, Acetate Tow and Acetyl Chain. See Business Segments below and [Note 26 - Segment Information](#) and [Note 27 - Revenue](#) in the accompanying consolidated financial statements for further information.

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Business Segments

Engineered Materials

Products	Major End-Use Applications	Principal Competitors	Key Raw Materials
<ul style="list-style-type: none"> • Polyoxymethylene ("POM") • Ultra-high molecular weight polyethylene ("UHMW-PE") • Polybutylene terephthalate ("PBT") • Long-fiber reinforced thermoplastics ("LFRT") • Liquid crystal polymers ("LCP") • Thermoplastic elastomers ("TPE") • Nylon compounds or formulations • Polypropylene compounds or formulations • Polyphenylene sulfide ("PPS") • Acesulfame potassium ("Ace-K") • Potassium sorbate • Sorbic acid 	<ul style="list-style-type: none"> • Automotive • Medical • Industrial • Energy storage • Consumer electronics • Appliances • Filtration equipment • Telecommunications • Beverages • Confections • Baked goods 	<ul style="list-style-type: none"> • Ajinomoto Co. Inc. • Anhui Jinhe Industry Co., Ltd. • BASF SE • Daicel Corporation • E. I. du Pont de Nemours and Company • Koninklijke DSM N.V. • Nantong Acetic Acid Chemical Co., Ltd. • The NutraSweet Company • SABIC Innovative Plastics • Solvay S.A. • Suzhou Hope Technology Co., Ltd. • Tate & Lyle plc • Other regional competitors: • Asahi Kasei Corporation • Braskem S.A. • Lanxess AG • Mitsubishi Gas Chemical Company, Inc. • Sumitomo Corporation • Teijin Limited • Toray Industries, Inc. 	<ul style="list-style-type: none"> • Formaldehyde (for POM) • Ethylene (for UHMW-PE and TPE) • Polypropylene (for LFRT) • Fibers (for LFRT) • Acetic anhydride (for LCP) • Propylene (for TPE) • Styrene (for TPE) • Butadiene (for TPE) • PA6 (for nylon) • PA66 (for nylon) • Para-dichlorobenzene (for PPS) • Diketene (for Ace-K) • For potassium sorbate and sorbic acid: • Acetic acid • Crotonaldehyde • Ethylene • Potassium hydroxide

Overview

Our Engineered Materials segment includes our engineered materials business, our food ingredients business and certain strategic affiliates. The engineered materials business leverages our leading project pipeline model to more rapidly commercialize projects. Our unique approach is based on deep customer engagement to develop new projects that are aligned with our skill domains to address critical customer needs and ensure our success and growth.

Engineered Materials is a project-based business where growth is driven by increasing new project commercializations from the pipeline. Our project pipeline model leverages competitive advantages that include our global assets and resources, marketplace presence, broad materials portfolio and differentiated capabilities. Our global assets and resources are represented by our operations, including polymerization, compounding, research and development, and customer technology centers in all regions of the world, including Brazil, China, Germany, Italy, Japan, Mexico, South Korea, the United Kingdom and the US, along with sites associated with our four strategic affiliates in Japan, Malaysia, Saudi Arabia, South Korea and the US.

Our broad marketplace presence reflects our deep understanding of global and customer trends, including the growing global demand for more sophisticated vehicles, elevated environmental considerations, increased global connectivity, and improved health and wellness. These global trends drive a range of needed customer solutions, such as vehicle lightweighting, precise components, aesthetics and appearance, low emissions, heat resistance and low-friction for medical applications, that we are uniquely positioned to address with our materials portfolio. In addition, the

opportunity pipeline process identifies a number of emerging trends early, enabling faster growth.

Our materials portfolio offers differentiated chemical and physical properties that enable them to perform in a variety of conditions. These include enduring a wide range of temperatures, resisting adverse chemical interactions and withstanding deformation. POM, PBT and LFRT are used in a broad range of performance-demanding applications, including fuel system components, automotive safety systems, consumer electronics, appliances, industrial products and medical applications.

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UHMW-PE is used in battery separators, industrial products, filtration equipment, coatings and medical applications. Primary end uses for LCP are electrical applications or products and consumer electronics. Thermoplastic elastomers offer unique attributes for use in automotive, appliances, consumer goods, electrical, electronic and industrial applications. Nylon compounds are used in a range of applications including automotive, consumer, electrical, electronic and industrial. These value-added applications in diverse end uses support the business' global growth objectives.

We also have several differentiated polymer technologies designed for the utility industry, the oil and gas industry, original equipment manufacturers and companies that enhance supply chain efficiency. These include composite technologies for the utility industry that deliver greater reliability, capacity and performance for utility transmission lines.

Our differentiated capabilities are highlighted in our intimate and unique customer engagement which allows us to work across the entirety of our customers' value chain. For example, in the automotive industry we work with original equipment manufacturers as well as system and tier suppliers and injection molders in numerous areas, including polymer formulation and functionality, part and structural design, mold design, color development, part testing and part processing. This broad access allows us to create a demand pull for our solutions. This business segment also includes four strategic affiliates that complement our global reach, improve our ability to capture growth opportunities in emerging economies and positions us as a leading participant in the global specialty polymers industry.

We are a leading global supplier of Ace-K for the food and beverage industry and a leading producer of food protection ingredients, such as potassium sorbate and sorbic acid. We have over fifty years of experience in developing and marketing specialty ingredients for the food and beverage industry and are the only western producer of Ace-K. We have a production facility in Germany, with sales and distribution facilities in all major regions of the world.

On January 2, 2019, we completed the acquisition of 100% of the ownership interests of Next Polymers Ltd., an India-based engineering thermoplastics ("ETP") compounder. The acquisition strengthens our position in the Indian ETP market and further expands our global manufacturing footprint. See Note 30 - Subsequent Events in the accompanying consolidated financial statements for further information.

On October 18, 2018, we announced a capital efficient debottlenecking project of our POM production unit in Frankfurt, Germany to support the continued growth of our Engineered Materials segment. We expect to expand the production capacity by 20kt. This project is expected to be completed in 2020.

On February 1, 2018, we completed the acquisition of 100% of the ownership interests of Omni Plastics, L.L.C. and its subsidiaries ("Omni Plastics"). Omni Plastics specializes in custom compounding of various engineered thermoplastic materials. The acquisition further strengthens our global asset base by adding compounding capacity in the Americas. See Note 4 - Acquisitions, Dispositions and Plant Closures in the accompanying consolidated financial statements for further information.

In October 2017, we announced plans to expand the capacity of our global compounding assets and certain product-specific manufacturing production sites to support the significant growth in our Engineered Materials segment. We expect these new production lines and expansions to add approximately 50-60kt per year in compounding capacity. We also expect the debottlenecking of existing global production lines to provide an additional 10-15kt per year capacity of compounded material production capability and an additional 10-15kt per year of capacity to LFRT production lines. We expect a new production line to add approximately 15kt of GUR® UHMW-PE product capacity. These projects are expected to be completed during 2019.

Key Products

POM. Commonly known as polyacetal in the chemical industry, POM is sold by our engineered materials business under the trademarks Celcon® and Hostaform®. POM is used for diverse end-use applications in the automotive, industrial, consumer and medical industries. These applications include mechanical parts in automotive fuel system components and window lift systems, water handling, conveyor belts, sprinkler systems, drug delivery systems and gears in large and small home appliances.

We continue to innovate and broaden the portfolio of Celcon® and Hostaform® in order to support the industry needs for higher performing polyacetal. We have expanded our portfolio to include products with higher impact resistance

and stiffness, low emissions, improved wear resistance and enhanced appearance such as laser marking and metallic effects.

Polyplastics Co., Ltd., our 45%-owned strategic affiliate ("Polyplastics"), and Korea Engineering Plastics Co., Ltd., our 50%-owned strategic affiliate ("KEPCO"), also manufacture POM and other engineering resins in the Asia-Pacific region.

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The primary raw material for POM is formaldehyde, which is manufactured from methanol. Raw materials are sourced from internal production and from third parties, generally through long-term contracts.

Sales of POM amounted to 11%, 12% and 12% of our consolidated net sales for the years ended December 31, 2018, 2017 and 2016, respectively.

UHMW-PE. Celanese is a global leader in UHMW-PE products which are sold under the trademark GUR®. They are highly engineered thermoplastics designed for a variety of industrial, consumer and medical applications. Primary applications for the material include lead acid battery separators, heavy machine components, lithium ion separator membranes, and noise and vibration dampening tapes. Several specialty grades are also produced for applications in high performance filtration equipment, ballistic fibers, thermoplastic and elastomeric additives, as well as medical implants.

Polyesters. Our products include a series of thermoplastic polyesters including Celanex® PBT, Impet® PET (polyethylene terephthalate) and Thermx® PCT (polycyclohexylene-dimethylene terephthalate), as well as Riteflex®, a thermoplastic polyester elastomer. These products are used in a wide variety of automotive, electrical and consumer applications, including ignition system parts, radiator grilles, electrical switches, appliance and sensor housings, light emitting diodes and technical fibers.

Nylon. Our nylon products include Nylfor® A (PA 6.6), Nylfor® B (PA 6), NILAMID® (PA 6, PA 66, PPA), FRIANYL® (flame retardant PA 6, PA 66, PPA compounds) and ECOMID® (recycled polyamide) and are used in automotive, appliances, industrial and consumer applications due to their mechanical properties, high impact resistance, resistance to organic solvents, high wear and fatigue resistance even at high temperatures, and easy processing and molding.

LFRT. Celstran® and Factor®, our LFRT products, impart extra strength and stiffness, making them more suitable for larger parts than conventional thermoplastics. These products are used in automotive, transportation and industrial applications, such as instrument panels, consoles and front end modules. LFRTs meet a wide range of end-user requirements and are excellent candidates for metal replacement where they provide the required structural integrity with significant weight reduction, corrosion resistance and the potential to lower manufacturing costs.

LCP. Vectra® and Zenite®, our LCP brands, are primarily used in electrical and electronics applications for precision parts with thin walls and complex shapes and applications requiring heat dissipation. They are also used in high heat cookware applications.

TPE. Forprene®, Sofprene® T, Pibiflex® and Laprene®, our TPE brands, are primarily used in automotive, construction, appliances and consumer applications due to their ability to combine the advantages of both flexible and plastic materials. These materials are selected for their ability to stretch and return to their near original shape creating a longer life and better physical range than other materials.

Polypropylene. Our polypropylene products include Polifor®, Litepol® and Tecnoprene® and are primarily used in automotive, appliances, electrical and consumer applications due to their high impact and fatigue resistance, exceptional rigidity at high temperatures and an ability to withstand chemical agents.

Sunett® sweetener. Ace-K, a non-nutritive high intensity sweetener sold under the trademark Sunett®, is used in a variety of beverages, confections and dairy products throughout the world. Sunett® sweetener is the ideal blending partner for caloric and non-caloric sweeteners as it balances the sweetness profile. It is recognized in the food industry for its consistent product quality and reliable supply. The primary raw material for Sunett® is diketene.

Food protection ingredients. Our food protection ingredients, potassium sorbate and sorbic acid, are mainly used in foods, beverages and personal care products.

Customers

Engineered Materials' principal customers are original equipment manufacturers and their suppliers serving the automotive, medical, industrial and consumer industries. We utilize our customer options mapping process to collaborate with our customers to identify customized solutions that leverage our broad range of polymers and technical expertise. Our engineered materials business has long-standing relationships through multi-year and annual arrangements with many of its major customers and utilizes distribution partners to expand its customer base. We primarily sell Sunett® sweetener to a limited number of large multinational and regional customers in the food and beverage industry under multi-year and annual contracts. Food protection ingredients are primarily sold through

regional distributors to small and medium sized customers and directly to large multinational customers in the food industry.

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As Engineered Materials is a project-based business focused on solutions, the pricing of products in this segment is primarily based on the value-in-use and is largely independent of changes in the cost of raw materials. Therefore, in general, margins may expand or contract in response to changes in raw material costs in the short-term.

See Note 27 - Revenue in the accompanying consolidated financial statements for further information.

Acetate Tow

Products	Major End-Use Applications	Principal Competitors	Key Raw Materials
<ul style="list-style-type: none"> • Acetate tow • Acetate flake 	<ul style="list-style-type: none"> • Filtration • Films • Flexible packaging 	<ul style="list-style-type: none"> • Blackstone Rhodia • Daicel Corporation • Eastman Chemical Company • Mitsubishi Rayon Co., Ltd 	<ul style="list-style-type: none"> • Wood pulp • Acetic acid • Acetic anhydride

Overview

Our Acetate Tow business is a leading global producer and supplier of acetate tow and acetate flake, primarily used in filter products applications. We hold an approximately 30% ownership interest in three separate ventures in China that produce acetate flake and acetate tow. China National Tobacco Corporation, a Chinese state-owned tobacco entity, has been our venture partner for over three decades. Our Acetate Tow business has production sites in Belgium, Mexico and the US, along with sites at our three Acetate Tow strategic affiliates in China.

In June 2017, we, through various subsidiaries, entered into an agreement with affiliates of The Blackstone Group L.P. (the "Blackstone Entities") to form a joint venture which would combine substantially all of the operations of our Acetate Tow business and the operations of the Rhodia Acetow cellulose acetate business formerly operated by Solvay S.A. and acquired by the Blackstone Entities in June 2017. The parties were subsequently unable to reach an agreement with the European Commission on acceptable conditions to allow the proposed joint venture to proceed. The demands by the European Commission eliminated the primary advantages of the transaction. As a result, on March 19, 2018, we and the Blackstone Entities abandoned our agreement to form the proposed joint venture. See Note 4 - Acquisitions, Dispositions and Plant Closures in the accompanying consolidated financial statements for further information.

Key Products

Acetate tow and acetate flake. Acetate tow is a fiber used primarily in cigarette filters. In order to produce acetate tow, we first produce acetate flake by processing wood pulp with acetic acid and acetic anhydride. Wood pulp generally comes from reforested trees and is purchased externally from a variety of sources, and acetic anhydride is an intermediate chemical that we produce from acetic acid in our intermediate chemistry business. Acetate flake is then further processed into acetate tow.

Sales of acetate tow amounted to 8%, 10% and 14% of our consolidated net sales for the years ended December 31, 2018, 2017 and 2016, respectively.

Customers

Acetate tow is sold principally to the major tobacco companies that account for a majority of worldwide cigarette production. Contracts with most of our customers are generally entered into on an annual or multi-year basis. The pricing of products within the Acetate Tow segment is sensitive to demand and is primarily based on the value-in-use. Many sales are conducted under contracts with pricing for one or more years. As a result, margins may expand or contract in response to changes in raw material costs over these similar periods, and we may be unable to adjust pricing in the short to medium term due to other factors, such as the intense level of competition in the industry. See Note 27 - Revenue in the accompanying consolidated financial statements for further information.

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Acetyl Chain

Products	Major End-Use Applications	Principal Competitors	Key Raw Materials
Intermediate chemistry		<ul style="list-style-type: none"> • BASF SE • BP PLC • Chang Chun Petrochemical Co., Ltd. • Daicel Corporation • DowDupont Inc. • Eastman Chemical Company • E. I. du Pont de Nemours and Company • Jiangsu Sopo (Group) Co., Ltd. • Kuraray Co., Ltd. • LyondellBasell Industries N.V. • Nippon Gohsei • Perstorp Inc. • Showa Denko K.K. 	
<ul style="list-style-type: none"> • Acetic acid • VAM • Acetic anhydride • Acetaldehyde • Ethyl acetate • Formaldehyde • Butyl acetate 	<ul style="list-style-type: none"> • Paints • Coatings • Adhesives • Lubricants • Pharmaceuticals • Films • Textiles • Inks • Plasticizers • Solvents 		<p>For acetic acid and Vinyl acetate monomer ("VAM"):</p> <ul style="list-style-type: none"> • Carbon monoxide • Methanol • Ethylene <p>For solvents and derivatives:</p> <ul style="list-style-type: none"> • Methanol • Acetic acid
Emulsion polymers		<ul style="list-style-type: none"> • BASF SE • Dairen Chemical Corporation • The Dow Chemical Company • Wacker Chemie AG 	
<ul style="list-style-type: none"> • Conventional emulsions • Vinyl acetate ethylene ("VAE") emulsions 	<ul style="list-style-type: none"> • Paints • Coatings • Adhesives • Textiles • Paper finishing 		<ul style="list-style-type: none"> • VAM • Ethylene • Acrylate esters • Styrene
EVA polymers		<ul style="list-style-type: none"> • Arkema • E. I. du Pont de Nemours and Company • ExxonMobil Chemical 	
<ul style="list-style-type: none"> • Ethylene vinyl acetate ("EVA") resins and compounds • Low-density polyethylene resins ("LDPE") 	<ul style="list-style-type: none"> • Flexible packaging products • Lamination • Automotive parts • Hot melt adhesives 		<ul style="list-style-type: none"> • VAM • Ethylene

Overview

The Acetyl Chain segment, which includes our intermediate chemistry, emulsion polymers and EVA polymers businesses, is active in every major global industrial sector and serves diverse consumer end-use applications. These include traditional vinyl-based end uses, such as paints and coatings and adhesives, as well as other unique, high-value end uses including flexible packaging, thermal laminations, wire and cable, and compounds.

Our intermediate chemistry business produces and supplies acetyl products, including acetic acid, VAM, acetic anhydride and acetate esters. These products are generally used as starting materials for colorants, paints, adhesives, coatings and pharmaceuticals. Our intermediate chemistry business also produces organic solvents and intermediates for pharmaceutical, agricultural and chemical products.

We have focused in recent years on enhancing our ability to drive incremental value through our global production network and productivity initiatives as well as proactively managing the intermediate chemistry business in response to trade flows and prevailing industry trends. Our intermediate chemistry business has production sites in China, Germany, Mexico, Singapore and the US. We are a global industry leader, with a broad acetyls product portfolio, leading technology, low cost production footprint and a global supply chain. With decades of experience, advanced

proprietary process technology and favorable capital and production costs, we are a leading global producer of acetic acid and VAM. AOPlus®3 technology extends our historical technology advantage and enables us to construct a greenfield acetic acid facility with a capacity of 1.8 million metric tons at a

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lower capital cost than our competitors. Our VAntage®2 technology could increase VAM capacity by up to 50% to meet growing customer demand globally with minimal investment. We believe our production technology is among the lowest cost in the industry and provides us with global growth opportunities through low cost expansions and a cost advantage over our competitors.

Our emulsion polymers business is a leading global producer of vinyl acetate-based emulsions and develops products and application technologies to improve performance, create value and drive innovation in applications such as paints and coatings, adhesives, construction, glass fiber, textiles and paper. Our emulsion polymers products are sold under globally and regionally recognized brands including EcoVAE®, Mowilith®, Vinamul®, Celvolit®, Dur-O-Set®, TufCOR® and Avicor®. The emulsion polymers business has production facilities in Canada, China, Germany, the Netherlands, Singapore, Sweden and the US and is supported by expert technical service regionally.

Our EVA polymers business is a leading North American manufacturer of a full range of specialty EVA resins and compounds as well as select grades of LDPE. Sold under the Ateva® and VitalDose® brands, these products are used in many applications, including flexible packaging films, lamination film products, hot melt adhesives, automotive parts and carpeting. Our EVA polymers business has a production facility in Canada.

Our intermediate chemistry business produces VAM, a primary raw material for our emulsion polymers and EVA polymers businesses. Ethylene, another key raw material, is purchased externally from a variety of sources through annual or multi-year contracts.

Our emulsion polymers business has experienced significant growth in Asia, and we have made investments to support continued growth in the region including production at our VAE emulsions unit in Singapore, supporting growing demand for ecologically friendly materials in Southeast Asia. In addition to geographic growth, the businesses are focused on supporting our overall manufacturing footprint strategy to increase value, such as integrating our production sites to provide critical economies of scale.

Key Products

Acetyl Products. Acetyl products include acetic acid, VAM, acetic anhydride and acetaldehyde. Acetic acid is primarily used to manufacture VAM, purified terephthalic acid and other acetyl derivatives. VAM is used in a variety of adhesives, paints, films, coatings and textiles. Acetic anhydride is a raw material used in the production of cellulose acetate, detergents and pharmaceuticals. Acetaldehyde is a major feedstock for the production of a variety of derivatives, such as pyridines, which are used in agricultural products. We manufacture acetic acid, VAM and acetic anhydride for our own use in producing downstream, value-added products, as well as for sale to third parties. Acetic acid and VAM, our basic acetyl intermediates products, leverage global supply and demand fundamentals. The principal raw materials in these products are carbon monoxide, which we generally purchase under long-term contracts, and methanol and ethylene, which we generally purchase under both annual and multi-year contracts. Generally, methanol and ethylene are commodity products available from a wide variety of sources, while carbon monoxide is typically purpose-made in close proximity.

We have a joint venture, Fairway Methanol LLC ("Fairway"), with Mitsui & Co., Ltd., of Tokyo, Japan ("Mitsui"), in which we own a 50% interest, for the production of methanol at our integrated chemical plant in Clear Lake, Texas. The methanol unit utilizes natural gas in the US Gulf Coast region as a feedstock. Almost all of our North American methanol needs are met from our share of the production, as well as the long-term contract we have with our joint venture partner, Mitsui.

In January 2019, we announced a global reconfiguration of the acetic acid production footprint by expanding the acetic acid capacity at our Clear Lake, Texas production facility to approximately 2 million tons by late 2021, with limited net change in our total system tonnage via equivalent productivity options in Singapore and Nanjing, China. Further, we announced the signing of an agreement to acquire a 365kt synthesis gas production unit from Linde, located at our Clear Lake, Texas facility.

In April 2018, we announced a series of capital efficient debottlenecking projects across our global network of acetyls manufacturing plants. We expect these technology-oriented process improvement projects to add 140kt per year of capacity for acetic acid and 150kt per year of capacity for VAM, when required by demand growth, through 2020.

Sales from acetyl products amounted to 31%, 27% and 29% of our consolidated net sales for the years ended December 31, 2018, 2017 and 2016, respectively.

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Solvents and Derivatives. We manufacture a variety of solvents, formaldehyde and other chemicals, which in turn are used in the manufacture of paints, coatings, adhesives and other products. Many solvents and derivatives products are derived from our production of acetic acid. Primary products are:

• Ethyl acetate, an acetate ester that is a solvent used in coatings, inks and adhesives;

• Butyl acetate, an acetate ester that is a solvent used in inks, pharmaceuticals and perfume; and

• Formaldehyde and paraformaldehyde, which are primarily used to produce adhesive resins for plywood, particle board, coatings, POM engineering resins and a compound used in making polyurethane.

Emulsion Polymers. Our emulsion polymers business produces conventional vinyl- and acrylate-based emulsions and VAE emulsions. VAE emulsions are a key component of water-based architectural coatings, adhesives, non-wovens, textiles, glass fiber and other applications. VAE emulsions are in high demand in Europe and Asia as they enable low volatile organic compound paints, specifically in interior paints.

Sales from emulsion polymer products amounted to 13%, 13% and 15% of our consolidated net sales for the years ended December 31, 2018, 2017 and 2016, respectively.

EVA Polymers. Our EVA polymers business produces low-density polyethylene, EVA resins and compounds.

Low-density polyethylene is produced in high-pressure reactors from ethylene, while EVA resins and compounds are produced in high-pressure reactors from ethylene and VAM.

Customers

Our intermediate chemistry business sells its products both directly to customers and through distributors. Acetic acid, VAM and acetic anhydride are global businesses, and we generally supply our customers under a mix of short- and long-term agreements. Acetic acid, VAM and acetic anhydride customers produce polymers used in water-based paints, adhesives, paper coatings, polyesters, film modifiers, pharmaceuticals, cellulose acetate and textiles. We have long-standing relationships with most of these customers. Solvents and derivatives are sold to a diverse group of regional and multinational customers under multi-year contracts and on the basis of long-standing relationships. Solvents and derivatives customers are primarily engaged in the production of paints, coatings and adhesives. We manufacture formaldehyde for our own use as well as for sale to a few regional customers.

Emulsion and EVA polymers products are sold to a diverse group of regional and multinational customers. Customers of our emulsion polymers business are manufacturers of water-based paints and coatings, adhesives, paper, building and construction products, glass fiber, non-wovens and textiles. Customers of our EVA polymers business are engaged in the manufacture of a variety of products, including hot melt adhesives, automotive components, thermal laminations, and flexible and food packaging materials.

Pricing of our products within the Acetyl Chain segment is influenced by changes in the cost of raw materials.

Therefore, in general, there is a direct correlation between the cost of raw materials and our net sales for most products. This impact to pricing typically lags changes in raw material costs over months or quarters and impacts profit margins over those periods.

See Note 27 - Revenue in the accompanying consolidated financial statements for further information.

Other Activities

Other Activities primarily consists of corporate center costs, including administrative activities such as finance, information technology and human resource functions, interest income and expense associated with our financing activities and results of our captive insurance companies. Our two wholly-owned captive insurance companies are a key component of our global risk management program, as well as a form of self-insurance for our liability and workers compensation risks. The captive insurance companies retain risk at levels approved by management and obtain reinsurance coverage from third parties to limit the net risk retained. One of the captive insurance companies also insures certain third-party risks. Other Activities also includes the interest cost, expected return on assets and net actuarial gains and losses components of our net periodic benefit cost for our defined benefit pension plans and other postretirement plans, which are not allocated to our business segments. Ongoing merger, acquisition and integration related costs are also included in Other Activities.

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Strategic Affiliates

Our strategic affiliates represent an important component of our strategy for accelerated growth and global expansion. We have a substantial portfolio of affiliates in various regions, including Asia-Pacific, North America and the Middle East. These affiliates, some of which date back as far as the 1960s, have sizeable operations and are significant within their industries.

With shared characteristics such as products, applications and manufacturing technology, these strategic affiliates complement and extend our technology and specialty materials portfolio. We have historically entered into these investments to gain access to local demand, minimize costs and accelerate growth in areas we believe have significant future business potential.

Our strategic affiliates contribute substantial earnings and cash flows to us. During the year ended December 31, 2018, our equity method strategic affiliates generated combined sales of \$2.6 billion, resulting in our recording \$203 million of equity in net earnings of affiliates and \$187 million of dividends.

Our strategic affiliates as of December 31, 2018 are as follows:

	Location of Headquarters	Ownership	Partner(s)	Year Entered
Equity Investments				
Engineered Materials				
National Methanol Company	Saudi Arabia	25 %	Saudi Basic Industries Corporation (50%); Texas Eastern Arabian Corporation Ltd. (25%)	1981
KEPCO	South Korea	50 %	Mitsubishi Gas Chemical Company, Inc. (40%); Mitsubishi Corporation (10%)	1999
Polyplastics	Japan	45 %	Daicel Corporation (55%)	1964
Fortron Industries LLC	US	50 %	Kureha America Inc. (50%)	1992
Equity Investments Without Readily Determinable Fair Value				

Acetate Tow

Kunming Cellulose Fibers Co. Ltd.	China	30 %	China National Tobacco Corporation (70%)	1993
Nantong Cellulose Fibers Co. Ltd.	China	31 %	China National Tobacco Corporation (69%)	1986
Zhuhai Cellulose Fibers Co. Ltd.	China	30 %	China National Tobacco Corporation (70%)	1993

National Methanol Company (Ibn Sina). National Methanol Company represents approximately 1% of the world's methanol production capacity and is one of the world's largest producers of methyl tertiary-butyl ether, a gasoline additive. Its production facilities are located in Saudi Arabia. Saudi Basic Industries Corporation ("SABIC") is responsible for all product marketing. Methanol is a key feedstock for POM production and is produced by our Ibn Sina affiliate which provides an economic hedge against raw material costs in our engineered materials business. Ibn Sina constructed a 50,000 metric ton POM production facility in Saudi Arabia. The facility supplies POM to support Engineered Materials' future growth plans as well as our venture partners' regional business development and was declared commercially operational in the fourth quarter of 2017. Upon successful startup of the POM facility, our indirect economic interest in Ibn Sina increased from 25% to 32.5%.

KEPCO. KEPCO is the leading producer of POM in South Korea. KEPCO has polyacetal production facilities in Ulsan, South Korea, compounding facilities for PBT and nylon in Pyongtaek, South Korea, and participates with Polyplastics and Mitsubishi Gas Chemical Company, Inc. in a world-scale POM facility in Nantong, China.

Polyplastics. Polyplastics is a leading supplier of engineered plastics. Polyplastics is a manufacturer and/or marketer of POM, LCP and PPS, with principal production facilities located in Japan and Malaysia.

Fortron Industries LLC. Fortron Industries LLC ("Fortron") is a leading global producer of PPS, sold under the Fortron® brand, which is used in a wide variety of automotive and other applications, especially those requiring heat and/or chemical resistance. Fortron's facility is located in Wilmington, North Carolina. This venture combines our sales, marketing, distribution, compounding and manufacturing expertise with the PPS polymer technology expertise of Kureha America Inc.

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Acetate Tow strategic ventures. Our Acetate Tow ventures generally fund their operations using operating cash flow and pay dividends based on each ventures' performance in the preceding year. In 2018, 2017 and 2016, we received cash dividends of \$112 million, \$107 million and \$107 million, respectively.

Although our ownership interest in each of our Acetate Tow ventures exceeds 20%, we account for these investments at cost after considering observable price changes for similar instruments, minus impairment, if any, because we determined that we cannot exercise significant influence over these entities due to local government investment in and influence over these entities, limitations on our involvement in the day-to-day operations and the present inability of the entities to provide timely financial information prepared in accordance with generally accepted accounting principles in the United States of America. Further, these investments were determined not to have a readily determinable fair value.

Other Equity Method Investments

InfraSerts. We hold indirect ownership interests in several German InfraServ Groups that own and develop industrial parks and provide various technical and administrative services to tenants. Our ownership interest in the equity investments in InfraServ affiliates are as follows:

As of December 31, 2018

(In percentages)

InfraServ GmbH & Co. Gendorf KG 30

InfraServ GmbH & Co. Hoechst KG 32

InfraServ GmbH & Co. Knapsack KG 22

Intellectual Property

We attach importance to protecting our intellectual property, including safeguarding our confidential information and through our patents, trademarks and copyrights, in order to preserve our investment in research and development, manufacturing and marketing. Patents may cover processes, equipment, products, intermediate products and product uses. We also seek to register trademarks as a means of protecting the brand names of our Company and products. Patents. In most industrial countries, patent protection exists for new substances and formulations, as well as for certain unique applications and production processes. However, we do business in regions of the world where intellectual property protection may be limited and difficult to enforce.

Confidential Information. We maintain stringent information security policies and procedures wherever we do business. Such information security policies and procedures include data encryption, controls over the disclosure and safekeeping of confidential information and trade secrets, as well as employee awareness training.

Trademarks. Amcel®, AOPlus®, Ateva®, Avicor®, Celanese®, Celanex®, Celanyl™, Celcon®, Celstran®, Celvolit®, Clarifoil®, Dur-O-Set®, ECOMID®, EcoVAE®, Factor®, Forflex®, Forprene®, FRIANYL®, Fortron®, GHR®, Gumfit®, GUR®, Hostaform®, Laprene®, MetaLX®, Mowilith®, MT®, NILAMID®, Nutrinova®, Nylfor®, OmniLon®, Pibiflex®, Pibifor®, Pibiter®, Polifor®, Resyn®, Riteflex®, SlideX®, Sofprene®, Sofpur®, Sunett®, Talcoprene®, Tecnoprene®, Thermx®, TufCOR®, Vantage®, Vectra®, Vinac®, Vinamul®, VitalDose®, Zenite® and certain other branded products and services named in this document are registered or reserved trademarks or service marks owned or licensed by Celanese. The foregoing is not intended to be an exhaustive or comprehensive list of all registered or reserved trademarks and service marks owned or licensed by Celanese. Fortron® is a registered trademark of Fortron Industries LLC. Hostaform® is a registered trademark of Hoechst GmbH. Mowilith® and NILAMID® are registered trademarks of Celanese in most European countries.

We monitor competitive developments and defend against infringements on our intellectual property rights. Neither Celanese nor any particular business segment is materially dependent upon any one patent, trademark, copyright or trade secret.

Environmental and Other Regulation

Matters pertaining to environmental and other regulations are discussed in Item 1A. Risk Factors, as well as Note 2 - Summary of Accounting Policies, Note 16 - Environmental and Note 24 - Commitments and Contingencies in the accompanying consolidated financial statements.

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Employees

Our employees employed on a continuing basis throughout the world are as follows:

Employees
as of
December
31, 2018

North America

US	2,693
Canada	201
Mexico	648
Total	3,542

Europe

Germany	1,574
Other Europe	1,350
Total	2,924

Asia	1,083
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Rest of World	135
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Total	7,684
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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 net sales or financial performance.

Available Information — Securities and Exchange Commission ("SEC") Filings and Corporate Governance Materials

We make available free of charge, through our internet website (<http://www.celanese.com>), our annual reports 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 well as ownership reports on Form 3 and Form 4, as soon as reasonably practicable after electronically filing such material with, or furnishing it to, the SEC. References to our website in this report are provided as a convenience, and the information on our website is not, and shall not be deemed to be a part of this report or incorporated into any other filings we make with the SEC.

The SEC maintains a website that contains reports, proxy and information statements, and other information regarding issuers, including Celanese Corporation, that electronically file with the SEC at <http://www.sec.gov>.

We also make available free of charge, through our website, our Corporate Governance Guidelines of our Board of Directors and the charters of each of the standing committees of our Board of Directors.

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Item 1A. Risk Factors

Many factors could have an effect on our financial condition, cash flows and results of operations. We are subject to various risks resulting from changing economic, environmental, political, industry, business, financial and regulatory conditions. The factors described below represent our principal risks.

Risks Related to Our Business

We are exposed to general economic, political and regulatory conditions and risks in the countries in which we have operations and customers.

We operate globally and have customers in many countries. Our major facilities are primarily located in North America, Europe and Asia, and we hold interests in affiliates that operate in the United States ("US"), Germany, China, Japan, Malaysia, South Korea and Saudi Arabia. Our principal customers are similarly global in scope and the prices of our most significant products are typically regional or world market prices. Consequently, our business and financial results are affected, directly and indirectly, by world economic conditions, including instability in credit markets, declining consumer and business confidence, fluctuating commodity prices and interest rates, volatile exchange rates and other challenges such as the changing regulatory environment.

Our operations are also subject to global political conditions. For example, any future withdrawal or renegotiation of trade agreements, or the failure to reach agreement over trade agreements, or the imposition of new or increased tariffs on our products or raw materials, or the more aggressive prosecution of trade disputes with countries like China, may increase costs or reduce profitability, or adversely affect our ability to operate our business and execute our growth strategy. In addition, it may be more difficult for us to enforce agreements, collect receivables, receive dividends and repatriate earnings through foreign legal systems. In certain foreign jurisdictions our operations are subject to nationalization and expropriation risk and some of our contractual relationships within these jurisdictions are subject to cancellation without full compensation for loss. Furthermore, in certain cases where we benefit from local government subsidies or other undertakings, such benefits are subject to the solvency of local government entities and are subject to termination without meaningful recourse or remedies.

We have invested significant resources in China and other Asian countries. This region's growth may slow, and we may fail to realize the anticipated benefits associated with our investment there and, consequently, our financial results may be adversely impacted.

In addition, we have significant operations and financial relationships based in Europe. Historically, sales originating in Europe have accounted for over one-third of our net sales. For example, in 2018, sales originating in Europe accounted for approximately 40% of our net sales. Adverse conditions in the European economy related to the United Kingdom's exit from the European Union ("EU") membership or otherwise may negatively impact our overall financial results due to reduced economic growth and resulting in decreased end-use customer demand.

We are subject to risks associated with the increased volatility in the prices and availability of key raw materials and energy, which could have a significant adverse effect on the margins of our products and our financial results.

We purchase significant amounts of ethylene, methanol, carbon monoxide and natural gas from third parties primarily for use in our production of basic chemicals in our intermediate chemistry business, principally acetic acid, vinyl acetate monomer ("VAM") and formaldehyde. We use a portion of our output of these chemicals, in turn, as inputs in the production of downstream products in all of our business segments. We also purchase some of these raw materials for use in our emulsion polymers and EVA polymer businesses, primarily for vinyl acetate ethylene emulsions and ethylene vinyl acetate production, as well as significant amounts of wood pulp for use in our production of acetate tow. The price of many of these items is dependent on the available supply of that item and may increase significantly as a result of uncertainties associated with war, terrorist activities, civil unrest, epidemics, pandemics, weather, natural disasters, the effects of climate change or political instability, plant or production disruptions, strikes or other labor unrest, breakdown or degradation of transportation infrastructure used in the delivery of raw materials and energy commodities, or changes in laws or regulations in any of the countries in which we have significant suppliers. In particular, to the extent of our vertical integration in the production of chemicals, shortages in the availability of raw material chemicals, such as natural gas, ethylene and methanol, or the loss of our dedicated supplies of carbon monoxide, may have an increased adverse impact on us as it can cause a shortage in intermediate and finished products. Such shortages would adversely impact our ability to produce certain products and increase our costs

resulting in reduced margins and adverse financial results.

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We are exposed to volatility in the prices of our raw materials and energy. Although we have long-term supply agreements, multi-year purchasing and sales agreements and forward purchase contracts providing for the supply of ethylene, methanol, carbon monoxide, wood pulp, natural gas and electricity, the contractual prices for these raw materials and energy can vary with economic conditions and may be highly volatile. In addition to the factors noted above that may impact supply or price, factors that have caused volatility in our raw material prices in the past and which may do so in the future include:

- Shortages of raw materials due to increasing demand, e.g., from growing uses or new uses;
- Capacity constraints, e.g., due to construction delays, labor disruption, involuntary shutdowns or turnarounds;
- The inability of a supplier to meet our delivery orders or a supplier's choice not to fulfill orders or to terminate a supply contract or our inability to obtain or renew supply contracts on favorable terms;
- The general level of business and economic activity; and
- The direct or indirect effect of governmental regulation (including the impact of government regulation relating to climate change).

If we are not able to fully offset the effects of higher energy and raw material costs through price increases, productivity improvements or cost reduction programs, or if such commodities become unavailable, it could have a significant adverse effect on our ability to timely and profitably manufacture and deliver our products resulting in reduced margins and adverse financial results.

We have a practice of maintaining, when available, multiple sources of supply for raw materials and services. However, some of our individual plants may have single sources of supply for some of their raw materials, such as carbon monoxide, steam and ethylene, or site services. Although we have been able to obtain sufficient supplies of raw materials and services, there can be no assurance that unforeseen developments will not affect our ability to source raw materials or services in the future. Even if we have multiple sources of supply for a raw material or a service, there can be no assurance that these sources can make up for the loss of a major supplier. Furthermore, if any sole source or major supplier were unable or unwilling to deliver a raw material or a service for an extended period of time, we may not be able to find an acceptable alternative or any such alternative could result in increased costs. It is also possible profitability will be adversely affected if we are required to qualify additional sources of supply for a raw material or a service to our specifications in the event of the loss of a sole source or major supplier.

Almost all of our supply of methanol in North America is currently obtained from our joint venture, Fairway Methanol LLC ("Fairway"), with Mitsui & Co., Ltd., of Tokyo, Japan, in which we own a 50% interest, for the production of methanol at our integrated chemical plant in Clear Lake, Texas.

Production at our manufacturing facilities, or at our suppliers', could be disrupted for a variety of reasons, which could prevent us from producing enough of our products to maintain our sales and satisfy our customers' demands.

A disruption in production at one or more of our manufacturing facilities, or our suppliers, could have a material adverse effect on our business. Disruptions could occur for many reasons, including fire, natural disasters, weather, unplanned maintenance or other manufacturing problems, disease, strikes or other labor unrest, transportation interruption, government regulation, political unrest or terrorism. Alternative facilities with sufficient capacity or capabilities may not be available, may cost substantially more or may take a significant time to start production, each of which could negatively affect our business and financial performance. If one of our key manufacturing facilities is unable to produce our products for an extended period of time, our sales may be reduced by the shortfall caused by the disruption and we may not be able to meet our customers' needs, which could cause them to seek other suppliers. In particular, production disruptions at our manufacturing facilities that produce chemicals used as inputs in the production of chemicals in other business segments, such as acetic acid, VAM and formaldehyde, could have a more significant adverse effect on our business and financial performance and results of operations to the extent of such vertical integration. Furthermore, to the extent a production disruption occurs at a manufacturing facility that has been operating at or near full capacity, the resulting shortage of our product could be particularly harmful because production at such manufacturing facility may not be able to reach levels achieved prior to the disruption.

Failure to develop new products and production technologies or to implement productivity and cost reduction initiatives successfully, may harm our competitive position.

Our operating results depend significantly on the development of commercially viable new products, product grades and applications, as well as process technologies, free of any legal restrictions. If we are unsuccessful in developing new products, applications and production processes in the future, including failing to leverage our opportunity pipeline in our Engineered

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Materials segment, our competitive position and operating results may be negatively affected. However, as we invest in new technology, we face the risk of unanticipated operational or commercialization difficulties, including an inability to obtain necessary permits or governmental approvals, the development of competing technologies, failure of facilities or processes to operate in accordance with specifications or expectations, construction delays, cost over-runs, the unavailability of financing, required materials or equipment and various other factors. Likewise, we have undertaken and are continuing to undertake initiatives in all of our business segments to improve productivity and performance and to generate cost savings. These initiatives may not be completed or beneficial or the estimated cost savings from such activities may not be realized.

Our business exposes us to potential product liability claims and recalls, which could adversely affect our financial condition and performance.

The development, manufacture and sale of specialty chemical products by us, including products produced for the food and beverage, cigarette, automobile, construction, aerospace, medical device and pharmaceutical industries, involves a risk of exposure to product liability claims, product recalls, product seizures and related adverse publicity. A product liability claim or judgment against us could also result in substantial and unexpected expenditures, affect consumer or customer confidence in our products, and divert management's attention from other responsibilities. Although we maintain product liability insurance, there can be no assurance that this type or the level of coverage is adequate or that we will be able to continue to maintain our existing insurance or obtain comparable insurance at a reasonable cost, if at all. A product recall or a partially or completely uninsured judgment against us could have a material adverse effect on our results of operations or financial condition. Although we have standard contracting policies and controls, we may not always be able to contractually limit our exposure to third party claims should our failure to perform result in downstream supply disruptions or product recalls.

We could be subject to damages based on claims brought against us by our customers or lose customers as a result of the failure of our products to meet certain quality specifications.

Our products provide important performance attributes to our customers' products. If one of our products fails to perform in a manner consistent with applicable quality specifications, a customer could seek replacement of the product or damages for costs incurred as a result of the product failing to perform as guaranteed. A successful claim or series of claims against us could have a material adverse effect on our financial condition and results of operations and could result in a loss of one or more key customers.

Our future success depends in part on our ability to protect our intellectual property rights and our rights to use our intellectual property. Our inability to protect and enforce these rights could reduce our ability to maintain our industry position and our profit margins.

We rely on our patents, trademarks, copyrights, know-how and trade secrets and patents and other technology licensed from third parties to protect our investment in research and development and our competitive commercial positions in manufacturing and marketing our products. We have adopted internal policies for protecting our know-how and trade secrets. In addition, our practice is to seek patent or trade secret protection for significant developments that provide us competitive advantages and freedom to practice for our businesses. Patents may cover catalysts, processes, products, intermediate products and product uses. These patents are usually filed in strategic countries throughout the world and provide varying periods and scopes of protection based on the filing date and the type of patent application. The legal life and scope of protection provided by a patent may vary among those countries in which we seek protection. As patents expire, the catalysts, processes, products, intermediate products and product uses described and claimed in those patents generally may become available for use by the public subject to our continued protection for associated know-how and trade secrets. We also monitor intellectual property of others, especially patents that could impact our rights to commercially implement research and development, our rights to manufacture and market our products, and our rights to use know-how and trade secrets. We will not intentionally infringe upon the valid intellectual property rights of others, and we will continue to assess and take actions as necessary to protect our positions. We also seek to register trademarks as a means of protecting the brand names of our products, which brand names become more important once the corresponding product or process patents have expired. We operate in regions of the world where intellectual property protection may be limited and difficult to enforce and our continued growth strategy may result in us seeking intellectual property protection in additional regions with similar challenges. We also

monitor the trademarks of others and take action when our trademark rights are being infringed upon. If we are not successful in protecting or maintaining our patent, license, trademark or other intellectual property rights, or protecting our rights to commercially make, market and sell our products, our net sales, results of operations and cash flows may be adversely affected.

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Our business is exposed to risks associated with the creditworthiness of our suppliers, customers and business partners and the industries in which our suppliers, customers and business partners participate are cyclical in nature, both of which may adversely affect our business and results of operations.

Our business is exposed to risks associated with the creditworthiness of our key suppliers, customers and business partners and reductions in demand for our customers' products. These risks include the interruption of production at the facilities of our customers, the reduction, delay or cancellation of customer orders, delays in or the inability of customers to obtain financing to purchase our products, delays in or interruptions of the supply of raw materials we purchase and bankruptcy of customers, suppliers or other creditors. Furthermore, some of the industries in which our end-use customers participate, such as the automotive, electrical, construction and textile industries, are highly competitive, to a large extent driven by end-use applications, and may experience overcapacity, all of which may affect demand for and the pricing of our products. In addition, many of these industries are cyclical in nature, thus posing risks to us that vary throughout the year. The occurrence of any of these events may adversely affect our cash flow, profitability and financial condition.

Failure to comply with applicable laws or regulations and/or changes in applicable laws or regulations may adversely affect our business and financial results as a whole.

We are subject to extensive international, national, state, local and other laws and regulations. Failure to comply with these laws, including antitrust and anticorruption laws, rules, regulations or court decisions, could expose us to fines, penalties and other costs. Although we have implemented policies and procedures designed to ensure compliance with these laws, rules, regulations and court decisions, there can be no assurance that our employees and business partners and other third parties acting on our behalf will comply with these laws, rules, regulations and court decisions, which could result in fines, penalties and costs and damage to our business reputation.

Moreover, changes in laws or regulations, including the more aggressive enforcement of such laws and regulations, such as unexpected changes in regulatory requirements (including import or export licensing requirements), or changes in reporting requirements of the US, Canadian, Mexican, German, EU or Asian governmental agencies, could increase the cost of doing business in these regions. In addition, enforcement of environmental or other governmental policy may result in plant shut downs or significantly decreased production, such as in China on high pollution days. Any of these conditions, including the failure to obtain or maintain operating permits for our business, may have an effect on our business and financial results as a whole and may result in volatile current and future prices for our products and raw materials.

Environmental regulations and other obligations relating to environmental matters could subject us to liability for fines, clean-ups and other damages, require us to incur significant costs to modify our operations and increase our manufacturing and delivery costs.

Costs related to our compliance with environmental laws and regulations, and potential obligations with respect to sites currently or formerly owned or operated by us, may have a significant negative impact on our operating results. We also have obligations related to the indemnity agreement contained in the demerger and transfer agreement between Celanese GmbH and Hoechst AG for environmental matters arising out of certain divestitures that took place prior to the demerger.

Our operations are subject to extensive international, national, state, local and other laws and regulations that govern environmental and health and safety matters. We incur substantial capital and other costs to comply with these requirements. If we violate any one of those laws or regulations, we can be held liable for substantial fines and other sanctions, including limitations on our operations as a result of changes to or revocations of environmental permits involved. Stricter environmental, safety and health laws and regulations could result in substantial costs and liabilities to us or limitations on our operations. Consequently, compliance with these laws and regulations may negatively affect our earnings and cash flows in a particular reporting period. See Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations - Liquidity and Capital Resources for further information.

Changes in environmental, health and safety regulations in the jurisdictions where we manufacture or sell our products could lead to a decrease in demand for our products.

New or revised governmental regulations and independent studies relating to the effect of our products on health, safety or the environment may affect demand for our products and the cost of producing our products. In addition,

products we produce, including VAM, formaldehyde and plastics derived from formaldehyde, may be classified and labeled in a manner that would adversely affect demand for such products. For example, in 2012 the International Agency for Research on Cancer ("IARC"), a research agency within the World Health Organization, classified formaldehyde as carcinogenic to humans (Group 1) based on epidemiological studies linking formaldehyde exposure to nasopharyngeal cancer, a rare cancer in humans, and leukemia. In

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2011, a similar conclusion was reached by the National Toxicology Program ("NTP"), a U.S. inter-agency research program. We anticipate that the results of the IARC's and the NTP's reviews will continue to be examined and considered by government regulatory agencies with responsibility for setting worker and environmental exposure standards and labeling requirements.

Other initiatives potentially will require toxicological testing and risk assessments of a wide variety of chemicals, including chemicals used or produced by us. These initiatives include the Frank R. Lautenberg Chemical Safety for the 21st Century Act which amended the Toxic Substances Control Act (TSCA), the United States primary chemicals management law, as well as various European Commission regulatory programs, such as REACH (Registration, Evaluation, Authorization and Restriction of Chemicals), and new initiatives in Asia and other regions. These assessments may result in heightened concerns about the chemicals involved and additional regulatory requirements being placed on the production, handling, labeling and/or use of the subject chemicals. Such concerns and additional requirements could also increase the cost incurred by our customers to use our chemical products and otherwise limit the use of these products, which could lead to a decrease in demand for these products. Such a decrease in demand would likely have an adverse impact on our business and results of operations.

Our production facilities, including facilities we own and/or operate and operations at our facilities owned and/or operated by third parties, handle the processing of some volatile and hazardous materials that subject us to operating and other risks that could have a negative effect on our operating results.

Although we take precautions to enhance the safety of, and minimize the disruption to, our operations and operations at our facilities owned and/or operated by third parties, we are subject to operating and other risks associated with chemical manufacturing, including the storage and transportation of raw materials, finished products and waste. These risks include, among other things, pipeline and storage tank leaks and ruptures, explosions and fires and discharges or releases of toxic or hazardous substances. In addition, we may have limited control over operations at our facilities owned and/or operated by third parties or such operations may not be fully integrated into our safety programs.

These operating and other risks can cause personal injury, property damage, third-party damages and environmental contamination, and may result in the shutdown of affected facilities and the imposition of civil or criminal penalties. The occurrence of any of these events may disrupt production and have a negative effect on the productivity and profitability of a particular manufacturing facility, our operating results and cash flows.

US federal regulations aimed at increasing security at certain chemical production plants and similar legislation that may be proposed in the future, if passed into law, may increase our operating costs and cause an adverse effect on our results of operations.

The Chemical Facility Anti-Terrorism Standards program ("CFATS Program"), which is administered by the Department of Homeland Security ("DHS"), identifies and regulates chemical facilities to ensure that they have security measures in place to reduce the risks associated with potential terrorist attacks on chemical plants located in the US. In December 2014, the Protecting and Securing Chemical Facilities from Terrorist Attacks Act of 2014 ("CFATS Act") was enacted. The CFATS Act reauthorizes the CFATS Program for four years. The CFATS Extension Act of 2019 ("HR 251") was signed into law by the President on January 19, 2019. HR 251 extends CFATS for 15 months, until April 19, 2020. This extension does not make any changes to the program and is intended to provide lawmakers the needed time to discuss improvements to CFATS and provides for a longer term authorization. DHS has released an interim final rule under the CFATS Program that imposes comprehensive federal security regulations for high-risk chemical facilities in possession of specified quantities of chemicals of interest. This rule establishes risk-based performance standards for the security of our nation's chemical facilities. It requires covered chemical facilities to prepare Security Vulnerability Assessments, which identify facility security vulnerabilities, and to develop and implement Site Security Plans, which include measures that satisfy the identified risk-based performance standards. We cannot determine with certainty the costs associated with any security measures that DHS may require. We are subject to risks associated with possible climate change legislation, regulation and international accords. Greenhouse gas emissions have become the subject of a large amount of international, national, regional, state and local attention. For example, the Environmental Protection Agency has promulgated rules concerning greenhouse gas emissions and cap and trade initiatives to limit greenhouse gas emissions have been introduced in the EU. In addition,

regulation of greenhouse gas also could occur pursuant to future treaty obligations, statutory or regulatory changes or new climate change legislation. As such, future environmental legislative and regulatory developments related to climate change are possible, which could materially increase operating costs in the chemical industry and thereby increase our manufacturing and delivery costs.

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Our business and financial results may be adversely affected by various legal and regulatory proceedings. We are involved in legal and regulatory proceedings, lawsuits, claims and investigations in the normal course of business and could become subject to additional claims in the future, some of which could be material. The outcome of existing proceedings, lawsuits, claims and investigations may differ from our expectations because the outcomes of such proceedings, including regulatory matters, are often difficult to reliably predict. Various factors or developments can lead us to change current estimates of liabilities and related insurance receivables where applicable, or permit us to make such estimates for matters previously not susceptible to reasonable estimates, such as a significant judicial ruling or judgment, a significant settlement, significant regulatory developments, or changes in applicable law. A future adverse ruling, settlement, or unfavorable development could result in charges that could have a material adverse effect on our business, results of operations or financial condition in any particular period. See Note 16 - Environmental and Note 24 - Commitments and Contingencies in the accompanying consolidated financial statements for further information.

Changes in, or the interpretation of, tax legislation or rates throughout the world could materially impact our results. Our future effective tax rate and related tax balance sheet attributes could be impacted by changes in tax legislation throughout the world. The overall tax environment has made it increasingly challenging for multinational corporations to operate with certainty about taxation in many jurisdictions. For example, the European Commission has been conducting investigations focusing on whether local country tax rulings or tax legislation provide preferential tax treatment that violates EU state aid rules. In addition, the Organization of Economic Cooperation and Development, which represents a coalition of member countries, is supporting changes to numerous long-standing tax principles through its base erosion and profit shifting project, which is focused on a number of issues, including the shifting of profits among affiliated entities located in different tax jurisdictions. Furthermore, a number of countries where we do business, including the US and many countries in the EU, have changed or are considering changes in relevant tax, accounting and other laws, regulations and interpretations, including changes to tax laws applicable to multinational corporations. The increasingly complex global tax environment could have a material adverse effect on our effective tax rate, results of operations, cash flows and financial condition.

On December 31, 2017, the Tax Cuts and Jobs Act (the "TCJA") was enacted and was effective January 1, 2018. In accordance with Accounting Standards Codification 740, Accounting for Income Taxes, which requires companies to recognize the effects of tax law changes in the period of enactment. This overhaul of the US tax law made a number of substantial changes, including the reduction of the corporate tax rate from 35% to 21%, establishing a dividends received deduction for dividends paid by foreign subsidiaries to the US, elimination or limitation of certain deductions (interest, domestic production activities and executive compensation), imposing a mandatory tax on previously unrepatriated earnings accumulated offshore since 1986 and establishing global minimum income tax and base erosion tax provisions related to offshore activities and affiliated party payments. Due to the timing and significance of the TCJA, the Staff of the Securities and Exchange Commission issued Staff Accounting Bulletin No. 118, which provided registrants a measurement period through 2018 to report the impact of the new US tax law.

The US Treasury issued several proposed regulations supplementing the TCJA in 2018. These proposed regulations are intended to be applicable retroactively and would not materially impact our 2018 tax rate if finalized in current form. We currently do not expect them to have a material impact on income tax expense upon final adoption. See Note 19 - Income Taxes in the accompanying consolidated financial statements for further information.

Our future effective tax rates could be affected by changes in the mix of earnings in countries with differing statutory tax rates, expirations of tax holidays or rulings, changes in the assessment regarding the realization of deferred tax assets, or changes in tax laws and regulations or their interpretation. We are subject to the regular examination of our income tax returns by various tax authorities. Examinations in material jurisdictions or changes in laws, rules, regulations or interpretations by local taxing authorities could result in impacts to tax years open under statute or to foreign operating structures currently in place. We regularly assess the likelihood of adverse outcomes resulting from these examinations or changes in laws, rules, regulations or interpretations to determine the adequacy of our provision for taxes. It is possible the outcomes from these examinations will have a material adverse effect on our financial condition and operating results.

Our significant non-US operations expose us to global exchange rate fluctuations that could adversely impact our profitability.

We conduct a significant portion of our operations outside the US. Consequently, fluctuations in currencies of other countries, especially the Euro, may materially affect our operating results. Because our consolidated financial statements are presented in US dollars, we must translate revenues, income and expenses, as well as assets and liabilities, into US dollars based on average exchange rates prevailing during the reporting period or the exchange rate at the end of that period. Therefore, increases or

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decreases in the value of the US dollar against other major currencies will affect our net operating revenues, operating income and the cost of balance sheet items denominated in foreign currencies. Foreign exchange rates can also impact the competitiveness of products produced in certain jurisdictions and exported for sale into other jurisdictions. These changes may impact the value received for the sale of our goods versus those of our competitors.

In addition to currency translation risks, we incur a currency transaction risk whenever one of our operating subsidiaries enters into a purchase or sales transaction using a currency different from the operating subsidiary's functional currency. Given the volatility of exchange rates, particularly the strengthening of the US dollar against major currencies or the currencies of large developing countries, we may not be able to manage our currency transaction and translation risks effectively.

We use financial instruments to hedge certain exposure to foreign currency fluctuations, but those hedges in most cases cover existing balance sheet exposures and not future transactional exposures. We cannot guarantee that our hedging strategies will be effective. In addition, the use of financial instruments creates counterparty settlement risk. Failure to effectively manage these risks could have an adverse impact on our financial position, results of operations and cash flows.

We are subject to information technology security threats that could materially affect our business.

We have been and will continue to be subject to advanced persistent information technology security threats. While some unauthorized access to our information technology systems occurs, we believe to date these threats have not had a material impact on our business. We seek to detect and investigate these security incidents and to prevent their recurrence but in some cases we might be unaware of an incident or its magnitude and effects. The theft, mis-use or publication of our intellectual property and/or confidential business information or the compromising of our systems or networks could harm our competitive position, cause operational disruption, reduce the value of our investment in research and development of new products and other strategic initiatives or otherwise adversely affect our business or results of operations. To the extent that any security breach results in inappropriate disclosure of our employees', customers' or vendors' confidential information, we may incur liability as a result. Although we attempt to mitigate these risks by employing a number of measures, including monitoring of our systems and networks, and maintenance of backup and protective systems, our systems, networks, products and services remain potentially vulnerable to increasingly sophisticated advanced persistent threats that may have a material effect on our business. In addition, the devotion of additional resources to the security of our information technology systems in the future could significantly increase the cost of doing business or otherwise adversely impact our financial results.

Our success depends upon our ability to attract and retain key employees and the identification and development of talent to succeed senior management.

We rely heavily on our management team. Accordingly, our success depends on our ability to attract and retain key personnel. The inability to recruit and retain key personnel or the unexpected loss of key personnel may adversely affect our operations. In addition, because of our reliance on our management team, our future success depends in part on our ability to identify and develop talent to succeed senior management. The retention of key personnel and appropriate senior management succession planning will continue to be important to the successful implementation of our strategies.

Significant changes in pension fund investment performance or assumptions relating to pension costs may have a material effect on the valuation of pension obligations, the funded status of pension plans and our pension cost. The cost of our pension plans is incurred over long periods of time and involves many uncertainties during those periods of time. Our funding policy for pension plans is to accumulate plan assets that, over the long run, will approximate the present value of projected benefit obligations. Our pension cost is materially affected by the discount rate used to measure pension obligations, the level and value 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 will likely result in corresponding increases and decreases in the valuation of plan assets and a change in the discount rate or mortality assumptions, which will likely result in an increase or decrease in the valuation of pension obligations. The combined impact of these changes will affect the reported funded status of our pension plans as well as the net periodic pension cost in the following fiscal years. In recent years, an extended duration strategy in the asset portfolio has been implemented in some plans to

reduce the influence of liability volatility due to changes in interest rates. If the funded status of a pension plan declines, we may be required to make unscheduled contributions in addition to those contributions for which we have already planned.

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Some of our employees are unionized, represented by workers councils or are subject to local laws that are less favorable to employers than the laws of the US.

As of December 31, 2018, we had 7,684 employees globally. Approximately 16% of our 2,693 US-based employees are unionized. In addition, a large number of our employees are employed in countries in which employment laws provide greater bargaining or other employment rights than the laws of the US. Such employment rights require us to work collaboratively with the legal representatives of the employees to effect any changes to labor agreements. Most of our employees in Europe are represented by workers councils and/or unions that must approve any changes in terms and conditions of employment, including potentially salaries and benefits. They may also impede efforts to restructure our workforce. Although we believe we have a good working relationship with our employees and their legal representatives, a strike, work stoppage, or slowdown by our employees could occur, resulting in a disruption of our operations or higher ongoing labor costs.

Provisions in our certificate of incorporation and bylaws, as well as any stockholders' rights plan, may discourage a takeover attempt.

Provisions contained in our certificate of incorporation and bylaws could make it more difficult for a third party to acquire us, even if doing so might be beneficial to our stockholders. Provisions of our certificate of incorporation and bylaws impose various procedural and other requirements, which could make it more difficult for stockholders to effect certain corporate actions. For example, our certificate of incorporation authorizes our Board of Directors to determine the rights, preferences, privileges and restrictions of unissued series of preferred stock, without any vote or action by our stockholders. Thus, our Board of Directors can authorize and issue shares of preferred stock with voting or conversion rights that could adversely affect the voting or other rights of holders of our common stock, par value \$0.0001 per share ("Common Stock"). These rights may have the effect of delaying or deterring a change of control of our Company. In addition, a change of control of our Company may be delayed or deterred as a result of any stockholders' rights plan that our Board of Directors may adopt. These provisions could limit the price that certain investors might be willing to pay in the future for shares of our Common Stock.

We may incur significant charges in the event we close or divest all or part of a manufacturing plant or facility. We periodically assess our manufacturing operations in order to manufacture and distribute our products in the most efficient manner. Based on our assessments, we may make capital improvements to modernize certain units, move manufacturing or distribution capabilities from one plant or facility to another plant or facility, discontinue manufacturing or distributing certain products or close or divest all or part of a manufacturing plant or facility. We also have shared services agreements at several of our plants and if such agreements are terminated or revised, we would assess and potentially adjust our manufacturing operations. The closure or divestiture of all or part of a manufacturing plant or facility could result in future charges that could be significant. See Note 4 - Acquisitions, Dispositions and Plant Closures in the accompanying consolidated financial statements for further information.

We may not be able to complete future acquisitions or joint venture transactions or successfully integrate them into our business, which could adversely affect our business or results of operations.

As part of our growth strategy, we intend to pursue acquisitions and joint venture opportunities. Successful accomplishment of this objective may be limited by the availability and suitability of acquisition candidates, the ability to obtain regulatory approvals necessary to consummate a planned transaction, and by our financial resources, including available cash and borrowing capacity. Acquisitions and joint venture transactions involve numerous risks, including difficulty determining appropriate valuation, integrating operations, technologies, services and products of the acquired lines or businesses, personnel turnover and the diversion of management's attention from other business matters. In addition, we may be unable to achieve anticipated benefits from these transactions in the time frame that we anticipate, or at all, which could adversely affect our business or results of operations.

The insurance coverage that we maintain may not fully cover all operational risks.

We maintain property, business interruption and casualty insurance but such insurance may not cover all of the risks associated with the hazards of our business and is subject to limitations, including deductibles and maximum liabilities covered. We may incur losses beyond the limits, or outside the coverage, of our insurance policies, including liabilities for environmental remediation. In the future, the types of insurance we obtain and the level of coverage we maintain may be inadequate or we may be unable to continue to maintain our existing insurance or obtain comparable

insurance at a reasonable cost.

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Differences in views with our joint venture participants may cause our joint ventures not to operate according to their business plans, which may adversely affect our results of operations.

We currently participate in a number of joint ventures and may enter into additional joint ventures in the future. The nature of a joint venture requires us to work cooperatively with unaffiliated third parties. Differences in views among joint venture participants may result in delayed decisions or failure to agree on major decisions. If these differences cause the joint ventures to deviate from their business plans or to fail to achieve their desired operating performance, our results of operations could be adversely affected.

Risks Related to Our Indebtedness

Our level of indebtedness and other liabilities could diminish our ability to raise additional capital to fund our operations or refinance our existing indebtedness when it matures, limit our ability to react to changes in the economy or the chemicals industry and prevent us from meeting obligations under our indebtedness.

See Note 14 - Debt in the accompanying consolidated financial statements for further information about our indebtedness. See Note 13 - Noncurrent Other Liabilities, Note 15 - Benefit Obligations and Note 16 - Environmental in the accompanying consolidated financial statements for further information about our other obligations.

Our level of indebtedness and other liabilities could have important consequences, including:

Increasing our vulnerability to general economic and industry conditions, including exacerbating the impact of any adverse business effects that are determined to be material adverse events under our existing senior credit agreement (the "Credit Agreement") or our indentures (the "Indentures") governing our €300 million in aggregate principal amount of 3.250% senior unsecured notes due 2019, \$400 million in aggregate principal amount of 5.875% senior unsecured notes due 2021, \$500 million in aggregate principal amount of 4.625% senior unsecured notes due 2022, €750 million in aggregate principal amount of 1.125% senior unsecured notes due 2023, €300 million in aggregate principal amount of 1.250% senior unsecured notes due 2025 and €500 million in aggregate principal amount of 2.125% senior unsecured notes due 2027 (collectively, the "Senior Notes");

Requiring a substantial portion of cash flow from operations to be dedicated to the payment of principal and interest on indebtedness and amounts payable in connection with the satisfaction of our other liabilities, therefore reducing our ability to use our cash flow to fund operations, capital expenditures and future business opportunities or pay dividends on our Common Stock;

Exposing us to the risk of increased interest rates as certain of our borrowings are at variable rates of interest;

Exposing us to the risk of changes in currency exchange rates as certain of our borrowings are denominated in foreign currencies;

Limiting our ability to obtain additional financing for working capital, capital expenditures, product development, debt service requirements, acquisitions and general corporate or other purposes;

Limiting our ability to enter into certain commercial arrangements because of concerns of counterparty risks; and

Limiting our ability to adjust to changing market conditions and placing us at a competitive disadvantage compared to our competitors who have less debt.

We may incur additional indebtedness in the future, which could increase the risks described above.

Although covenants under the Credit Agreement and the Indentures limit our ability to incur certain additional indebtedness, these restrictions are subject to a number of qualifications and exceptions, and the indebtedness we could incur in compliance with these restrictions could be significant. To the extent that we incur additional indebtedness, the risks associated with our debt described above, including our possible inability to service our debt, including the Senior Notes, would increase.

Our variable rate and euro denominated indebtedness subjects us to interest rate risk and foreign currency exchange rate risk, which could cause our debt service obligations to increase significantly and affect our operating results.

Certain of our borrowings are at variable rates of interest or are euro denominated, which exposes us to interest rate risk and currency exchange rate risk, respectively. See Item 7. Management's Discussion and Analysis of Financial Condition and

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Results of Operations - Liquidity and Capital Resources, Item 7A. Quantitative and Qualitative Disclosures About Market Risk below and Note 22 - Derivative Financial Instruments in the accompanying consolidated financial statements for further information.

We may not be able to generate sufficient cash to service our indebtedness and may be forced to take other actions to satisfy obligations under our indebtedness, which may not be successful.

Our ability to make scheduled payments on or to refinance our debt obligations depends on the financial condition and operating performance of our subsidiaries, which are subject to prevailing economic and competitive conditions and to certain financial, business and other factors beyond our control. We may not be able to maintain a level of cash flows from operating activities sufficient to permit us to pay the principal, premium, if any, and interest on our indebtedness. If our cash flows and capital resources are insufficient to fund our debt service obligations, we may be forced to reduce or delay capital expenditures, sell assets, seek additional capital or restructure or refinance our indebtedness. These alternative measures may not be successful and may not permit us to meet our scheduled debt service obligations. In the absence of such operating results and resources, we could face substantial liquidity problems and might be required to dispose of material assets or operations to meet our debt service and other obligations. We may not be able to consummate those dispositions or to obtain the proceeds that we could realize from them, and these proceeds may not be adequate to meet any debt service obligations then due.

Restrictive covenants in our debt agreements may limit our ability to engage in certain transactions and may diminish our ability to make payments on our indebtedness or pay dividends.

The Credit Agreement, the Indentures and the Receivables Purchase Agreement (the "Purchase Agreement") governing our receivables securitization facility each contain various covenants that limit our ability to engage in specified types of transactions. The Credit Agreement contains covenants including, but not limited to, restrictions on our ability to incur additional debt; incur liens securing debt; enter into sale-leaseback transactions; merge or consolidate with any other person; and sell, assign, transfer, lease, convey or otherwise dispose of all or substantially all of the Issuer's assets or the assets of its subsidiaries.

In addition, the Indentures limit Celanese US Holdings LLC ("Celanese US") and certain of its subsidiaries' ability to, among other things, incur liens securing debt; enter into sale-leaseback transactions; merge or consolidate with any other person; and sell, assign, transfer, lease, convey or otherwise dispose of all or substantially all of Celanese US's assets or the assets of its restricted subsidiaries.

The Purchase Agreement also contains covenants including, but not limited to, restrictions on CE Receivables LLC, a wholly-owned, "bankruptcy remote" special purpose subsidiary of the Company, and certain other Company subsidiaries' ability to incur indebtedness; grant liens on assets; merge, consolidate, or sell certain assets; prepay or modify certain indebtedness; and engage in other businesses.

Such restrictions in our debt obligations could result in us having to obtain the consent of our lenders and holders of the Senior Notes in order to take certain actions. Disruptions in credit markets may prevent us from obtaining or make it more difficult or more costly for us to obtain such consents. Our ability to expand our business or to address declines in our business may be limited if we are unable to obtain such consents.

A breach of any of these covenants could result in a default, which, if not cured or waived, could have a material adverse effect on our business, financial condition and results of operations. Furthermore, a default under the Credit Agreement could permit lenders to accelerate the maturity of our indebtedness under the Credit Agreement and to terminate any commitments to lend. If the lenders under the Credit Agreement accelerate the repayment of such indebtedness, we may not have sufficient liquidity to repay such amounts or our other indebtedness, including the Senior Notes. In such event, we could be forced into bankruptcy or liquidation.

Celanese and Celanese US are holding companies and depend on subsidiaries to satisfy their obligations under the Senior Notes and the guarantee of Celanese US's obligations under the Senior Notes and the Credit Agreement by Celanese.

As holding companies, Celanese and Celanese US conduct substantially all of their operations through their subsidiaries, which own substantially all of our consolidated assets. Consequently, the principal source of cash to pay Celanese and Celanese US's obligations, including obligations under the Senior Notes and the guarantee of Celanese US's obligations under the Credit Agreement and the Indentures by Celanese, is the cash that our subsidiaries generate

from their operations. We cannot assure that our subsidiaries will be able to, or be permitted to, make distributions to enable Celanese US and/or Celanese to make

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payments in respect of their obligations. Each of our subsidiaries is a distinct legal entity and, under certain circumstances, applicable country or state laws, regulatory limitations and terms of our debt instruments may limit our subsidiaries' ability to distribute cash to Celanese US and Celanese. While the Credit Agreement and the Indentures limit the ability of our subsidiaries to put restrictions on paying dividends or making other intercompany payments to us, these limitations are subject to certain qualifications and exceptions, which may have the effect of significantly restricting the applicability of those limits. In the event Celanese US and/or Celanese do not receive distributions from our subsidiaries, Celanese US and/or Celanese may be unable to make required payments on the indebtedness under the Credit Agreement, the Indentures, the guarantee of Celanese US's obligations under the Credit Agreement and the Indentures by Celanese, or our other indebtedness.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

Description of Property

We and our affiliates own or lease numerous production and manufacturing facilities throughout the world. We also own or lease other properties, including office buildings, warehouses, pipelines, research and development facilities and sales offices. We continuously review and evaluate our facilities as a part of our strategy to optimize our business portfolio. The following table sets forth a list of our principal offices, production and other facilities throughout the world as of December 31, 2018.

Site	Leased/Owned	Products/Functions
Corporate Offices		
Amsterdam, Netherlands	Leased	Administrative offices
Budapest, Hungary	Leased	Administrative offices
Irving, Texas, US	Leased	Corporate headquarters
Nanjing, China	Leased	Administrative offices
Shanghai, China	Leased	Administrative offices
Sulzbach, Germany	Leased	Administrative offices
Engineered Materials		
Auburn Hills, Michigan, US	Leased	Automotive Development Center
Bishop, Texas, US	Owned	Polyoxymethylene ("POM"), Ultra-high molecular weight polyethylene ("UHMW-PE"), Compounding
Campo Bom, Brazil	Leased	Compounding
Evansville, Indiana, US	Owned	Compounding
Ferrara, Italy	Leased	Compounding
Florence, Kentucky, US	Owned	Compounding
Forli, Italy	Leased	Compounding
Frankfurt am Main, Germany ⁽¹⁾⁽³⁾	Owned by InfraServ GmbH & Co. Hoechst KG ⁽⁵⁾	POM, Compounding, Sorbates, Sunett® sweetener
Fuji City, Japan	Owned by Polyplastics Co., Ltd. ⁽⁵⁾	POM, Polybutylene terephthalate, Liquid crystal polymers ("LCP"), Compounding
Jubail, Saudi Arabia	Owned by National Methanol Company ⁽⁵⁾	Methyl tertiary-butyl ether, Methanol, POM
Kaiserslautern, Germany ⁽¹⁾	Leased	Long-fiber reinforced thermoplastics ("LFRT")
Kuantan, Malaysia	Owned by Polyplastics Co., Ltd. ⁽⁵⁾	POM, Compounding
Lebanon, Tennessee, US	Owned	Compounding

Mantova, Italy

Leased

Compounding

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Site	Leased/Owned	Products/Functions
Engineered Materials		
Nanjing, China ⁽²⁾	Owned	LFRT, UHMW-PE, Compounding
Oberhausen, Germany ⁽¹⁾	Leased	UHMW-PE
Shelby, North Carolina, US	Owned	LCP, Compounding
Silao, Mexico	Leased	Compounding
Spondon, Derby, United Kingdom	Owned	Acetate film
Suzano, Brazil ⁽¹⁾	Leased	Compounding
Suzhou, China ⁽⁸⁾	Owned	Compounding
Ulsan, South Korea	Owned by Korea Engineering Plastics Co., Ltd. ⁽⁵⁾	POM
Utzenfeld, Germany	Owned	Compounding
Wehr, Germany	Owned	Compounding
Wilmington, North Carolina, US	Owned by Fortron Industries LLC ⁽⁵⁾	Polyphenylene sulfide
Winona, Minnesota, US	Owned	LFRT
Acetate Tow		
Kunming, China	Leased by Kunming Cellulose Fibers Co. Ltd. ⁽⁶⁾	Acetate tow
Lanaken, Belgium	Owned	Acetate tow
Nantong, China	Owned by Nantong Cellulose Fibers Co. Ltd. ⁽⁷⁾	Acetate tow, Acetate flake
Narrows, Virginia, US	Owned	Acetate tow, Acetate flake
Ocotlán, Mexico	Owned	Acetate flake
Zhuhai, China	Leased by Zhuhai Cellulose Fibers Co. Ltd. ⁽⁶⁾	Acetate tow
Acetyl Chain		
Bay City, Texas, US ⁽¹⁾	Leased	Vinyl acetate monomer ("VAM")
Bishop, Texas, US	Owned	Formaldehyde, Paraformaldehyde
Boucherville, Quebec, Canada	Owned	Conventional emulsions
Cangrejera, Mexico	Owned	Acetic anhydride, Ethyl acetate, Acetone derivatives
Clear Lake, Texas, US ⁽⁴⁾	Owned	Acetic acid, VAM, Methanol
Edmonton, Alberta, Canada	Owned	Low-density polyethylene resins, Ethylene vinyl acetate
Enoree, South Carolina, US	Owned	Conventional emulsions, Vinyl acetate ethylene ("VAE") emulsions
Frankfurt am Main, Germany ⁽³⁾	Owned by InfraServ GmbH & Co. Hoechst KG ⁽⁵⁾	Acetaldehyde, Conventional emulsions, VAE emulsions, VAM
Geleen, Netherlands	Owned	VAE emulsions
Jurong Island, Singapore ⁽¹⁾	Leased	Acetic acid, Butyl acetate, Ethyl acetate, VAE emulsions, VAM
Nanjing, China ⁽²⁾	Owned	Acetic acid, Acetic anhydride, Conventional emulsions, VAE emulsions, VAM
Perstorp, Sweden	Owned	Conventional emulsions, VAE emulsions

⁽¹⁾ Celanese owns the assets on this site and leases the land through the terms of a long-term land lease.

- Multiple Celanese business segments conduct operations at the Nanjing facility. Celanese owns the assets on this
- (2) site. Celanese also owns the land through "land use right grants" for 46 to 50 years with the right to transfer, mortgage or lease such land during the term of the respective land use right grant.
 - (3) Multiple Celanese business segments conduct operations at the Frankfurt Hoechst Industrial Park located in Frankfurt am Main, Germany.

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- (4) Methanol is produced by our joint venture, Fairway Methanol LLC, in which Celanese owns a 50% interest.
- (5) A Celanese equity method investment.
- (6) A Celanese equity investment without a readily determinable fair value. The investment owns the assets on this site and leases the land from China National Tobacco Corporation.
A Celanese equity investment without a readily determinable fair value. Nantong Cellulose Fibers Co. Ltd. owns
- (7) the assets on this site and the land through "land use right grants" with the right to transfer, mortgage or lease such land during the term of the respective land use right grant.
- (8) Celanese owns the assets on this site. Celanese also owns the land through "land use right grants" for 41 years with the right to transfer, mortgage or lease such land during the term of the respective land use right grant.

Item 3. Legal Proceedings

The Company is involved in legal and regulatory proceedings, lawsuits, claims and investigations incidental to the normal conduct of its business, relating to such matters as product liability, land disputes, contracts, employment, antitrust and competition, intellectual property, personal injury and other actions in tort, workers' compensation, chemical exposure, asbestos exposure, taxes, trade compliance, acquisitions and divestitures, claims of legacy stockholders, past waste disposal practices and release of chemicals into the environment. The Company is actively defending those matters where it is named as a defendant. Due to the inherent subjectivity of assessments and unpredictability of outcomes of legal proceedings, the Company's litigation accruals and estimates of possible loss or range of possible loss may not represent the ultimate loss to the Company from legal proceedings. See Note 16 - Environmental and Note 24 - Commitments and Contingencies in the accompanying consolidated financial statements for a discussion of material environmental matters and material commitments and contingencies related to legal and regulatory proceedings. See Item 1A. Risk Factors for certain risk factors relating to these legal proceedings.

Item 4. Mine Safety Disclosures

None.

Executive Officers of the Registrant

The names, ages and biographies of our executive officers as of February 7, 2019 are as follows:

Name	Age	Position
Mark C. Rohr	67	Chairman of the Board of Directors and Chief Executive Officer, President
Scott M. Sutton	54	Chief Operating Officer
Scott A. Richardson	42	Senior Vice President and Chief Financial Officer
Shannon L. Jurecka	49	Senior Vice President and Chief Human Resources Officer

Mark C. Rohr was named our Chairman of the Board of Directors, President and Chief Executive Officer in April 2012 after being a member of our Board of Directors since April 2007. Prior to joining the Company, Mr. Rohr was Executive Chairman and director of Albemarle Corporation, a global developer, manufacturer and marketer of highly-engineered specialty chemicals. During his 11 years with Albemarle, he held various executive positions, including Chairman and Chief Executive Officer. Earlier in his career, Mr. Rohr held executive leadership roles with various companies, including Occidental Chemical Corporation and The Dow Chemical Company. Mr. Rohr has served on the board of directors of Ashland Global Holdings Inc. (f/k/a Ashland Inc.) since 2008, and currently serves as a member of its audit committee and its environmental, health & safety committee. In 2016, he also served as Chairman of the American Chemistry Council's Executive Committee and as Chairman of the International Association of Chemical Associations. Mr. Rohr received a bachelor's degree in chemistry and chemical engineering from Mississippi State University.

Scott M. Sutton has served as our Chief Operating Officer since March 2017 and as our Executive Vice President and President, Materials Solutions since June 2015. From January 2015 to June 2015, Mr. Sutton served as our Vice President and General Manager of the Engineered Materials business. Prior to January 2015, Mr. Sutton served as our Vice President of Supply Chain from March 2014 to January 2015 and as our Vice President of Acetic Acid and Anhydride from August 2013 to March 2014. Mr. Sutton had 28 years of industry experience prior to joining the Company, including serving as President and General Manager of Chemtura Corporation's AgroSolutions business, business manager for Landmark Structures and Vice President of a division of Albemarle Corporation. Mr. Sutton earned a civil engineering degree from Louisiana State University and is a registered professional engineer in Texas.

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Scott A. Richardson was named Chief Financial Officer for Celanese Corporation in February 2018 after serving as Senior Vice President of the Engineered Materials business since December 2015, where he had global responsibility for strategy, product and business management, planning and portfolio development, and pipeline management. Previously, Richardson served as Vice President and General Manager of the Acetyl Chain since 2011. Richardson has progressed through several Celanese roles including global commercial director, Acetyls; manager of Investor Relations; business analysis manager, Acetyls; and business line controller, Polyols and Solvents. He joined Celanese in 2005. Prior to joining Celanese, Richardson held various finance, operational and leadership roles at American Airlines. He earned a Bachelor of Arts in Accounting from Westminster College and a Master of Business Administration from Texas Christian University.

Shannon L. Jurecka has served as our Senior Vice President and Chief Human Resources Officer since July 2017. Prior to her current role, Ms. Jurecka served as Vice President of Human Resources for Materials Solutions and the Human Resource leader for Mergers and Acquisitions. Immediately prior to joining the Company in 2016, Ms. Jurecka served as a Human Resources Executive with Bank of America Merrill Lynch for 10 years where she supported multiple businesses during her tenure, including her most recent role supporting over 20,000 operations employees in more than 25 locations across seven states. She also served as the Dallas and Fort Worth Market Human Resource Executive responsible for market strategic talent objectives. Prior to Bank of America, she worked at Dell as a Mechanical Engineering Project Manager prior to moving into Learning and Leadership Development. Ms. Jurecka holds a bachelor's degree in speech communication from Sam Houston State University and a master's degree in organizational leadership and ethics from St. Edwards University. She holds a secondary education teaching certificate in the State of Texas.

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PART II

Item 5. Market for the Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Market Information

Our common stock, par value \$0.0001 per share ("Common Stock") has traded on the New York Stock Exchange ("NYSE") under the symbol "CE" since January 21, 2005.

Holders

As of January 31, 2019, there were 27 holders of record of our Common Stock. By including persons holding shares in broker accounts under street names, however, we estimate we have approximately 113,142 beneficial holders.

Dividend Policy

The amount available to us to pay cash dividends is not currently restricted by our existing senior credit facility and our indentures governing our senior unsecured notes. Certain indentures for notes issued prior to 2016 have provisions that restrict the amount available to us to pay cash dividends in the event of a ratings downgrade below investment grade by two or more credit rating agencies. Also, the general corporation law of the State of Delaware imposes additional restrictions on the payment of dividends by all Delaware corporations that do not currently limit our ability to pay cash dividends. See Note 17 - Stockholders' Equity in the accompanying consolidated financial statements for further information.

Celanese Purchases of its Equity Securities

Information regarding repurchases of our Common Stock during the three months ended December 31, 2018 is as follows:

Period	Total Number of Shares Purchased ⁽¹⁾	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Program	Approximate Dollar Value of Shares Remaining that May Be Purchased Under the Program ⁽²⁾
October 1 - 31, 2018	715,208	\$97.15	715,208	\$1,211,000,000
November 1 - 30, 2018	3,863,626	\$101.67	3,863,626	\$818,000,000
December 1 - 31, 2018	1,175,800	\$89.30	1,175,800	\$713,000,000
Total	5,754,634	⁽³⁾	5,754,634	

⁽¹⁾ May include shares withheld from employees to cover their withholding requirements for personal income taxes related to the vesting of restricted stock.

⁽²⁾ Our Board of Directors has authorized the aggregate repurchase of \$3.9 billion of our Common Stock since February 2008.

⁽³⁾ Excludes 1,700 common shares reacquired pursuant to an employee clawback agreement.

See Note 17 - Stockholders' Equity in the accompanying consolidated financial statements for further information.

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Performance Graph

The following performance graph compares the cumulative total return on Celanese Corporation common stock from December 31, 2013 through December 31, 2018 to that of the Standard & Poor's ("S&P") 500 Stock Index and the Dow Jones US Chemicals Index. Cumulative total return represents the change in stock price and the amount of dividends received during the indicated period, assuming reinvestment of all dividends. The performance graph assumes an investment of \$100 on December 31, 2013. The stock performance shown in the graph is included in response to SEC requirements and is not intended to forecast or to be indicative of future performance.

Comparison of Cumulative Total Return

The above performance graph and related information shall not be deemed "soliciting material" or to be "filed" with the Securities and Exchange Commission, nor shall such information be incorporated by reference into any future filing under the Securities Act of 1933 or Securities Exchange Act of 1934, each as amended, except to the extent that we specifically incorporate it by reference into such filing.

Recent Sales of Unregistered Securities

Our deferred compensation plan offers certain of our senior employees and directors the opportunity to defer a portion of their compensation in exchange for a future payment amount equal to their deferrals plus or minus certain amounts based upon the market-performance of specified measurement funds selected by the participant. These deferred compensation obligations may be considered securities of Celanese. Participants were required to make deferral elections under the plan prior to January 1 of the year such deferrals will be withheld from their compensation. We relied on the exemption from registration provided by Section 4(2) of the Securities Act in making this offer to a select group of employees, fewer than 35 of which were non-accredited investors under the rules promulgated by the Securities and Exchange Commission.

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Item 6. Selected Financial Data

The balance sheet data as of December 31, 2018 and 2017 and the statements of operations data for the years ended December 31, 2018, 2017 and 2016, all of which are set forth below, are derived from the consolidated financial statements included elsewhere in this Annual Report and should be read in conjunction with those financial statements and the notes thereto. The balance sheet data as of December 31, 2014 and the statements of operations data for the years ended December 31, 2017, 2016, 2015 and 2014, set forth below were derived from previously issued financial statements, adjusted for a change in accounting principle for defined benefit pension plans and other postretirement benefit plans and a change in accounting policy for debt issuance costs, as applicable.

	Year Ended December 31,				
	2018	2017	2016	2015	2014
	(In \$ millions, except per share data)				
Statement of Operations Data					
Net sales	7,155	6,140	5,389	5,674	6,802
Other (charges) gains, net	9	(59)	(8)	(349)	15
Operating profit (loss)	1,334	857	934	385	905
Earnings (loss) from continuing operations before tax	1,510	1,075	1,030	488	941
Earnings (loss) from continuing operations	1,218	862	908	287	627
Earnings (loss) from discontinued operations	(5)	(13)	(2)	(2)	(7)
Net earnings (loss) attributable to Celanese Corporation	1,207	843	900	304	624
Earnings (loss) per common share					
Continuing operations — basic	9.03	6.21	6.22	2.03	4.07
Continuing operations — diluted	8.95	6.19	6.19	2.01	4.04
Balance Sheet Data (as of the end of period)					
Total assets	9,313	9,538	8,357	8,586	8,796
Total debt	3,531	3,641	3,008	2,981	2,723
Total Celanese Corporation stockholders' equity	2,984	2,887	2,588	2,378	2,818
Other Financial Data					
Depreciation and amortization	343	305	290	357	292
Capital expenditures ⁽¹⁾	333	281	247	483	681
Dividends paid per common share ⁽²⁾	2.08	1.74	1.38	1.15	0.93

(1) Amounts include accrued capital expenditures. Amounts do not include capital expenditures related to capital lease obligations.