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, 2017

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the transition period from to

Commission File No. 1-9328

ECOLAB INC.
(Exact name of registrant as specified in its charter)

Delaware (State or other jurisdiction of incorporation or organization)	**41-0231510** (I.R.S. Employer Identification No.)

1 Ecolab Place, St. Paul, Minnesota 55102
(Address of principal executive offices) (Zip Code)

Registrant's telephone number, including area code: **1-800-232-6522**

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

Title of each class	Name of each exchange on which registered
Common Stock, $1.00 par value	**New York Stock Exchange, Inc.**
2.625% Euro Notes due 2025	**New York Stock Exchange, Inc.**
1.000% Euro Notes due 2024	**New York Stock Exchange, Inc.**

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 and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files. ☒ YES ☐ NO

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☒

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "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 ☐ (Do not check if a smaller reporting company)	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 Exchange Act). ☐ YES ☒ NO

Aggregate market value of voting and non-voting common equity held by non-affiliates of registrant on June 30, 2017: $38,254,640,512 (see Item 12, under Part III hereof), based on a closing price of registrant's Common Stock of $132.75 per share.

The number of shares of registrant's Common Stock, par value $1.00 per share, outstanding as of January 31, 2018: 288,858,441 shares.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's Proxy Statement for the Annual Meeting of Stockholders to be held May 3, 2018 and to be filed within 120 days after the registrant's fiscal year ended December 31, 2017 (hereinafter referred to as "Proxy Statement") are incorporated by reference into Part III.

ECOLAB INC.
FORM 10-K
For the Year Ended December 31, 2017

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PART I

Except where the context otherwise requires, references in this Form 10-K to (i) "Ecolab," "Company," "we" and "our" are to Ecolab Inc. and its subsidiaries, collectively; (ii) "Nalco", "Nalco Company" and "Nalco Champion" are to Nalco Company LLC, a wholly-owned subsidiary of the Company; (iii) "Nalco transaction" are to the merger of Ecolab and Nalco Holding Company completed in December 2011; and (iv) "Champion transaction" are to our acquisition of privately held Champion Technologies and its related company Corsicana Technologies in April 2013.

Item 1. Business .

General Development of Business.

Ecolab was incorporated as a Delaware corporation in 1924. Our fiscal year is the calendar year ending December 31. International subsidiaries are included in the financial statements on the basis of their U.S. GAAP (accounting principles generally accepted in the United States of America) November 30 fiscal year-ends to facilitate the timely inclusion of such entities in our consolidated financial reporting.

In 2017, we continued to invest in and build our business through various acquisitions that complement our strategic vision. Most notably, we completed the acquisition of Laboratoires Anios ("Anios"), a leading European manufacturer and marketer of hygiene and disinfection products for the healthcare, food service, and food and beverage processing industries in February 2017. In November 2017, we completed the sale of our Equipment Care division which had annualized net sales of approximately $180 million. See Part II, Item 8, Note 4 of this Form 10-K for additional information about the acquisitions and divestitures of the Company.

Financial Information About Operating Segments and Geographic Areas .

The financial information about reportable segments appearing under the heading "Operating Segments and Geographic Information" is incorporated by reference from Part II, Item 8, Note 17 of this Form 10-K.

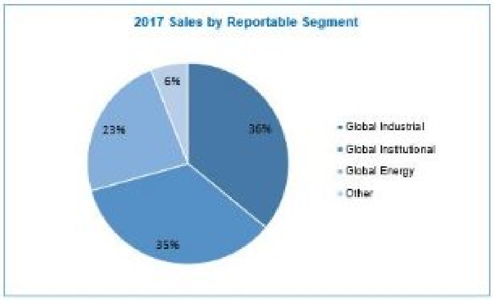
Narrative Description of Business .

General

With 2017 sales of $13.8 billion, we are the global leader in water, hygiene and energy technologies and services that protect people and vital resources. We deliver comprehensive programs, products and services to promote safe food, maintain clean environments, optimize water and energy use, and improve operational efficiencies for customers in the food, healthcare, energy, hospitality and industrial markets in more than 170 countries around the world. Our cleaning and sanitizing programs and products, and pest elimination services, support customers in the foodservice, food and beverage processing, hospitality, healthcare, government and education, retail, textile care and commercial facilities management sectors. Our products and technologies are also used in water treatment, pollution control, energy conservation, oil production and refining, steelmaking, papermaking, mining and other industrial processes. We provided equipment maintenance and repair services prior to disposal of our Equipment Care business in the fourth quarter of 2017.

We pursue a "Circle the Customer – Circle the Globe" strategy by providing an array of innovative programs, products and services designed to meet the specific operational and sustainability needs of our customers throughout the world. Through this strategy and our varied product and service mix, one customer may utilize the offerings of several of our operating segments.

The following description of our business is based upon our reportable segments as reported in our consolidated financial statements for the year ended December 31, 2017, which are located in Item 8 of Part II of this Form 10-K. Nine of our ten operating segments (eleven prior to the sale of Equipment Care), have been aggregated into three reportable segments: Global Industrial, Global Institutional and Global Energy . Our two operating segments that are primarily fee-for-service have been combined into Other, and do not meet the quantitative criteria to be separately reported. We provide similar information for Other as compared to our three reportable segments as we consider the information regarding its underlying operating segments as useful in understanding our consolidated results.



Global Industrial

This reportable segment consists of the Water, Food & Beverage, Paper, Life Sciences and Textile Care operating segments, which provide water treatment and process applications, and cleaning and sanitizing solutions, primarily to large industrial customers within the manufacturing, food and beverage processing, chemical, mining and primary metals, power generation, pulp and paper, pharmaceutical and commercial laundry industries. The underlying operating segments exhibit similar manufacturing processes, distribution methods and economic characteristics. Descriptions of the five operating segments which comprise our Global Industrial reportable segment follow below.

Water

Water serves customers across industrial and institutional markets, with the exception of the pulp and paper industry which is serviced by Paper and the energy industries which are served by Energy. Within Water, our institutional clients include commercial buildings, hospitals, universities and hotels. Light industry markets include food and beverage, manufacturing and transportation. Heavy industries served include power, mining, chemicals and primary metals.

Water provides water treatment products and water technologies programs for cooling water, waste water, boiler water and process water applications. Our cooling water treatment programs are designed to control the main problems associated with cooling water systems — corrosion, scale and microbial fouling and contamination — in open recirculating, once-through and closed systems. Our wastewater products and programs focus on improving overall plant economics, addressing compliance issues, optimizing equipment efficiency and improving operator capabilities and effectiveness. We provide integrated chemical solutions, process improvements and mechanical component modifications to optimize boiler performance and control corrosion and scale build-up. Our programs assist in the use of water for plant processes by optimizing the performance of treatment chemicals and equipment in order to minimize costs and maximize return on investment.

Our offerings include specialty products such as scale and corrosion inhibitors, antifoulants, pre-treatment solutions, membrane treatments, coagulants and flocculants, and anti-foams, as well as our 3D TRASAR ™technology, which combines chemistry, remote services and monitoring and control. We provide products and programs for water treatment and process applications aimed at combining environmental benefits with economic gains for our customers. Typically, water savings, energy savings, maintenance and capital expenditure avoidance are among the primary sources of value to our customers, with product quality and production enhancement improvements also providing a key differentiating feature for many of our offerings. Our offerings are sold primarily by our corporate account and field sales employees.

We believe that we are one of the leading suppliers world-wide among suppliers of products and programs for chemical applications within the industrial water treatment industry.

Food & Beverage

Food & Beverage addresses cleaning and sanitation to facilitate the processing of products for human consumption. Food & Beverage provides detergents, cleaners, sanitizers, lubricants and animal health products, as well as cleaning systems, electronic dispensers and chemical injectors for the application of chemical products, primarily to dairy plants, dairy farms, breweries, soft-drink bottling plants, and meat, poultry and other food processors. Food & Beverage is also a leading developer and marketer of antimicrobial products used in direct contact with meat, poultry, seafood and produce during processing in order to reduce microbial contamination. Food & Beverage also designs, engineers and installs CIP (“clean-in-place”) process control systems and facility cleaning systems for its customer base. Products for use in processing facilities are sold primarily by our corporate account and field sales employees, while products for use on farms are sold through dealers and independent, third-party distributors.

We believe that we are one of the leading suppliers world-wide of cleaning and sanitizing products to the dairy plant, dairy farm, food, meat and poultry, and beverage/brewery processor industries.

Paper

Paper provides water and process applications for the pulp and paper industries, offering a comprehensive portfolio of programs that are used in all principal steps of the papermaking process and across all grades of paper, including graphic grades, board and packaging, and tissue and towel. Paper provides its customers similar types of products and programs for water treatment and wastewater treatment as those offered by Water. Also, Paper offers two specialty programs that differentiate its offerings from Water—pulp applications and paper applications. Our pulp applications maximize process efficiency and increase pulp cleanliness and brightness in bleaching operations, as well as predict and monitor scaling potential utilizing on-line monitoring to design effective treatment programs and avoid costly failures. Our paper process applications focus on improving our customers' operational efficiency. Advanced sensing, monitoring and automation combine with innovative chemistries and detailed process knowledge to provide a broad range of customer solutions. Specialty products include flocculants, coagulants, dewatering aids, and digester yield enhances. Our offerings are sold primarily by our corporate account and field sales employees.

We believe that we are one of the leading suppliers world-wide of water treatment products and process aids to the pulp and papermaking industry.

Life Sciences

Effective in the first quarter of 2017, we established the Life Sciences operating segment. Life Science provides contamination control, cleaning and sanitizing solutions to personal care and pharmaceutical manufacturers. Life Sciences provides detergents, cleaners, sanitizers, disinfectant, as well as cleaning systems, electronic dispensers and chemical injectors for the application of chemical products. Additionally, sterile alcohols, sterile biocides, residue removal and dilution solutions, surface wipes, dispensing equipment and aerosol sprays are primarily sold for application within clean room environments. Products and programs are sold primarily through field sales personnel and corporate account personnel, and to a lesser extent through distributors.

Life Sciences is comprised of customers and accounts previously included in our Food & Beverage and Healthcare operating segments, which were related to manufacturing in the following industries: pharmaceutical, animal health and medicine, biologic products, cosmetics and medical device. Our tailored, comprehensive solutions and technical know-how focus on ensuring product quality and safety while improving operational efficiency in customers' cleaning, sanitation and disinfection processes.

Textile Care

Textile Care provides products and services that manage the entire wash process through custom designed programs, premium products, dispensing equipment, water and energy management, and real time data management for large scale, complex commercial laundry operations including uniform rental, hospitality, linen rental and healthcare laundries. Textile Care's programs are designed to meet our customers' needs for exceptional cleaning, while extending the useful life of linen and reducing our customers' overall operating costs. Products and programs are marketed primarily through field sales employees and, to a lesser extent, through distributors.
We believe that we are one of the leading suppliers world-wide in the laundry markets in which we compete.

Global Institutional

This reportable segment consists of the Institutional, Specialty and Healthcare operating segments, which provide specialized cleaning and sanitizing products to the foodservice, hospitality, lodging, healthcare, government, education and retail industries. The underlying operating segments exhibit similar manufacturing processes, distribution methods and economic characteristics. Descriptions of the three operating segments which comprise our Global Institutional reportable segment follow below.

Institutional

Institutional sells specialized cleaners and sanitizers for washing dishes, glassware, flatware, foodservice utensils and kitchen equipment ("warewashing"), plus specialized cleaners for various applications throughout food service operations; for on-premise laundries (typically used by hotel and healthcare customers); and for general housekeeping functions, as well as food safety products and equipment, water filters, dishwasher racks and related kitchen sundries to the foodservice, lodging, educational and healthcare industries. Institutional also provides pool and spa treatment programs for hospitality and other commercial customers, as well as a broad range of janitorial cleaning and floor care products and programs to customers in hospitality, healthcare and commercial facilities. Institutional develops various chemical dispensing systems which are used by our customers to efficiently and safely dispense our cleaners and sanitizers. In addition, Institutional markets a lease program comprised of energy-efficient dishwashing machines, detergents, rinse additives and sanitizers, including full machine maintenance. Through our EcoSure Food Safety Management business, Institutional also provides customized on-site evaluations, training and quality assurance services to foodservice operations.

Institutional sells its products and programs primarily through its field sales and corporate account sales personnel. Corporate account sales personnel establish relationships and negotiate contracts with larger multi-unit or "chain" customers. We also utilize independent, third-party foodservice, broad-line and janitorial distributors to provide logistics to end customers for accounts that prefer to purchase through these distributors. Many of these distributors also participate in marketing our product and service offerings to the end customers. Through our field sales personnel, we generally provide the same customer support to end-use customers supplied by these distributors as we do to direct customers.

We believe that we are one of the leading global suppliers of warewashing and laundry products and programs to the food service, hospitality and lodging markets.

Specialty

Specialty supplies cleaning and sanitizing chemical products and related items primarily to regional, national and international quick service restaurant ("QSR") chains and food retailers (i.e., supermarkets and grocery stores). Its products include specialty and general purpose hard surface cleaners, degreasers, sanitizers, polishes, hand care products and assorted cleaning tools and equipment which are primarily sold under the "Ecolab" and "Kay" brand names. Specialty's cleaning and sanitation programs are customized to meet the needs of the market segments it serves and are designed to provide highly effective cleaning performance, promote food safety, reduce labor costs and enhance user and guest safety. A number of dispensing options are available for products in the core product range. Specialty supports its product sales with training programs and technical support designed to meet the special needs of its customers.

Both Specialty's QSR business and its food retail business utilize a corporate account sales force which manages relationships with customers at the corporate headquarters and regional office levels (and, in the QSR market segment, at the franchisee level) and a field sales force which provides program support at the individual restaurant or store level. QSR customers are primarily supplied through third party distributors while most food retail customers utilize their own distribution networks. While Specialty's customer base has broadened over the years, Specialty's business remains largely dependent upon a limited number of major QSR chains and franchisees and large food retail customers.

We believe that Specialty is one of the leading suppliers of cleaning and sanitizing products to the global QSR market and a leading supplier of cleaning and sanitizing products to the global food retail market.

Healthcare

Healthcare provides infection prevention, surgical solutions and contamination control solutions to acute care hospitals, surgery centers, medical device Original Equipment Manufacturers ("OEM"), and pharmaceutical and hospital clean room environments. Healthcare's proprietary infection prevention and surgical solutions (hand hygiene, hard surface disinfection, instrument cleaning, patient drapes, equipment drapes and surgical fluid warming and cooling systems) are sold primarily under the "Ecolab", "Microtek" and "Anios" brand names to various departments within the acute care environment (Infection Control, Environmental Services, Central Sterile and Operating Room). Healthcare sells its products and programs primarily through field sales personnel and corporate account personnel but also sells through healthcare distributors.

We believe Healthcare is a leading supplier of infection prevention and surgical solutions in the United States and Europe.

Global Energy

This reportable segment, which operates primarily under the Nalco Champion name, consists of the Energy operating segment, which serves the process chemicals and water treatment needs of the global petroleum and petrochemical industries in both upstream and downstream applications.

Energy provides on-site, technology-driven solutions to the global drilling and completion, oil and gas production and refining and petrochemical industries. Our product portfolio includes: additives for drilling and well stimulation, corrosion inhibitors, oil and water separation, scale control, paraffin and asphaltene control, biocides, hydrate control, hydrogen sulfide removal, oil dispersants, foamers and anti-foamers, flow improvers, anti-foulants, crude desalting, monomer inhibitors, anti-oxidants, fuel and lubricant additives, and traditional water treatment.

The Energy operating segment operates under an upstream group composed primarily of our WellChem and Oil Field Chemicals businesses and a downstream refinery and petrochemical processing group. Our upstream group provides solutions to the oil and gas production sector, including crude oil and natural gas production, pipeline gathering/transmission systems, gas processing, heavy oil and bitumen upgrading and enhanced oil recovery. Upstream also supplies chemicals for the cementing, drilling, fracturing and acidizing phases of well drilling and stimulation. Our priority is to safely manage the critical challenges facing today's oil and gas producers throughout the life cycle of their assets, with such an approach helping our customers minimize risk, achieve their production targets and maximize profitability. Our downstream group provides products and programs for process and water treatment applications specific to the petroleum refining and fuels industry, enabling our customers to profitably refine and upgrade hydrocarbons. Our heavy oil upgrading programs minimize operational costs and mitigate fouling, corrosion, foaming and the effects of heavy metals during the refining process. We also offer fuel additives, including corrosion inhibitors, to protect engine fuel systems and pre-market underground storage tanks and piping. Our customers include nearly all of the largest publicly traded oil companies, as well as national oil companies and large independent oil companies. Our Energy offerings are sold primarily by our corporate account and field sales employees and, to a lesser extent, through distributors, sales agents and joint ventures.

We believe Energy is one of the leading global providers of specialty chemicals to the upstream oil and gas industry, and downstream refineries and petrochemical operations.

Other

Other consists of the Pest Elimination and Equipment Care, prior to its sale in November 2017, operating segments. We provide pest elimination and kitchen repair and maintenance through our two operating units that are primarily fee-for-service businesses. In general, these businesses provide service which can augment or extend our product offerings to our business customers as a part of our “Circle the Customer” approach and, in particular, by enhancing our food safety capabilities.

Pest Elimination

Pest Elimination provides services designed to detect, eliminate and prevent pests, such as rodents and insects, in restaurants, food and beverage processors, educational and healthcare facilities, hotels, quick service restaurant and grocery operations and other institutional and commercial customers. The services of Pest Elimination are sold and performed by field sales and service personnel.

Pest Elimination continues to expand its geographic coverage. In addition to the United States, which constitutes the largest operation, we operate in various countries in Asia Pacific, Western Europe, Latin America and South Africa, with the largest operations in France, the United Kingdom, Greater China and Mexico.

We believe Pest Elimination is a leading supplier of pest elimination programs to the commercial, hospitality and institutional markets in the geographies it serves.

Equipment Care

Prior to its sale in November 2017, Equipment Care provided equipment repair, maintenance and preventive maintenance services for the commercial food service industry. Repair services were offered for in-warranty repair, acting as the manufacturer’s authorized service agent, as well as after-warranty repair. In addition, Equipment Care operated as a parts distributor to repair service companies and end-use customers. Operations were solely in the United States.

Additional Information

International Operations

We directly operate in approximately 100 countries outside of the United States through wholly-owned subsidiaries or, in some cases, through a joint venture with a local partner. In certain countries, selected products are sold by our export operations to distributors, agents or licensees, although the volume of those sales is not significant in terms of our overall revenues. In general, our businesses conducted outside the United States are similar to those conducted in the United States.

Our business operations outside the United States are subject to the usual risks of foreign operations, including possible changes in trade and foreign investment laws, international business laws and regulations, tax laws, currency exchange rates and economic and political conditions. The profitability of our International operations is generally lower than the profitability of our businesses in the United States, due to (i) the additional cost of operating in numerous and diverse foreign jurisdictions and regulations, (ii) higher costs of importing certain raw materials and finished goods in some regions, (iii) the smaller scale of international operations where certain operating locations are smaller in size, and (iv) the additional reliance on distributors and agents in certain countries which can negatively impact our margins. Proportionately larger investments in sales and technical support are also necessary in certain geographies in order to facilitate the growth of our international operations.

Competition

In general, the markets in which the businesses in our Global Industrial reportable segment compete are led by a few large companies, with the rest of the market served by smaller entities focusing on more limited geographic regions or a smaller subset of products and services. Our businesses in this segment compete on the basis of their demonstrated value, technical expertise, chemical formulations, customer support, detection equipment, monitoring capabilities, and dosing and metering equipment.

The businesses in our Global Institutional reportable segment and Other have two significant classes of competitors. First, we compete with a small number of large companies selling directly or through distributors on a national or international scale. Second, we have numerous smaller regional or local competitors which focus on more limited geographies, product lines and/or end-use customer segments. We compete principally by providing superior value, premium customer support and differentiated products to help our customers protect their brand reputation.

Our Global Energy reportable segment competes with a limited number of multinational companies, with the remainder of the market comprised of smaller, regional niche companies focused on limited geographic areas. We compete in this business on the basis of our product quality, technical expertise, chemical formulations, effective global supply chain, strong customer service and emphasis on safety and environmental leadership.

Sales

Products, systems and services are primarily marketed in domestic and international markets by Company-trained field sales personnel who also advise and assist our customers in the proper and efficient use of the products and systems in order to meet a full range of cleaning and sanitation, water treatment and process chemistry needs. Independent, third-party distributors and, to a lesser extent, sales agents, are utilized in several markets, as described in the segment descriptions found above.

Number of Employees

We had 48,400 employees as of December 31, 2017.

Customers and Classes of Products

We believe that our business is not materially dependent upon a single customer. Additionally, although we have a diverse customer base and no customer or distributor constitutes 10 percent or more of our 2017 consolidated revenues, we do have customers and independent, third-party distributors, the loss of which could have a material adverse effect on results of operations for the affected earnings periods; however, we consider it unlikely that such an event would have a material adverse impact on our financial position. No material part of our business is subject to renegotiation or termination at the election of a governmental unit.

We sold one class of products within the Global Institutional segment which comprised 10% or more of consolidated net sales in the last three years. Sales of warewashing products were approximately 11% of consolidated net sales in 2017 and 2016 and 10% of consolidated net sales in 2015.

Patents and Trademarks

We own and license a number of patents, trademarks and other intellectual property. While we have an active program to protect our intellectual property by filing for patents or trademarks and pursuing legal action, when appropriate, to prevent infringement, except for the items listed below, we do not believe that our overall business is materially dependent on any individual patent or trademark.

- Patents related to our TRASAR and 3D TRASAR technology, which are material to our Global Industrial reportable segment. U.S. and foreign patents protect aspects of our key TRASAR and 3D TRASAR technology until at least 2024.

- Trademarks related to Ecolab, Nalco and 3D TRASAR, which collectively are material to all of our reportable segments. The Ecolab, Nalco and 3D TRASAR trademarks are registered or applied for in all of our key markets, and we anticipate maintaining them indefinitely.

Seasonality

We experience variability in our quarterly operating results due to seasonal sales volume and business mix fluctuations in our operating segments. Part II, Item 8, Note 18, entitled “Quarterly Financial Data” of this Form 10-K is incorporated herein by reference.

Investments in Equipment

We have no unusual working capital requirements. We have invested in the past, and will continue to invest in the future, in process control and monitoring equipment consisting primarily of systems used by customers to dispense our products as well as to monitor water systems. The investment in such equipment is discussed under the heading "Investing Activities" in Management's Discussion and Analysis of Financial Condition and Results of Operations of this Form 10-K.

Manufacturing and Distribution

We manufacture most of our products and related equipment in Company-operated manufacturing facilities. Some products are also produced for us by third-party contract manufacturers. Other products and equipment are purchased from third-party suppliers. Additional information on product/equipment sourcing is found in the segment discussions above and additional information on our manufacturing facilities is located under Part I, Item 2. “Properties,” of this Form 10-K.

Deliveries to customers are made from our manufacturing plants and a network of distribution centers and third-party logistics service providers. We use common carriers, our own delivery vehicles, and distributors for transport. Additional information on our plant and distribution facilities is located under Part I, Item 2. “Properties,” of this Form 10-K.

Raw Materials

Raw materials purchased for use in manufacturing our products are inorganic chemicals, including alkalis, acids, biocides, phosphonates, phosphorous materials, silicates and salts; and organic chemicals, including acids, alcohols, amines, fatty acids, surfactants, solvents, monomers and polymers. Healthcare purchases plastic films and parts to manufacture medical devices that serve the surgical and infection prevention markets. Pesticides used by Pest Elimination are purchased as finished products under contract or purchase order from the producers or their distributors. We also purchase packaging materials for our manufactured products and components for our specialized cleaning equipment and systems. We purchase more than 10,000 raw materials, with the largest single raw material representing less than 2% of raw material purchases. Our raw materials, with the exception of a few specialized chemicals which we manufacture, are generally purchased on an annual contract basis and are ordinarily available in adequate quantities from a diverse group of suppliers globally. When practical, global sourcing is used so that purchasing or production locations can be shifted to control product costs at globally competitive levels.

Research and Development

Our research and development program consists principally of developing and validating the performance of new products, processes, techniques and equipment, improving the efficiency of existing ones, improving service program content, evaluating the environmental compatibility of products and technical support. Key disciplines include analytical and formulation chemistry, microbiology, process and packaging engineering, remote monitoring engineering and product dispensing technology. Substantially all of our principal products have been developed by our research, development and engineering personnel.

We believe continued research and development activities are critical to maintaining our leadership position within the industry and will provide us with a competitive advantage as we seek additional business with new and existing customers.

Part II, Item 8, Note 14, entitled "Research and Development Expenditures" of this Form 10-K is incorporated herein by reference.

Joint Ventures

Over time, we have entered into partnerships or joint ventures in order to meet local ownership requirements, to achieve quicker operational scale, to expand our ability to provide our customers a more fully integrated offering or to provide other benefits to our business or customers. During 2017, the impact on our consolidated net income of our joint ventures, in the aggregate, was less than three percent. The table below identifies our most significant consolidated and non-consolidated joint ventures, summarized by the primary purpose of the joint venture.

Local Ownership Requirements / Geographic Expansion		
Joint Venture	**Location**	**Segment**
Nalco Saudi Co. Ltd.	Saudi Arabia	Global Energy, Global Industrial
AGS Champion LLP	Kazakhstan	Global Energy
Nalco Angola Prestação de Serviços, Limitada	Angola	Global Energy
RauanNalco LLP	Kazakhstan	Global Energy
Nalco Champion EG Sarl	Equatorial Guinea	Global Energy
Emirates National Chemical Company LLC	United Arab Emirates	Global Energy
Malaysian Energy Chemical & Services Sdn. Bhd.	Malaysia	Global Energy
Arpal Gulf, LLC	United Arab Emirates	Global Institutional
Nalco Champion Dai-ichi India Private Limited	India	Global Energy
Nalco Champion Ghana Limited	Ghana	Global Energy
Operational Scale / Geographic Critical Mass		
Joint Venture	**Location**	**Segment**
Katayama Nalco Inc.	Japan	Global Industrial
Technology / Expanded Product Offering / Manufacturing Capability		
Joint Venture	**Location**	**Segment**
Aquatech International, LLC	United States	Global Industrial
Treated Water Outsourcing	United States	Global Industrial
Derypol, S.A.	Spain	Global Industrial
Century LLC	United States	Global Institutional
CJSC Nalco Element JV	Russia	Global Energy
Kogalym Chemicals Plant LLC	Russia	Global Energy
Petrochem Performance Products	Azerbaijan	Global Energy
HanSteel Nalco Water Treatment (Handan) Co., Limited	China	Global Industrial

Additionally, we continue to be party to the Ecolab S.A. joint venture in Venezuela, which historically operated businesses in our Global Industrial and Global Institutional segments. This joint venture was included among the Venezuelan subsidiaries that we deconsolidated for U.S. GAAP purposes effective at the end of the fourth quarter of 2015, as further described within the MD&A and Part II, Item 8, Note 3 of this Form 10-K.

We will continue to evaluate the potential for partnerships and joint ventures that can assist us in increasing our geographic, technological and product reach.

Environmental and Regulatory Considerations

Our businesses are subject to various legislative enactments and regulations relating to the protection of the environment and public health. While we cooperate with governmental authorities and take commercially practicable measures to meet regulatory requirements and avoid or limit environmental effects, some risks are inherent in our businesses. Among the risks are costs associated with transporting and managing hazardous materials and waste disposal and plant site clean-up, fines and penalties if we are found to be in violation of law, as well as modifications, disruptions or discontinuation of certain operations or types of operations including product recalls and reformulations. Similarly, the need for certain of our products and services is dependent upon or might be limited by governmental laws and regulations. Changes in such laws and regulations, including among others, air pollution regulations and regulations relating to oil and gas production (including those related to hydraulic fracturing), could impact the sales of some of our products or services. In addition to an increase in costs of manufacturing and delivering products, a change in production regulations or product regulations could result in interruptions to our business and potentially cause economic or consequential losses should we be unable to meet the demands of our customers for products.

Additionally, although we are not currently aware of any such circumstances, there can be no assurance that future legislation or enforcement policies will not have a material adverse effect on our consolidated results of operations, financial position or cash flows. Environmental and regulatory matters most significant to us are discussed below.

Ingredient Legislation : Various laws and regulations have been enacted by state, local and foreign jurisdictions pertaining to the sale of products which contain phosphorous, volatile organic compounds, or other ingredients that may impact human health or the environment. Under California Proposition 65, for example, label disclosures are required for certain products containing chemicals listed by California. Chemical management initiatives that promote pollution prevention through research and development of safer chemicals and safer chemical processes are being advanced by certain states, including California, Maine, Maryland, Massachusetts, Minnesota, Oregon and South Carolina. Environmentally preferable purchasing programs for cleaning products have been enacted in nine states to date, and in recent years have been considered by several other state legislatures. Cleaning product ingredient disclosure legislation has been introduced in the U.S. Congress in each of the past few years but has not passed, and several states are considering further regulations in this area. Last year, California passed the Cleaning Product Right to Know Act of 2017, which will require ingredient transparency on-line and on-label by 2020 and 2021, respectively. New York is in the process of drafting similar regulations with an expected passage in 2018. The U.S. Government is monitoring “green chemistry” initiatives through a variety of initiatives, including its “Design for the Environment” (“DfE”)/“Safer Choice” program. DfE/Safer Choice has three broad areas of work (recognition of safer products on a DfE/Safer Choice label, development of best practices for industrial processes and evaluation of safer chemicals), and we are involved in these to varying degrees. Our Global Institutional and Global Industrial cleaning products are subject to the regulations and may incur additional stay-in-market expenses associated with conducting the required alternatives analyses for chemicals of concern. To date, we generally have been able to comply with such legislative requirements by reformulation or labeling modifications. Such legislation has not had a material adverse effect on our consolidated results of operations, financial position or cash flows to date.

TSCA : The nation’s primary chemicals management law, the Toxic Substances Control Act (“TSCA”), was updated for the first time in 40 years with the passage of the Frank R. Lautenberg Chemical Safety for the 21st Century Act (“LCSA”) in 2016. The LCSA modernizes the original 1976 legislation, aiming to establish greater public confidence in the safety of chemical substances in commerce, improve the U.S. Environmental Protection Agency (“EPA”) EPA’s capability and authority to regulate existing and new chemical substances, and prevent further state action or other notification programs like REACH (see below). For Ecolab, the new TSCA rules will mainly impact testing and submission costs for new chemical substances in the United States. In addition, the EPA likely will be more aggressively using the existing TSCA tools to manage chemicals of concern. We anticipate that compliance with new requirements under TSCA could be similar to the costs associated with REACH in the European Union, which is discussed below.

REACH : The European Union has enacted a regulatory framework for the Registration, Evaluation and Authorization of Chemicals (“REACH”). It established a new European Chemicals Agency (“ECHA”) in Helsinki, Finland, which is responsible for evaluating data to determine hazards and risks and to manage this program for authorizing chemicals for sale and distribution in Europe. We met the pre-registration requirements of REACH, the 2010 and 2013 registration deadlines, and are on track to meet the final registration deadlines and requirements in 2018. To help manage this program, we have been simplifying our product lines and working with chemical suppliers to comply with registration requirements. In addition, Korea, Taiwan and other countries are implementing similar requirements. Potential costs to us are not yet fully quantifiable, but are not expected to have a material adverse effect on our consolidated results of operations or cash flows in any one reporting period or on our financial position.

GHS : In 2003, the United Nations adopted a standard on hazard communication and labeling of chemical products known as the Globally Harmonized System of Classification and Labeling of Chemicals (“GHS”). GHS is designed to facilitate international trade and increase safe handling and use of hazardous chemicals through a worldwide system that classifies chemicals based on their intrinsic hazards and communicates information about those hazards through standardized product labels and safety data sheets (“SDSs”). Most countries in which we operate will adopt GHS-related legislation, and numerous countries already have done so. The primary cost of compliance revolves around reclassifying products and revising SDSs and product labels. We met the 2015 deadlines in the U.S. and European Union and are working toward a phased-in approach to mitigate the costs of GHS implementation in other countries (e.g., Thailand). Potential costs to us are not expected to have a material adverse effect on our consolidated results of operations or cash flows in any one reporting period or on our financial position.

Pesticide and Biocide Legislation : Various international, federal and state environmental laws and regulations govern the manufacture and/or use of pesticides. We manufacture and sell certain disinfecting, sanitizing and material preservation products that kill or reduce microorganisms (bacteria, viruses, fungi) on hard environmental surfaces, in process fluids and on certain food products. Such products constitute “pesticides” or “antimicrobial pesticides” under the current definitions of the Federal Insecticide, Fungicide, and Rodenticide Act (“FIFRA”), as amended by the Food Quality Protection Act of 1996, the principal federal statute governing the manufacture, labeling, handling and use of pesticides. We maintain several hundred product registrations with the U.S. Environmental Protection Agency (“EPA”). Registration entails the necessity to meet certain efficacy, toxicity and labeling requirements and to pay on-going registration fees. In addition, each state in which these products are sold requires registration and payment of a fee. In general, the states impose no substantive requirements different from those required by FIFRA. However, California and certain other states have adopted additional regulatory programs, and California imposes a tax on total pesticide sales in that state. While the cost of complying with rules as to pesticides has not had a material adverse effect on our consolidated results of operations, financial condition, or cash flows to date, the costs and delays in receiving necessary approvals for these products continue to increase. Total fees paid to the EPA and the states to obtain or maintain pesticide registrations are not expected to significantly affect our consolidated results of operations or cash flows in any one reporting period or our financial position.

In Europe, the Biocidal Product Directive and the more recent Biocidal Products Regulation established a program to evaluate and authorize marketing of biocidal active substances and products. We are working with suppliers and industry groups to manage these requirements and have met the first relevant deadline of the program by the timely submission of dossiers for active substances. Anticipated registration costs, which will be incurred through the multi-year phase-in period, will be significant; however, these costs are not expected to significantly affect our consolidated results of operations or cash flows in any one reporting period or our financial position. The same is true for emerging biocide regulations in Asia.

In addition, Pest Elimination applies restricted-use pesticides that it generally purchases from third parties. That business must comply with certain standards pertaining to the use of such pesticides and to the licensing of employees who apply such pesticides. Such regulations are enforced primarily by the states or local jurisdictions in conformity with federal regulations. We have not experienced material difficulties in complying with these requirements.

FDA Antimicrobial Product Requirements : Various laws and regulations have been enacted by federal, state, local and foreign jurisdictions regulating certain products manufactured and sold by us for controlling microbial growth on humans, animals and foods. In the United States, these requirements generally are administered by the U.S. Food and Drug Administration ("FDA"). However, the U.S. Department of Agriculture and EPA also may share in regulatory jurisdiction of antimicrobials applied to food. The FDA codifies regulations for these product categories in order to ensure product quality, safety and effectiveness. The FDA also has been expanding requirements applicable to such products, including proposing regulations for over-the-counter antiseptic drug products, which may impose additional requirements associated with antimicrobial hand care products and associated costs when finalized by the FDA. FDA regulations associated with the Food Safety Modernization Act may impose additional requirements related to safety product lines. To date, such requirements have not had a material adverse effect on our consolidated results of operations, financial position or cash flows.

Medical Device and Drug Product Requirements : As a manufacturer, distributor and marketer of medical devices and human drugs, we also are subject to regulation by the FDA and corresponding regulatory agencies of the state, local and foreign governments in which we sell our products. These regulations govern the development, testing, manufacturing, packaging, labeling, distribution and marketing of medical devices and medicinal products. We also are required to register with the FDA as a medical device and drug manufacturer, comply with post-market reporting (e.g., Adverse Event Reporting, MDR and Recall) requirements, and to comply with the FDA’s current Good Manufacturing Practices and Quality System Regulations which require that we have a quality system for the design and production of our products intended for commercial distribution in the United States and satisfy recordkeeping requirements with respect to our manufacturing, testing and control activities. Countries in the European Union require that certain products being sold within their jurisdictions obtain a “CE mark”, an international symbol of adherence to quality assurance standards, and be manufactured in compliance with certain requirements (e.g., Medical Device Directive 93/42/EE and ISO 13485). We have CE mark approval to sell various medical device and medicinal products in Europe. Our other international non-European operations also are subject to government regulation and country-specific rules and regulations. Regulators at the federal, state and local level have imposed, are currently considering and are expected to continue to impose regulations on medical devices and drug products. No prediction can be made of the potential effect of any such future regulations, and there can be no assurance that future legislation or regulations will not increase the costs of our products or prohibit the sale or use of certain products.

Equipment: Ecolab’s products are dispensed by equipment that is subject to state and local regulatory requirements, as well as being subject to UL, NSF, and other approval requirements. We have both dedicated manufacturing facilities and third-party production of our equipment. We are developing processes to monitor and manage changing regulatory regimes and assist with equipment systems compliance. To date, such requirements have not had a material adverse effect on our consolidated results of operations, financial position or cash flows.

Other Environmental Legislation : Our manufacturing plants are subject to federal, state, local or foreign jurisdiction laws and regulations relating to discharge of hazardous substances into the environment and to the transportation, handling and disposal of such substances. The primary federal statutes that apply to our activities in the United States are the Clean Air Act, the Clean Water Act and the Resource Conservation and Recovery Act. We are also subject to the Superfund Amendments and Reauthorization Act of 1986, which imposes certain reporting requirements as to emissions of hazardous substances into the air, land and water. The products we produce and distribute into Europe are also subject to directives governing electrical waste (WEEE Directive 2012/19/EU) and restrictive substances (RoHS Directive 2011/65/EU). Similar legal requirements apply to Ecolab's facilities globally. We make capital investments and expenditures to comply with environmental laws and regulations, to promote employee safety and to carry out our announced environmental sustainability principles. To date, such expenditures have not had a significant adverse effect on our consolidated results of operations, financial position or cash flows. Our capital expenditures for environmental, health and safety projects worldwide were approximately $70 million in 2017 and $60 million in 2016. Approximately $43 million has been budgeted globally for projects in 2018. The decrease in 2018 from 2017 is due to the completion of several large safety projects at our manufacturing facilities.

Climate Change : Various laws and regulations pertaining to climate change have been implemented or are being considered for implementation at the international, national, regional and state levels, particularly as they relate to the reduction of greenhouse gas ("GHG") emissions. None of these laws and regulations directly apply to Ecolab at the present time; however, as a matter of corporate policy, we support a balanced approach to reducing GHG emissions while sustaining economic growth. We are committed to reducing our carbon footprint and have made significant strides in recent years. In 2014, we received a Climate Leadership Award, co-sponsored by EPA, recognizing Ecolab for achieving an absolute global greenhouse gas emissions reduction of more than 12.5 percent (22.4 percent intensity reduction).

Our current global sustainability targets were established in 2016. They include a 25 percent reduction in water withdrawals and a 10 percent reduction in greenhouse gas emissions by 2020. In addition to our internal sustainability performance, we partner with customers at more than one million customer locations around the world to reduce energy and greenhouse gas emissions through our high-efficiency solutions in cleaning and sanitation, water, paper and energy services. We also introduced a customer impact goal for the first time. By partnering with our customers to help them do more with less through the use of our solutions, we aim to help our customers conserve more than 300 billion gallons of water annually by 2030.

Environmental Remediation and Proceedings : Along with numerous other potentially responsible parties ("PRP"), we are currently involved with waste disposal site clean-up activities imposed by the federal Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA") or state equivalents at 35 sites in the United States. Additionally, we have similar liability at seven sites outside the United States. In general, under CERCLA, we and each other PRP that actually contributed hazardous substances to a Superfund site are jointly and severally liable for the costs associated with cleaning up the site. Customarily, the PRPs will work with the EPA to agree and implement a plan for site remediation.

Based on an analysis of our experience with such environmental proceedings, our estimated share of all hazardous materials deposited on the sites referred to in the preceding paragraph, and our estimate of the contribution to be made by other PRPs which we believe have the financial ability to pay their shares, we have accrued our best estimate of our probable future costs relating to such known sites. In establishing accruals, potential insurance reimbursements are not included. The accrual is not discounted. It is not feasible to predict when the amounts accrued will be paid due to the uncertainties inherent in the environmental remediation and associated regulatory processes.

We have also been named as a defendant in lawsuits where our products have not caused injuries, but the claimants wish to be monitored for potential future injuries. We cannot predict with certainty the outcome of any such tort claims or the involvement we or our products might have in such matters in the future, and there can be no assurance that the discovery of previously unknown conditions will not require significant expenditures. In each of these chemical exposure cases, our insurance carriers have accepted the claims on our behalf (with or without reservation) and our financial exposure should be limited to the amount of our deductible; however, we cannot predict the number of claims that we may have to defend in the future and we may not be able to continue to maintain such insurance.

We have also been named as a defendant in a number of lawsuits alleging personal injury due to exposure to hazardous substances, including multi-party lawsuits alleging personal injury in connection with our products and services. While we do not believe that any of these suits will be material to us based upon present information, there can be no assurance that these environmental matters could not have, either individually or in the aggregate, a material adverse effect on our consolidated results of operations, financial position or cash flows.

Our worldwide net expenditures for contamination remediation were approximately $6 million in 2017 and $9 million in 2016. Our worldwide accruals at December 31, 2017 for probable future remediation expenditures, excluding potential insurance reimbursements, totaled approximately $21 million. We review our exposure for contamination remediation costs periodically and our accruals are adjusted as considered appropriate. While the final resolution of these issues could result in costs below or above current accruals and, therefore, have an impact on our consolidated financial results in a future reporting period, we believe the ultimate resolution of these matters will not have a material effect on our consolidated results of operations, financial position or cash flows.

Iran Threat Reduction and Syria Human Rights Act of 2012

Under the Iran Threat Reduction and Syria Human Rights Act of 2012, which added Section 13(r) of the Securities Exchange Act of 1934, the Company is required to disclose in its periodic reports if it or any of its affiliates knowingly engaged in certain activities, transactions or dealings relating to Iran or with entities or individuals designated pursuant to certain Executive Orders. Disclosure is required even where the activities are conducted outside the U.S. by non-U.S. affiliates in compliance with applicable law, and even if the activities are not covered or prohibited by U.S. law. After the easing of certain sanctions by the United States against Iran in January 2016 and in compliance with the economic sanctions regulations administered by U.S. Treasury's Office of Foreign Assets Control

(OFAC) and U.S. export control laws, a wholly-owned non-U.S. subsidiary of the Company completed the following sales related to businesses in our Energy operating segment pursuant to and in compliance with the terms and conditions of OFAC's General License H: sales of products used for process and water treatment applications in (i) upstream oil and gas production and (ii) petrochemical plants totaling $5.9 million during the subsidiary's fiscal year ended November 30, 2017, and additional sales of such products totaling $0.4 million during December 2017, were made to a distributor in Dubai and two distributors in Iran. The net profit before taxes associated with these sales is estimated to be $1.6 million and $0.1 million, respectively. Our non-U.S. subsidiary intends to continue doing business in Iran under General License H in compliance with U.S. economic sanctions and export control laws, which sales may require additional disclosure pursuant to the abovementioned statute.

Available Information .

We file annual, quarterly and current reports, proxy statements and other information with the SEC. You may read and copy any reports, statements or other information we file with the Securities and Exchange Commission ("SEC") at the SEC's Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. You may obtain information about the operation of the SEC Public Reference Room in Washington, D.C. by calling the SEC at (800) 732-0330. The SEC maintains a website that contains reports, proxy and information statements, and other information regarding issuers, including the Company, that file electronically with the SEC at http://www.sec.gov .

General information about us, including our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, as well as any amendments and exhibits to those reports, are available free of charge through our website at www.ecolab.com/investor as soon as reasonably practicable after we file them with, or furnish them to, the SEC.

In addition, the following governance materials are available on our web site at www.ecolab.com/investors/corporate-governance: (i) charters of the Audit, Compensation, Finance, Governance and Safety, Health and Environment Committees of our Board of Directors; (ii) our Board's Corporate Governance Principles; and (iii) our Code of Conduct.

Executive Officers .

The persons listed in the following table are our current executive officers. Officers are elected annually. There is no family relationship among any of the directors or executive officers and no executive officer has been involved during the past ten years in any legal proceedings described in applicable Securities and Exchange Commission regulations.

Name	Age	Office	Positions Held Since Jan. 1, 2013
Douglas M. Baker, Jr.	59	Chairman of the Board and Chief Executive Officer	Jan. 2013 – Present
Christophe Beck	50	Executive Vice President and President – Global Nalco Water	May 2017 – Present
		Executive Vice President and President – Global Water & Process Services	May 2015 – May 2017
		Executive Vice President and President – Regions	Jan. 2013 – May 2015
Larry L. Berger	57	Executive Vice President and Chief Technical Officer	Jan. 2013 – Present
Alex N. Blanco	57	Executive Vice President and Chief Supply Chain Officer	Jan. 2013 – Present
Darrell R. Brown	54	Executive Vice President and President – Energy Services	Jan. 2018 – Present
		Executive Vice President, Global Downstream and WellChem	Apr. 2017 – Dec. 2017
		Executive Vice President and President – Europe	Feb. 2014 – Mar. 2017
		Executive Vice President and President – Asia Pacific	Jan. 2013 – Jan. 2014
Thomas W. Handley	63	President and Chief Operating Officer	Jan. 2013 – Present
Michael A. Hickey	56	Executive Vice President and President – Global Institutional	Jan. 2013 – Present
Roberto Inchaustegui	62	Executive Vice President and President – Global Services and Specialty	Jan. 2013 – Present
Bruno Lavandier	51	Senior Vice President and Corporate Controller	May 2017 – Present
		Senior Vice President, Ecolab Catalyst Program	Mar. 2017 – Apr. 2017
		Senior Vice President of Finance, Global Supply Chain	Jan. 2015 – Feb. 2017
		Vice President of Finance, Global Supply Chain	Aug. 2014 – Dec. 2014
		President TIORCO and Vice President of Nalco EOR (Enhanced Oil Recovery) Solutions	Jan. 2013 – July 2014
Laurie M. Marsh	54	Executive Vice President – Human Resources	Nov. 2013 – Present
		Vice President – Total Rewards and HR Service Delivery & Technology	Jan. 2013 – Oct. 2013

Name	Age	Office	Positions Held Since Jan. 1, 2013
Michael C. McCormick	55	Executive Vice President, General Counsel and Secretary	Oct. 2017 – Present
		Executive Vice President, General Counsel and Assistant Secretary	Mar. 2017 – Sep. 2017
		Chief Compliance Officer, Deputy General Counsel and Assistant Secretary	June 2016 – Feb. 2017
		Chief Compliance Officer and Assistant Secretary	Mar. 2014 – May 2016
		Corporate Compliance Officer, Associate General Counsel and Assistant Secretary	Jan. 2013 – Feb. 2014
Timothy P. Mulhere	55	Executive Vice President and President – Regions	May 2015 – Present
		Executive Vice President and President – Global Water and Process Services	Jan. 2013 – May 2015
Daniel J. Schmechel	58	Chief Financial Officer and Treasurer	Jan. 2017 – Present
		Chief Financial Officer	Jan. 2013 – Dec. 2016
Jill S. Wyant	46	Executive Vice President and President – Global Regions and Global Healthcare	Jan. 2018 – Present
		Executive Vice President and President – Global Food & Beverage, Healthcare and Life Sciences	May 2016 – Dec. 2017
		Executive Vice President and President – Global Food & Beverage	Jan. 2013 – Apr. 2016

Forward-Looking Statements

This Form 10-K, including Part I, Item 1, entitled “Business”, and the MD&A within Part II, Item 7, contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. These statements include expectations concerning items such as:

- amount, funding and timing of cash expenditures relating to our restructuring and other initiatives
- future cash flows, access to capital, targeted credit rating metrics and impact of credit rating downgrade
- uses for cash, including dividends, share repurchases, debt repayments, capital investments and strategic business acquisitions
- global market risk
- impact of oil price fluctuations, comparative performance and prospects of businesses in our Global Energy segment
- long-term potential of our business
- impact of changes in exchange rates and interest rates
- customer retention rate
- bad debt experience, non-performance of counterparties and losses due to concentration of credit risk
- disputes, claims and litigation
- environmental contingencies
- impact and cost of complying with laws and regulations
- sustainability targets
- returns on pension plan assets
- contributions to pension and postretirement healthcare plans
- amortization expense
- impact of new accounting pronouncements
- income taxes, including valuation allowances, loss carryforwards, unrecognized tax benefits, uncertain tax positions and deductibility of goodwill
- recognition of share-based compensation expense
- payments under operating leases
- future benefit plan payments
- market position
- doing business in Iran

Without limiting the foregoing, words or phrases such as “will likely result,” “are expected to,” “will be”, “will continue,” “is anticipated,” “we believe,” “we expect,” “estimate,” “project” (including the negative or variations thereof), “intends,” “could” or similar terminology, generally identify forward-looking statements. Forward-looking statements may also represent challenging goals for us. These statements, which represent the Company’s expectations or beliefs concerning various future events, are based on current expectations that involve a number of risks and uncertainties that could cause actual results to differ materially from those of such forward-looking statements. We caution that undue reliance should not be placed on such forward-looking statements, which speak only as of the date made. For a further discussion of these and other factors which could cause results to differ from those expressed in any forward-looking statement, see Item 1A of this Form 10-K, entitled “Risk Factors”. Except as may be required under applicable law, we undertake no duty to update our forward-looking statements.

Item 1A. Risk Factors .

The following are important factors which could affect our financial performance and could cause our actual results for future periods to differ materially from our anticipated results or other expectations, including those expressed in any forward-looking statements made in this Form 10-K. See the section entitled “Forward-Looking Statements” set forth above.

We may also refer to this disclosure to identify factors that may cause results to differ from those expressed in other forward-looking statements including those made in oral presentations, including telephone conferences and/or webcasts open to the public.

Our results depend upon the continued vitality of the markets we serve.

Economic downturns, and in particular downturns in our larger markets including the energy, foodservice, hospitality, travel, health care, food processing, pulp and paper, mining and steel industries, can adversely impact our end-users. The well completion and stimulation, oil and gas production and refinery and petrochemical plant markets served by our Global Energy segment may be impacted by substantial fluctuations in oil and gas prices; in 2015 and 2016, the Global Energy segment experienced decreased sales as a result of very challenging global energy market conditions. In recent years, the weaker global economic environment, particularly in Europe and emerging markets such as China and Brazil, has also negatively impacted many of our end-markets. Weaker economic activity may continue to adversely affect these markets. During such cycles, these end-users may reduce or discontinue their volume of purchases of cleaning and sanitizing products and water treatment and process chemicals, which has had, and may continue to have, an adverse effect on our business.

Our results are impacted by general worldwide economic factors.

Economic factors such as the worldwide economy, capital flows, interest rates and currency movements, including, in particular, our exposure to foreign currency risk, have affected our business in the past and may have a material adverse impact on our business in the future. In 2011 and 2012, the European Union’s sovereign debt crisis negatively impacted economic activity in that region as well as the strength of the euro versus the U.S. dollar. Additionally, the June 2016 Brexit vote resulted in a sharp decline in the value of the British pound, as compared to the U.S. dollar and other currencies, and the possibility for referendum by other EU member states may lead to further market volatility. Other regions of the world, including emerging market areas, also expose us to foreign currency risk. As a result of increasing currency controls, importation restrictions, workforce regulations, pricing constraints and local capitalization requirements, we deconsolidated our Venezuelan subsidiaries effective as of the end of the fourth quarter of 2015. Prior to deconsolidation, across the second through fourth quarters of 2015, we devalued our Venezuelan bolivar operations within our Water, Paper, Food & Beverage, Institutional and Energy operating segments. Similar currency devaluations, credit market disruptions or other economic turmoil in other countries could have a material adverse impact on our consolidated results of operations, financial position and cash flows by negatively impacting economic activity, including in our key end-markets, and by further weakening the local currency versus the U.S. dollar, resulting in reduced sales and earnings from our foreign operations, which are generated in the local currency, and then translated to U.S. dollars.

If we are unsuccessful in executing on key business initiatives, including our Enterprise Resource Planning (“ERP”) system upgrade, our business could be adversely affected .

We continue to execute key business initiatives, including investments to develop business systems and restructurings such as those discussed under Note 3 entitled “Special (Gains) and Charges” of this Form 10-K, as part of our ongoing efforts to improve our efficiency and returns. In particular, we are implementing an ERP system upgrade, which is expected to occur in phases over the next several years. This upgrade, which includes supply chain and certain finance functions, is expected to improve the efficiency of certain financial and related transactional processes. The upgrade involves complex business process design and a failure of certain of these processes could result in business disruption. If the projects in which we are investing or the initiatives which we are pursuing are not successfully executed, our consolidated results of operations, financial position or cash flows could be adversely affected.

We may be subject to information technology system failures, network disruptions and breaches in data security.

We rely to a large extent upon information technology systems and infrastructure to operate our business. The size and complexity of our information technology systems make them potentially vulnerable to failure, malicious intrusion and random attack. The Nalco and Champion transactions, as well as more recent acquisitions, have resulted in further de-centralization of systems and additional complexity in our systems infrastructure. Likewise, data security breaches by employees and others with permitted access to our systems may pose a risk that sensitive data may be exposed to unauthorized persons or to the public. While we have invested in protection of data and information technology, there can be no assurance that our efforts will prevent failures, cybersecurity attacks or breaches in our systems that could cause reputational damage, business disruption and legal and regulatory costs; could result in third-party claims; could result in compromise or misappropriation of our intellectual property, trade secrets and sensitive information; or could otherwise adversely affect our business. There may be other related challenges and risks as we continue to implement our ERP system upgrade.

We depend on key personnel to lead our business.

Our continued success will largely depend on our ability to attract and retain a high caliber of talent and on the efforts and abilities of our executive officers and certain other key employees, particularly those with sales and sales management responsibilities. This is especially crucial as we continue the integration of new businesses, which may be led by personnel that we believe are critical to the success of the integration and the prospects of the business. Our operations could be adversely affected if for any reason we were unable to attract or retain such officers or key employees.

Our significant non-U.S. operations expose us to global economic, political and legal risks that could impact our profitability.

We have significant operations outside the United States, including joint ventures and other alliances. We conduct business in approximately 170 countries and, in 2017, approximately 47% of our net sales originated outside the United States. There are inherent risks in our international operations, including:

- exchange controls and currency restrictions;
- currency fluctuations and devaluations;
- tariffs and trade barriers;
- export duties and quotas;
- changes in the availability and pricing of raw materials, energy and utilities;
- changes in local economic conditions;
- changes in laws and regulations, including the imposition of economic or trade sanctions affecting international commercial transactions;
- impact from Brexit and the possibility of similar events in other EU member states;
- difficulties in managing international operations and the burden of complying with foreign laws;
- requirements to include local ownership or management in our business;
- economic and business objectives that differ from those of our joint venture partners;
- exposure to possible expropriation, nationalization or other government actions;
- restrictions on our ability to repatriate dividends from our subsidiaries;
- unsettled political conditions, military action, civil unrest, acts of terrorism, force majeure, war or other armed conflict; and
- countries whose governments have been hostile to U.S.-based businesses.

Also, because of uncertainties regarding the interpretation and application of laws and regulations and the enforceability of intellectual property and contract rights, we face risks in some countries that our intellectual property rights and contract rights would not be enforced by local governments. We are also periodically faced with the risk of economic uncertainty, which has impacted our business in some countries. Other risks in international business also include difficulties in staffing and managing local operations, including managing credit risk to local customers and distributors.

Further, our operations outside the United States require us to comply with a number of United States and international regulations, including anti-corruption laws such as the United States Foreign Corrupt Practices Act and the United Kingdom Bribery Act, as well as U.S. and international economic sanctions regulations. We have internal policies and procedures relating to such regulations; however, there is risk that such policies and procedures will not always protect us from the misconduct or reckless acts of employees or representatives, particularly in the case of recently acquired operations that may not have significant training in applicable compliance policies and procedures. Violations of such laws and regulations could result in disruptive investigations of the Company, significant fines and sanctions, which could adversely affect our consolidated results of operations, financial position or cash flows.

Our overall success as a global business depends, in part, upon our ability to succeed in differing economic, social, legal and political conditions. We may not continue to succeed in developing and implementing policies and strategies that are effective in each location where we do business, which could adversely affect our consolidated results of operations, financial position or cash flows.

Our growth depends upon our ability to successfully compete with respect to value, innovation and customer support .

Our competitive market is made up of numerous global, national, regional and local competitors. Our ability to compete depends in part upon our ability to maintain a superior technological capability and to continue to identify, develop and commercialize innovative, high value-added products for niche applications and commercial digital applications. There can be no assurance that we will be able to accomplish this or that technological developments by our competitors will not place certain of our products at a competitive disadvantage in the future. In addition, certain of the new products that we have under development will be offered in markets in which we do not currently compete, and there can be no assurance that we will be able to compete successfully in those new markets. If we fail to introduce new technologies or commercialize our digital offerings on a timely basis, we may lose market share and our consolidated results of operations, financial position or cash flows could be adversely affected.

Our business depends on our ability to comply with laws and governmental regulations, and we may be adversely affected by changes in laws and regulations .

Our business is subject to numerous laws and regulations relating to the environment, including evolving climate change standards, and to the manufacture, storage, distribution, sale and use of our products as well as to the conduct of our business generally, including employment and labor laws. Compliance with these laws and regulations exposes us to potential financial liability and increases our operating costs. Regulation of our products and operations continues to increase with more stringent standards, causing increased costs of operations and potential for liability if a violation occurs. The potential cost to us relating to environmental and product registration laws and regulations is uncertain due to factors such as the unknown magnitude and type of possible contamination and clean-up costs, the complexity and evolving nature of laws and regulations, and the timing and expense of compliance. Changes to current laws (including tax laws), regulations and policies could impose new restrictions, costs or prohibitions on our current practices which would adversely affect our consolidated results of operations, financial position or cash flows. Changes to labor and employment laws and regulations, as well as related rulings by courts and administrative bodies, could adversely affect our operations and expose us to potential financial liability.

Our results could be adversely affected by difficulties in securing the supply of certain raw materials or by fluctuations in the cost of raw materials .

The prices of raw materials used in our business can fluctuate from time to time, and in recent years we have experienced periods of increased raw material costs. Changes in raw material prices, unavailability of adequate and reasonably priced raw materials or substitutes for those raw materials, or the inability to obtain or renew supply agreements on favorable terms can adversely affect our consolidated results of operations, financial position or cash flows . In addition, volatility and disruption in economic activity and conditions could disrupt or delay the performance of our suppliers and thus impact our ability to obtain raw materials at favorable prices or on favorable terms, which may adversely affect our business.

Consolidation of our customers and vendors could affect our results.

Customers and vendors in the foodservice, hospitality, travel, healthcare, energy, food processing and pulp and paper industries, as well as other industries we serve, have consolidated in recent years and that trend may continue. This consolidation could have an adverse impact on our ability to retain customers and on our margins and consolidated results of operations.

Our subsidiaries are defendants in pending lawsuits alleging negligence and injury resulting from the use of our COREXIT dispersant in response to the Deepwater Horizon oil spill, which could expose us to monetary damages or settlement costs.

Our subsidiaries were named as defendants in pending lawsuits alleging negligence and injury resulting from the use of our COREXIT dispersant in response to the Deepwater Horizon oil spill, which could expose us to monetary damages or settlement costs. On April 22, 2010, the deepwater drilling platform, the Deepwater Horizon, operated by a subsidiary of BP plc, sank in the Gulf of Mexico after a catastrophic explosion and fire that began on April 20, 2010. A massive oil spill resulted. Approximately one week following the incident, subsidiaries of BP plc, under the authorization of the responding federal agencies, formally requested our indirect subsidiary, Nalco Company, to supply large quantities of COREXIT 9500, a Nalco oil dispersant product listed on the U.S. EPA National Contingency Plan Product Schedule. Nalco Company responded immediately by providing available COREXIT and increasing production to supply the product to BP's subsidiaries for use, as authorized and directed by agencies of the federal government.

Nalco Company and certain affiliates (collectively "Nalco") were named as a defendant in a series of class action and individual plaintiff lawsuits arising from this event. The plaintiffs in these matters claimed damages under products liability, tort and other theories. Nalco was also named as a third party defendant in certain matters. Nalco was indemnified in these matters by another of the defendants.

These cases were administratively transferred to a judge in the United States District Court for the Eastern District of Louisiana with other related cases under In Re: Oil Spill by the Oil Rig "Deepwater Horizon" in the Gulf of Mexico, on April 20, 2010, Case No. 10-md-02179 (E.D. La.) (the "MDL").

Nalco Company, the incident defendants and the other responder defendants have been named as third party defendants by Transocean Deepwater Drilling, Inc. and its affiliates (the "Transocean Entities") (In re the Complaint and Petition of Triton Asset Leasing GmbH, et al, MDL No. 2179, Civil Action 10-2771). In April and May 2011, the Transocean Entities, Cameron International Corporation, Halliburton Energy Services, Inc., M-I L.L.C., Weatherford U.S., L.P. and Weatherford International, Inc. (collectively, the "Cross Claimants") filed cross claims in MDL 2179 against Nalco Company and other unaffiliated cross defendants. The Cross Claimants generally allege, among other things, that if they are found liable for damages resulting from the Deepwater Horizon explosion, oil spill and/or spill response, they are entitled to indemnity or contribution from the cross defendants.

On November 28, 2012, the Federal Court in the MDL entered an order dismissing all claims against Nalco. Because claims remained pending against other defendants, the Court's decision was not a "final judgment" for purposes of appeal. Plaintiffs will have 30 days after entry of final judgment to appeal the Court's decision. We cannot predict whether there will be an appeal of the dismissal, the involvement we might have in these matters in the future or the potential for future litigation. However, if an appeal by plaintiffs in these lawsuits is brought and won, these suits could have a material adverse effect on our consolidated results of operations, financial position or cash flows.

In December 2012 and January 2013, the MDL court issued final orders approving two settlements between BP and Plaintiffs' Class Counsel: (1) a proposed Medical Benefits Class Action Settlement; and (2) a proposed Economic and Property Damages Class Action Settlement. Pursuant to the proposed settlements, class members agree to release claims against BP and other released parties, including Nalco Company and its related entities.

Nalco was named in nine additional complaints in May 2016, and two additional complaints in April 2017, filed by individuals alleging, among other things, business and economic loss resulting from the Deepwater Horizon oil spill. The plaintiffs in these lawsuits are generally seeking awards of unspecified compensatory and punitive damages, and attorneys' fees and costs. These actions have been consolidated in the MDL. Certain of these complaints were dismissed on July 19, 2017.

On February 22, 2017, the Federal Court in the MDL ordered that plaintiffs who had previously filed a claim and who had "opted out" of and not released their claims under the Medical Benefits Class Action Settlement either: (1) complete a sworn statement indicating, among other things, that they opted out of the Medical Benefits Class Action Settlement (to be completed by plaintiffs who previously filed an individual complaint); or (2) file an individual lawsuit attaching the sworn statement as an exhibit, by a deadline date set by the Court. On July 18, 2017, the Court dismissed certain claims not complying with such order.

There currently remain nine cases pending against Nalco. We expect they will be dismissed pursuant to the Court's November 28, 2012 order granting Nalco's motion for summary judgment.

Nalco continues to sell the COREXIT oil dispersant product and could be exposed to future lawsuits from the use of such product. We cannot predict the potential for future litigation with respect to such sales. However, if one or more of such lawsuits are brought and won, these suits could have a material adverse impact on our financial results.

We enter into multi-year contracts with customers that could impact our results.

Our multi-year contracts with some of our customers include terms affecting our pricing flexibility. There can be no assurance that these restraints will not have an adverse impact on our margins and consolidated results of operations.

If we are unsuccessful in integrating acquisitions, our business could be adversely affected .

As part of our long-term strategy, we seek to acquire complementary businesses. There can be no assurance that we will find attractive acquisition candidates or succeed at effectively managing the integration of acquired businesses into existing businesses. If the underlying business performance of such acquired businesses deteriorates, the expected synergies from such transactions do not materialize or we fail to successfully integrate new businesses into our existing businesses, our consolidated results of operations, financial position or cash flows could be adversely affected.

Changes in tax laws and unanticipated tax liabilities could adversely affect the taxes we pay and our profitability.

We are subject to income and other taxes in the United States and foreign jurisdictions, and our operations, plans and results are affected by tax and other initiatives around the world. In particular, we are affected by the impact of changes to tax laws or related authoritative interpretations in the United States, including tax reform under the Tax Cuts and Jobs Act (the "Tax Act") signed by the President of the United States on December 22, 2017, which includes broad and complex changes to the United States tax code and the state tax response to the Tax Act, including, but not limited to variability in our future tax rate. We are also subject to changes in tax law outside the United States, such as interpretation as to the legality of tax advantages granted under the European Union state aid rules. In addition, we are impacted by settlements of pending or any future adjustments proposed by the IRS or other taxing authorities in connection with our tax audits, all of which will depend on their timing, nature and scope. Increases in income tax rates, changes in income tax laws or unfavorable resolution of tax matters could have a material adverse impact on our financial results.

Future events may impact our deferred tax position, including the utilization of foreign tax credits and undistributed earnings of international affiliates that are considered to be reinvested indefinitely.

We evaluate the recoverability of deferred tax assets and the need for deferred tax liabilities based on available evidence. This process involves significant management judgment about assumptions that are subject to change from period to period based on changes in tax laws or variances between future projected operating performance and actual results. We are required to establish a valuation allowance for deferred tax assets if we determine, based on available evidence at the time the determination is made, that it is more likely than not that some portion or all of the deferred tax assets will not be realized. In making this determination, we evaluate all positive and negative evidence as of the end of each reporting period. Future adjustments (either increases or decreases), to the deferred tax asset valuation allowance are determined based upon changes in the expected realization of the net deferred tax assets. The realization of the deferred tax assets ultimately depends on the existence of sufficient taxable income in either the carry-back or carry-forward periods under the tax law. Due to significant estimates used to establish the valuation allowance and the potential for changes in facts and circumstances, it is reasonably possible that we will be required to record adjustments to the valuation allowance in future reporting periods. Changes to the valuation allowance or the amount of deferred tax liabilities could adversely affect our consolidated results of operations or financial position. Further, should we change our assertion regarding the permanent reinvestment of the undistributed earnings of international affiliates, a deferred tax liability may need to be established.

Our indebtedness may limit our operations and our use of our cash flow, and any failure to comply with the covenants that apply to our indebtedness could adversely affect our liquidity and financial statements.

As of December 31, 2017, we had approximately $7.3 billion in outstanding indebtedness, with approximately $1.0 billion in the form of floating rate debt. Our debt level and related debt service obligations may have negative consequences, including:

- requiring us to dedicate significant cash flow from operations to the payment of principal and interest on our debt, which reduces the funds we have available for other purposes such as acquisitions and capital investment;
- reducing our flexibility in planning for or reacting to changes in our business and market conditions;
- exposing us to interest rate risk since a portion of our debt obligations are at variable rates. For example, a one percentage point increase in the average interest rate on our floating rate debt at December 31, 2017 would increase future interest expense by approximately $10 million per year; and
- increasing our cost of funds and adversely affecting our liquidity and access to the capital markets should we fail to maintain the credit ratings assigned to us by independent rating agencies.

If we add new debt, the risks described above could increase.

Severe public health outbreaks may adversely impact our business.

Our business could be adversely affected by the effect of a public health epidemic. The United States and other countries have experienced, and may experience in the future, public health outbreaks such as Zika virus, Avian Flu, SARS and H1N1 influenza. A prolonged occurrence of a contagious disease such as these could result in a significant downturn in the foodservice, hospitality and travel industries and also may result in health or other government authorities imposing restrictions on travel further impacting our end markets. Any of these events could result in a significant drop in demand for some of our products and services and adversely affect our business.

We incur significant expenses related to the amortization of intangible assets and may be required to report losses resulting from the impairment of goodwill or other assets recorded in connection with the Nalco and Champion transactions and other acquisitions.

We expect to continue to complete selected acquisitions and joint venture transactions in the future. In connection with acquisition and joint venture transactions, applicable accounting rules generally require the tangible and intangible assets of the acquired business to be recorded on the balance sheet of the acquiring company at their fair values. Intangible assets other than goodwill are required to be amortized over their estimated useful lives and this expense may be significant. Any excess in the purchase price paid by the acquiring company over the fair value of tangible and intangible assets of the acquired business is recorded as goodwill. If it is later determined that the anticipated future cash flows from the acquired business may be less than the carrying values of the assets and goodwill of the acquired business, the assets or goodwill may be deemed to be impaired. In this case, the acquiring company may be required under applicable accounting rules to write down the value of the assets or goodwill on its balance sheet to reflect the extent of the impairment. This write-down of assets or goodwill is generally recognized as a non-cash expense in the statement of operations of the acquiring company for the accounting period during which the write down occurs. As of December 31, 2017, we had goodwill of $7.2 billion which is maintained in various reporting units, including goodwill from the Nalco and Champion transactions. If we determine that any of the assets or goodwill recorded in connection with the Nalco and Champion transactions or any other prior or future acquisitions or joint venture transactions have become impaired, we will be required to record a loss resulting from the impairment. Impairment losses could be significant and could adversely affect our consolidated results of operations and financial position.

A chemical spill or release could adversely impact our business .

As a manufacturer and supplier of chemical products, there is a potential for chemicals to be accidentally spilled, released or discharged, either in liquid or gaseous form, during production, transportation, storage or use. Such a release could result in environmental contamination as well as a human or animal health hazard. Accordingly, such a release could have a material adverse effect on our consolidated results of operations, financial position or cash flows.

Extraordinary events may significantly impact our business.

The occurrence of (a) litigation or claims, (b) the loss or insolvency of a major customer or distributor, (c) war (including acts of terrorism or hostilities which impact our markets), (d) natural or manmade disasters, (e) water shortages or (f) severe weather conditions affecting the energy, foodservice, hospitality and travel industries may have a material adverse effect on our business.

Defense of litigation, particularly certain types of actions such as antitrust, patent infringement, wage hour and class action lawsuits, can be costly and time consuming even if ultimately successful, and if not successful could have a material adverse effect on our consolidated results of operations, financial position or cash flows.

While we have a diverse customer base and no customer or distributor constitutes 10 percent or more of our consolidated revenues, we do have customers and independent, third-party distributors, the loss of which could have a material adverse effect on our consolidated results of operations or cash flows for the affected earnings periods.

War (including acts of terrorism or hostilities), natural or manmade disasters, water shortages or severe weather conditions affecting the energy, foodservice, hospitality, travel, health care, food processing, pulp and paper, mining, steel and other industries can cause a downturn in the business of our customers, which in turn can have a material adverse effect on our consolidated results of operations, financial position or cash flows.

Item 1B. Unresolved Staff Comments .

We have no unresolved comments from the staff of the Securities and Exchange Commission.

Item 2. Propertie s .

Our manufacturing philosophy is to manufacture products wherever an economic, process or quality assurance advantage exists or where proprietary manufacturing techniques dictate in-house production. Currently, most products that we sell are manufactured at our facilities. We position our manufacturing locations and warehouses in a manner to permit ready access to our customers.

Our manufacturing facilities produce chemical products as well as medical devices and equipment for all of our operating segments, although Pest Elimination purchases the majority of their products and equipment from outside suppliers. Our chemical production process consists of producing intermediates via basic reaction chemistry and subsequently blending and packaging those intermediates with other purchased raw materials into finished products in powder, solid and liquid form. Our devices and equipment manufacturing operations consist of producing chemical product dispensers and injectors and other mechanical equipment, medical devices, dishwasher racks, related sundries, dish machine refurbishment and water monitoring and maintenance equipment system from purchased components and subassemblies.

The following table profiles our more significant physical properties with approximately 70,000 square feet or more with ongoing production activities, as well as certain other facilities important in terms of specialization and sources of supply. In general, manufacturing facilities located in the United States serve our U.S. markets and facilities located outside of the United States serve our International markets. However, most of the United States facilities do manufacture products for export.

PLANT PROFILES

Location	Approximate Size (Sq. Ft.)	Segment	Majority Owned or Leased
Joliet, IL USA	610,000	Global Institutional, Global Industrial	Owned
Tai Cang, CHINA	468,000	Global Institutional, Global Industrial	Owned
Sainghin, FRANCE	360,000	Global Institutional, Global Industrial	Owned
Sugar Land, TX USA	350,000	Global Energy, Global Industrial	Owned
South Beloit, IL USA	313,000	Global Institutional, Global Industrial, Other	Owned
Jianghai, CHINA	296,000	Global Energy, Global Industrial	Owned
Chalons, FRANCE	280,000	Global Institutional, Global Industrial	Owned
Soledad, COLUMBIA	276,000	Global Energy	Owned
Clearing, IL USA	270,000	Global Energy, Global Industrial	Owned
Jurong Island, SINGAPORE	250,000	Global Energy, Global Industrial	Owned
Nanjing, CHINA	240,000	Global Energy, Global Industrial	Owned
Garland, TX USA	239,000	Global Institutional, Global Industrial	Owned
Martinsburg, WV USA	228,000	Global Institutional, Global Industrial	Owned
Elwood City, PA USA	222,000	Global Energy, Global Industrial	Owned
Weavergate, UNITED KINGDOM	222,000	Global Industrial, Global Institutional	Owned
Celra, SPAIN	218,000	Global Institutional, Global Industrial	Owned
Greensboro, NC USA	193,000	Global Institutional	Owned
Fresno, TX USA	192,000	Global Energy	Owned
Freeport, TX USA	189,000	Global Energy	Owned
Las Americas, DOMINICAN REPUBLIC	182,000	Global Institutional	Owned
Jacksonville, FL USA	181,000	Global Institutional	Leased
Garyville, LA USA	178,000	Global Energy, Global Industrial	Owned
Nieuwegein, NETHERLANDS	168,000	Global Institutional, Global Industrial	Owned
La Romana, DOMINICAN REPUBLIC	160,000	Global Institutional	Leased
Tessenderlo, BELGIUM	153,000	Global Institutional	Owned
Cheltenham, AUSTRALIA	145,000	Global Institutional, Global Industrial	Owned

Location	Approximate Size (Sq. Ft.)	Segment	Majority Owned or Leased
Suzano, BRAZIL	142,000	Global Energy, Global Industrial	Owned
McDonough, GA USA	141,000	Global Institutional, Global Industrial	Owned
Darra, AUSTRALIA	138,000	Global Institutional, Global Industrial	Owned
Corsicana, TX USA	137,000	Global Energy	Owned
Burlington, ON CANADA	136,000	Global Energy, Global Industrial	Owned
Eagan, MN USA	133,000	Global Institutional, Global Industrial, Other	Owned
Huntington, IN USA	127,000	Global Institutional, Global Industrial	Owned
Rozzano, ITALY	126,000	Global Institutional, Global Industrial	Owned
City of Industry, CA USA	125,000	Global Institutional, Global Industrial	Owned
Mississauga, ON CANADA	120,000	Global Institutional, Global Industrial	Leased
Aberdeen, UNITED KINGDOM	118,000	Global Energy	Owned
Elk Grove Village, IL USA	115,000	Global Institutional	Leased
Biebesheim, GERMANY	109,000	Global Energy, Global Industrial	Owned
Fort Worth, TX USA	101,000	Global Institutional	Leased
Johannesburg, SOUTH AFRICA	100,000	Global Institutional, Global Industrial	Owned
Hamilton, NEW ZEALAND	96,000	Global Institutional, Global Industrial	Owned
Calgary, AB CANADA	94,000	Global Energy	Owned
Kwinana, AUSTRALIA	87,000	Global Institutional, Global Industrial	Owned
Yangsan, KOREA	85,000	Global Energy, Global Industrial	Owned
Cisterna, ITALY	80,000	Global Industrial	Owned
Cuautitlan, MEXICO	76,000	Global Institutional, Global Industrial	Owned
Barueri, BRAZIL	75,000	Global Institutional, Global Industrial	Leased
Mullingar, IRELAND	74,000	Global Institutional, Global Industrial	Leased
Mosta, MALTA	73,000	Global Institutional	Leased
Noviciado, CHILE	70,000	Global Industrial, Global Institutional	Owned
Navanakorn, THAILAND	67,000	Global Institutional, Global Industrial	Leased
Aubagne, FRANCE	65,000	Global Institutional	Leased
Rovigo, ITALY	60,000	Global Institutional	Owned
Siegsdorf, GERMANY	56,000	Global Institutional, Global Industrial	Owned
Verona, ITALY	55,000	Global Institutional	Owned
Guangzhou, CHINA	55,000	Global Institutional, Global Industrial	Owned
Lerma, MEXICO	49,000	Global Industrial	Owned
Maribor, SLOVENIA	46,400	Global Institutional, Global Industrial	Owned
Leeds, UNITED KINGDOM	25,000	Global Institutional	Owned
Baglan, UNITED KINGDOM	24,400	Global Institutional	Leased
Noda, JAPAN	22,000	Global Institutional, Global Industrial	Owned
Steritimak, RUSSIA	20,000	Global Energy, Global Industrial	Owned

Generally, our manufacturing facilities are adequate to meet our existing in-house production needs. We continue to invest in our plant sites to maintain viable operations and to add capacity as necessary to meet business imperatives.

Most of our manufacturing plants also serve as distribution centers. In addition, we operate distribution centers around the world, most of which are leased, and utilize third party logistics service providers to facilitate the distribution of our products and services.

At year-end 2017, our corporate headquarters was comprised of four multi-storied buildings located in downtown St. Paul, Minnesota. We own two of the buildings – a six story building and the 17-story building purchased from The Travelers Indemnity Company on August 4, 2015. This building, with 485,000 square feet of office space, became the principal office of the Company in 2017, replacing the 280,000-square foot, 19-story building previously serving as the principal office. The process of vacating the former principal office will be completed during 2018. The fourth building, which is leased through 2019, has been substantially vacated by the Company. A 90-acre campus in Eagan, Minnesota is owned and provides for future growth. The Eagan facility houses a significant research and development center, a data center and training facilities as well as several of our administrative functions.

We also have a significant business presence in Naperville, Illinois, where our Water and Paper operating segments maintain their principal administrative offices and research center. As discussed in Part II, Item 8, Note 6, "Debt and Interest" of this Form 10-K, we previously acquired the beneficial interest in the trust owning the Naperville facility in 2015 and repaid the remaining debt on the facility during 2017. The lease on the facility has since been terminated and the trust has conveyed its ownership interest in the facility to the Company. Our Energy operating segment maintains Company-owned administrative and research facilities in Sugar Land, Texas and additional research facilities in Fresno, Texas.

Significant regional administrative and/or research facilities are located in Campinas, Brazil, Leiden, Netherlands, and Pune, India, which we own, and in and Dubai, UAE, Lille, France, Miramar, Florida, Monheim, Germany, Singapore, Shanghai, China and Zurich, Switzerland, which we lease. We also have a network of small leased sales offices in the United States and, to a lesser extent, in other parts of the world.

Item 3. Lega l Proceedings.

Discussion of legal proceedings is incorporated by reference from Part II, Item 8, Note 15, “Commitments and Contingencies,” of this Form 10-K and should be considered an integral part of Part I, Item 3, “Legal Proceedings.”

Discussion of other environmental-related legal proceedings is incorporated by reference from Part I, Item 1 above, under the heading “Environmental and Regulatory Considerations”.

Item 4. Mine Safety Disclosures.

Not applicable.

PART II

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

Market Information

Our common stock is listed on the New York Stock Exchange under the symbol "ECL." Our common stock is also traded on an unlisted basis on certain other United States exchanges. The high and low sales prices of our common stock on the consolidated transaction reporting system during 2017 and 2016 were as follows:

	2017		2016	
Quarter	High	Low	High	Low
First	**$ 126.17**	**$ 117.29**	$ 113.69	$ 98.62
Second	**134.89**	**124.42**	121.81	109.83
Third	**134.28**	**127.18**	124.60	116.66
Fourth	**137.96**	**128.38**	122.28	110.65

Holders

On January 31, 2018, we had 6,324 holders of record of our Common Stock.

Dividends

We have paid common stock dividends for 81 consecutive years. Cash dividends of $0.35 per share were declared in February, May and August 2016. Cash dividends of $0.37 per share were declared in December 2016, February, May and August 2017. A dividend of $0.41 per share was declared in December 2017.

Issuer Purchases of Equity Securities

Period	Total number of shares purchased (1)	Average price paid per share (2)	Total number of shares purchased as part of publicly announced plans or programs (3)	Maximum number of shares that may yet be purchased under the plans or programs (3)
October 1-31, 2017	4,284	$131.3391	-	12,358,110
November 1-30, 2017	1,267	131.6250	-	12,358,110
December 1-31, 2017	87,432	136.2796	-	12,358,110
Total	92,983	135.9886	-	12,358,110

(1) Includes 92,983 shares reacquired from employees and/or directors to satisfy the exercise price of stock options or shares surrendered to satisfy statutory tax obligations under our stock incentive plans.

(2) The average price paid per share includes brokerage commissions associated with publicly announced plan purchases plus the value of such other reacquired shares.

(3) As announced on February 24, 2015, our Board of Directors authorized the repurchase of up to 20,000,000 shares. Subject to market conditions, we expect to repurchase all shares under these authorizations, for which no expiration date has been established, in open market or privately negotiated transactions, including pursuant to Rule 10b5-1 and accelerated share repurchase program.

Item 6. Selected Financial Data .

December 31, millions, except per share amounts and employees	2017	2016	2015	2014	2013
OPERATIONS					
Net sales	$13,838.3	$13,152.8	$13,545.1	$14,280.5	$13,253.4
Cost of sales (including special (gains) and charges (1))	7,405.1	6,898.9	7,223.5	7,679.1	7,161.2
Selling, general and administrative expenses	4,417.1	4,299.4	4,345.5	4,577.6	4,360.3
Special (gains) and charges	(3.7)	39.5	414.8	68.8	171.3
Operating income	2,019.8	1,915.0	1,561.3	1,955.0	1,560.6
Interest expense, net (including special (gains) and charges (1))	255.0	264.6	243.6	256.6	262.3
Income before income taxes	1,764.8	1,650.4	1,317.7	1,698.4	1,298.3
Provision for income taxes	242.4	403.3	300.5	476.2	324.7
Net income including noncontrolling interest	1,522.4	1,247.1	1,017.2	1,222.2	973.6
Net income (loss) attributable to noncontrolling interest (including special (gains) and charges (1))	14.0	17.5	15.1	19.4	5.8
Net income attributable to Ecolab	$1,508.4	$1,229.6	$1,002.1	$1,202.8	$967.8
Diluted earnings per share, as reported (GAAP)	$ 5.13	$ 4.14	$ 3.32	$ 3.93	$ 3.16
Diluted earnings per share, as adjusted (Non-GAAP) (2)	$ 4.69	$ 4.37	$ 4.37	$ 4.18	$ 3.54
Weighted-average common shares outstanding - basic	289.6	292.5	296.4	300.1	299.9
Weighted-average common shares outstanding - diluted	294.0	296.7	301.4	305.9	305.9
SELECTED INCOME STATEMENT RATIOS					
Gross margin	46.5 %	47.5 %	46.7 %	46.2 %	46.0 %
Selling, general and administrative expenses	31.9	32.7	32.1	32.1	32.9
Operating income	14.6	14.6	11.5	13.7	11.8
Income before income taxes	12.8	12.5	9.7	11.9	9.8
Net income attributable to Ecolab	10.9	9.3	7.4	8.4	7.3
Effective income tax rate	13.7 %	24.4 %	22.8 %	28.0 %	25.0 %
FINANCIAL POSITION					
Current assets	$4,596.4	$4,279.4	$4,447.5	$4,853.0	$4,698.4
Property, plant and equipment, net	3,707.1	3,365.0	3,228.3	3,050.6	2,882.0
Goodwill, intangible and other assets	11,658.9	10,685.8	10,965.9	11,523.8	12,027.4
Total assets	$19,962.4	$18,330.2	$18,641.7	$19,427.4	$19,607.8
Current liabilities	$3,431.8	$3,019.4	$4,764.4	$4,367.9	$3,487.5
Long-term debt	6,758.3	6,145.7	4,260.2	4,843.4	6,016.0
Postretirement health care and pension benefits	1,025.5	1,019.2	1,117.1	1,188.5	795.6
Other liabilities	1,058.1	1,175.0	1,519.6	1,645.5	1,899.3
Total liabilities	12,273.7	11,359.3	11,661.3	12,045.3	12,198.4
Ecolab shareholders' equity	7,618.5	6,901.1	6,909.9	7,315.9	7,344.3
Noncontrolling interest	70.2	69.8	70.5	66.2	65.1
Total equity	7,688.7	6,970.9	6,980.4	7,382.1	7,409.4
Total liabilities and equity	$19,962.4	$18,330.2	$18,641.7	$19,427.4	$19,607.8
SELECTED CASH FLOW INFORMATION					
Cash provided by operating activities	$2,091.3	$1,939.7	$1,999.8	$1,815.6	$1,559.8
Cash used for investing activities	(1,673.2)	(829.5)	(915.8)	(848.3)	(2,087.7)
Cash used for financing activities	(522.7)	(868.2)	(1,150.9)	(1,071.0)	(292.6)
Depreciation and amortization	893.3	850.7	859.5	872.0	816.2
Capital expenditures	789.6	707.4	771.0	748.7	625.1
Cash dividends declared per common share	1.520	1.420	1.340	1.155	0.965
SELECTED FINANCIAL MEASURES/OTHER					
Total debt	$7,322.7	$6,687.0	$6,465.5	$6,548.2	$6,875.8
Total debt to capitalization	48.8 %	49.0 %	48.1 %	47.0 %	48.1 %
Book value per common share	$ 26.33	$ 23.65	$ 23.35	$ 24.40	$ 24.39
Return on beginning equity	21.8 %	17.9 %	13.8 %	16.5 %	15.8 %
Dividends per share/diluted earnings per common share	29.6 %	34.3 %	40.4 %	29.4 %	30.5 %
Net interest coverage	7.9	7.2	6.4	7.6	5.9
Year end market capitalization	$38,821.3	$34,207.7	$33,852.7	$31,340.6	$31,399.4
Annual common stock price range	$137.96 to $117.29	$ 124.60 to $98.62	$ 122.48 to $97.78	$ 118.46 to $97.65	$ 108.34 to $71.99
Number of employees	48,400	47,565	47,145	47,430	45,415

(1) Cost of sales includes special charges of $44.0 in 2017, $66.0 in 2016, $80.6 in 2015, $14.3 in 2014, and $43.2 in 2013; Interest expense, net includes special charges of $21.9 in 2017 and $2.5 in 2013; Net income (loss) attributable to non-controlling interest includes special charges of $12.8 in 2015 and $0.5 in 2013.
(2) Amounts exclude the impact of special (gains) and charges and discrete tax items.

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations .

The following management discussion and analysis ("MD&A") provides information that we believe is useful in understanding our operating results, cash flows and financial condition. We provide quantitative information about the material sales drivers including the impact of changes in volume and pricing and the effect of acquisitions and changes in foreign currency at the corporate and reportable segment level. We also provide quantitative information regarding special (gains) and charges, discrete tax items and other significant factors we believe are useful for understanding our results. Such quantitative drivers are supported by comments meant to be qualitative in nature. Qualitative factors are generally ordered based on estimated significance .

The discussion should be read in conjunction with the consolidated financial statements and related notes included in this Form 10-K. Our consolidated financial statements are prepared in accordance with U.S. GAAP. This discussion contains various Non-GAAP Financial Measures and also contains various forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. We refer readers to the statements and information set forth in the sections entitled "Non-GAAP Financial Measures" at the end of this MD&A, and "Forward-Looking Statements" and "Risk Factors" within Items 1 and 1A of this Form 10-K.

Comparability of Results

Fixed Currency Foreign Exchange Rates

Management evaluates the sales and operating income performance of our non-U.S. dollar functional currency international operations based on fixed currency exchange rates, which eliminate the impact of exchange rate fluctuations on our international operations. Fixed currency amounts are updated annually at the beginning of each year based on translation into U.S. dollars at foreign currency exchange rates established by management, with all periods presented using such rates. Fixed currency exchange rates are generally based on existing market rates at the time they are established. Fixed currency amounts for 2015 also reflect all Venezuelan bolivar operations, prior to the deconsolidation of our Venezuelan operations, at the Marginal Currency System ("SIMADI") rate at year end 2015 of approximately 200 bolivares to 1 U.S. dollar. Public currency rate data provided within the "Segment Performance" section of this MD&A reflect amounts translated at actual public average rates of exchange prevailing during the corresponding period, and is provided for informational purposes only.

Venezuela Related Activities

Effective as of the end of the fourth quarter of 2015, we deconsolidated our Venezuelan subsidiaries. Prior to deconsolidation, due to the country's highly inflationary economy, the functional currency of our Venezuelan subsidiaries was the U.S. dollar. As a result, currency remeasurement adjustments for non-U.S. dollar denominated monetary assets and liabilities of our Venezuelan subsidiaries and other transactional foreign currency exchange gains and losses were reflected in earnings. Across the second through fourth quarters of 2015, the Venezuelan bolivar operations within our Water, Paper, Food & Beverage, Institutional and Energy operating segments were converted from the official exchange rate at the time of 6.3 bolivares to 1 U.S. dollar to the SIMADI rate at the time of approximately 200 bolivares to 1 U.S. dollar. As noted above, within our fixed currency sales and operating results, to present our historical Venezuelan bolivar operations at a consistent conversion rate, we have reflected all Venezuelan bolivar results for the 2015 reporting year at a SIMADI conversion rate of approximately 200 bolivares to 1 U.S. dollar.

Impact of Acquisitions and Divestitures

Acquisition adjusted growth rates exclude the results of our acquired businesses from the first twelve months post acquisition, exclude the results of our divested businesses from the twelve months prior to divestiture, and exclude the Venezuelan results of operations from all comparable periods.

EXECUTIVE SUMMARY

We achieved accelerating sales and earnings growth through 2017 as we drove new product introductions, new business wins and improved operating efficiency in a mixed market environment. Increased pricing was implemented to offset higher delivered product costs. Earnings per share leveraged the solid operating income growth, benefiting from lower interest expense, taxes and shares outstanding, to deliver the solid EPS growth.

Sales

Reported sales increased 5% to $13.8 billion in 2017 from $13.2 billion in 2016. Sales were positively impacted by volume, pricing and acquisitions. When measured in fixed rates of foreign currency exchange, fixed currency sales increased 5% compared to the prior year. See the section entitled "Non-GAAP Financial Measures" within this MD&A for further information on our non-GAAP measures and the "Net Sales" table on page 32 and the "Sales by Reportable Segment" table on page 38 for reconciliation information.

Gross Margin

Our reported gross margin was 46.5% of sales for 2017, compared to our 2016 reported gross margin of 47.5%. Excluding the impact of special (gains) and charges included in cost of sales from both 2017 and 2016, our adjusted gross margin was 46.8% in 2017 and 48.0% in 2016. See the section entitled "Non-GAAP Financial Measures" within this MD&A for further information on our non-GAAP measures and the "Cost of Sales and Gross Profit Margin" table on page 32 for reconciliation information .

Operating Income

Reported operating income increased 5% to $2.0 billion in 2017, compared to $1.9 billion in 2016. Adjusted operating income, excluding the impact of special (gains) and charges, increased 2% in 2017. When measured in fixed rates of foreign currency exchange, adjusted fixed currency operating income increased 2%. See the section entitled "Non-GAAP Financial Measures" within this MD&A for further information on our non-GAAP measures and the "Operating Income" table on page 35 and "Operating Income by Reportable Segment" table on page 38 for reconciliation information .

Earnings Attributable to Ecolab Per Common Share ("EPS")

Reported diluted EPS increased 24% to $5.13 in 2017 compared to $4.14 in 2016. Special (gains) and charges had an impact on both years. Special (gains) and charges in 2017 were driven primarily by the impact of income tax reform, restructuring charges, other discrete taxes, acquisition and integration charges and the gain on sale of Equipment Care. Special (gains) and charges in 2016 were driven primarily by Energy related charges, Venezuelan related actions, restructuring charges and other gains and charges. Adjusted diluted EPS, which exclude the impact of special (gains) and charges and discrete tax items increased to $4.69 in 2017 compared to $4.37 in 2016. See the section entitled "Non-GAAP Financial Measures" within this MD&A for further information on our non-GAAP measures, and the "Diluted EPS" table on page 37 for reconciliation information .

Balance Sheet

We remain committed to our stated objective of having an investment grade balance sheet, supported by our current credit ratings of A-/Baa1 by the major ratings agencies, and to achieving "A" range ratings metrics. We believe our strong balance sheet has allowed us continued access to capital at attractive rates.

Net Debt to EBITDA

Our net debt to earnings before interest, taxes, depreciation and amortization ("EBITDA") was 2.4 and 2.3 for 2017 and 2016, respectively. Our net debt to adjusted EBITDA, defined as the sum of EBITDA and special (gains) and charges impacting EBITDA, was 2.4 for 2017 and 2.2 for 2016. We view these ratios as important indicators of the operational and financial health of our organization. Se e the section entitled "Non-GAAP Financial Measures" within this MD&A for further information on our non-GAAP measures, and the "Net Debt to EBITDA" table on page 43 for reconciliation information.

Cash Flow

Cash flow from operating activities was $2.1 billion in 2017 compared to $1.9 billion in 2016. We continued to generate strong cash flow from operations, allowing us to fund our ongoing operations, acquisitions, investments in our business, debt repayments, pension obligations and return cash to our shareholders through share repurchases and dividend payments. See the section entitled "Cash Flows" within this MD&A for further information.

Dividends

We increased our quarterly cash dividend 11% in December 2017 to an indicated annual rate of $1.64 per share. The increase represents our 26th consecutive annual dividend rate increase and the 81st consecutive year we have paid cash dividends. Our outstanding dividend history reflects our continued growth and development, strong cash flows, solid financial position and confidence in our business prospects for the years ahead.

CRITICAL ACCOUNTING ESTIMATES

Our consolidated financial statements are prepared in accordance with U.S. GAAP. We have adopted various accounting policies to prepare the consolidated financial statements in accordance with U.S. GAAP. Our significant accounting policies are disclosed in Note 2 of the Notes to the Consolidated Financial Statements (“Notes”).

Preparation of our consolidated financial statements, in conformity with U.S. GAAP, requires us to make estimates and assumptions that affect the amounts reported in the consolidated financial statements and accompanying notes. Estimates are considered to be critical if they meet both of the following criteria: (1) the estimate requires assumptions to be made about matters that are highly uncertain at the time the accounting estimate is made, and (2) different estimates that we reasonably could have used for the accounting estimate in the current period, or changes in the accounting estimate that are reasonably likely to occur from period to period, have a material impact on the presentation of our financial condition or results of operations.

Besides estimates that meet the “critical” estimate criteria, we make many other accounting estimates in preparing our financial statements and related disclosures. All estimates, whether or not deemed critical, affect reported amounts of assets, liabilities, revenues or expenses as well as disclosures of contingent assets and liabilities. Estimates are based on experience and other information available prior to the issuance of the financial statements. Materially different results can occur as circumstances change and additional information becomes known, even from estimates not deemed critical. Our critical accounting estimates include the following :

Revenue Recognition

We recognize revenue on product sales at the time evidence of an arrangement exists, title to the product and risk of loss transfers to the customer, the price is fixed and determinable and collection is reasonably assured. We recognize revenue on services as they are performed. While we employ a sales and service team to ensure our customers’ needs are best met in a high quality way, the majority of our revenue is generated from product sales. Our service businesses and service offerings are discussed in Note 17.

Our sales policies do not provide for general rights of return. We record estimated reductions to revenue for customer programs and incentive offerings including pricing arrangements, promotions and other volume-based incentives at the time the sale is recorded. We also record estimated reserves for product returns and credits at the time of sale and anticipated uncollectible accounts, as discussed below. Depending on market conditions, we may increase customer incentive offerings, which could reduce gross profit margins over the term of the incentive .

On January 1, 2018, we adopted Accounting Standards Committee 606 (ASC 606), Revenue from Contracts with Customers, which provides guidance on how revenue with customers should be recognized. For additional information on our adoption of this accounting standard, see Note 2.

Valuation Allowances and Accrued Liabilities

Allowances for Doubtful Accounts

We estimate our allowance for doubtful accounts by analyzing accounts receivable balances by age and applying historical write-off and collection trend rates. In addition, our estimates also include separately providing for customer receivables based on specific circumstances and credit conditions, and when it is deemed probable the balance is uncollectible. We estimate our sales returns and allowances by analyzing historical returns and credits, and apply these trend rates to calculate estimated reserves for future credits. Actual results could differ from these estimates.

Our allowance for doubtful accounts balance was $72 million and $68 million, as of December 31, 2017 and 2016, respectively. These amounts include our allowance for sales returns and credits of $15 million and $14 million as of December 31, 2017 and 2016, respectively. Our bad debt expense as a percent of reported net sales was 0.1% in 2017 and 0.2% in 2016 and 2015. We believe it is reasonably likely that future results will be consistent with historical trends and experience. However, if the financial condition of our customers were to deteriorate, resulting in an inability to make payments, or if unexpected events, economic downturns, or significant changes in future trends were to occur, additional allowances may be required .

For additional information on our allowance for doubtful accounts, see Note 2.

Accrued Liabilities

Our business and operations are subject to extensive environmental laws and regulations governing, among other things, air emissions, wastewater discharges, the use and handling of hazardous substances, waste disposal and the investigation and remediation of soil and groundwater contamination. As with other companies engaged in similar manufacturing activities and providing similar products and services, some risk of environmental liability is inherent in our operations.

We record liabilities related to pending litigation, environmental claims and other contingencies when a loss is probable and can be reasonably estimated. Estimates used to record such liabilities are based on our best estimate of probable future costs. We record the amounts that represent the points in the range of estimates that we believe are most probable or the minimum amount when no amount within the range is a better estimate than any other amount. Potential insurance reimbursements generally are not anticipated in our accruals for environmental liabilities or other insured losses. Expected insurance proceeds are recorded as receivables when recovery is deemed certain. While the final resolution of litigation and environmental contingencies could result in amounts different than current accruals, and therefore have an impact on our consolidated financial results in a future reporting period, we believe the ultimate outcome will not have a significant impact on our consolidated financial position.

For additional information on our commitments and contingencies, see Note 15 .

Actuarially Determined Liabilities

Pension and Postretirement Healthcare Benefit Plans

The measurement of our pension and postretirement benefit obligations are dependent on a variety of assumptions determined by management and used by our actuaries. These assumptions affect the amount and timing of future contributions and expenses.

The significant assumptions used in developing the required estimates are the discount rate, expected return on assets, projected salary and health care cost increases and mortality table.

- The discount rate assumptions for our U.S. plans are assessed using a yield curve constructed from a subset of bonds yielding greater than the median return from a population of non-callable, corporate bond issues rated Aa by Moody’s Investor Services or AA by Standard & Poors. The discount rate is calculated by matching the plans’ projected cash flows to the bond yield curve. For 2017 and 2016, we elected to measure service and interest costs by applying the specific spot rates along that yield curve to the plans’ liability cash flows. We believe this approach provides a more precise measurement of service and interest costs by aligning the timing of the plans’ liability cash flows to the corresponding spot rates on the yield curve. For 2015, we measured service and interest costs utilizing a single weighted-average discount rate derived from the yield curve used to measure the plan obligations. The change in approach did not affect the measurement of our plan obligations or the funded status of our plans. In determining our U.S. pension obligations for 2017, our weighted-average discount rate decreased to 3.70% from 4.27% at year-end 2016. In determining our U.S. postretirement health care obligation for 2017, our weighted-average discount rate decreased to 3.66% from 4.14% at year-end 2016.

- The expected rate of return on plan assets reflects asset allocations, investment strategies and views of investment advisors, and represents our expected long-term return on plan assets. Our weighted-average expected return on U.S. plan assets used for determining the 2016, 2017 and 2018 U.S. pension and U.S. postretirement health care expenses was 7.75%.

- Projected salary and health care cost increases are based on our long-term actual experience, the near term outlook and assumed inflation. Our weighted-average projected salary increase used in determining the 2016 U.S. pension expenses was 4.32%, for 2017 it was 4.03%, and for 2018 it is 4.03%.

- For postretirement benefit measurement purposes as of December 31, 2017, the annual rates of increase in the per capita cost of covered health care were assumed to be 8.25% for pre-65 costs and 11.5% for post-65 costs. The rates are assumed to decrease each year until they reach 5% in 2028 and remain at those levels thereafter.

- In determining our U.S. pension and U.S. postretirement health care obligation for 2017, we utilized the most recent mortality table, MP-2017 projection scale (applied to the RP-2006 mortality table).

The effects of actual results differing from our assumptions, as well as changes in assumptions, are reflected in the unrecognized actuarial loss and amortized over future periods and, therefore, will generally affect our recognized expense in future periods. Significant differences in actual experience or significant changes in assumptions may materially affect future pension and other postretirement obligations. The unrecognized net actuarial loss on our U.S. qualified and non-qualified pension plans decreased to $527 million as of December 31, 2017 from $533 million as of December 31, 2016 (both before tax), primarily due to the amortization of prior period net actuarial losses.

The effect of a decrease in the discount rate or decrease in the expected return on assets assumption as of December 31, 2017, on the December 31, 2017 funded status and 2018 expense is shown below, assuming no changes in benefit levels and no amortization of gains or losses for our significant U.S. plans :

	Effect on U.S. Pension Plans		
(millions)	Assumption Change	Increase in Recorded Obligation	Higher 2018 Expense
Discount rate	-0.25 pts	$77.2	$6.0
Expected return on assets	-0.25 pts	N/A	5.2

	Effect on U.S. Postretirement Health Care Benefits Plans		
(millions)	Assumption Change	Increase in Recorded Obligation	Higher 2018 Expense
Discount rate	-0.25 pts	$5.2	$0.6
Expected return on assets	-0.25 pts	N/A	-

Our international pension obligations and underlying plan assets represent approximately one third of our global pension plans, with the majority of the amounts held in the U.K. and Eurozone countries. We use assumptions similar to our U.S. plan assumptions to measure our international pension obligations, however, the assumptions used vary by country based on specific local country requirements and information.

See Note 16 for further discussion concerning our accounting policies, estimates, funded status, contributions and overall financial positions of our pension and postretirement plan obligations .

Self Insurance

Globally we have insurance policies with varying deductible levels for property and casualty losses. We are insured for losses in excess of these deductibles, subject to policy terms and conditions and have recorded both a liability and an offsetting receivable for amounts in excess of these deductibles. We are self-insured for health care claims for eligible participating employees, subject to certain deductibles and limitations. We determine our liabilities for claims on an actuarial basis.

Restructuring

Our restructuring activities are associated with plans to enhance our efficiency, effectiveness and sharpen the competitiveness of our businesses. These restructuring plans include net costs associated with significant actions involving employee-related severance charges, contract termination costs and asset write-downs and disposals. Employee termination costs are largely based on policies and severance plans, and include personnel reductions and related costs for severance, benefits and outplacement services. These charges are reflected in the quarter in which the actions are probable and the amounts are estimable, which typically is when management approves the associated actions. Contract termination costs include charges to terminate leases prior to the end of their respective terms and other contract termination costs. Asset write-downs and disposals include leasehold improvement write-downs, other asset write-downs associated with combining operations and disposal of assets.

Restructuring charges have been included as a component of cost of sales, special (gains) and charges and net income (loss) attributable to noncontrolling interest on the Consolidated Statement of Income. Amounts included as a component of cost of sales include supply chain related severance and other asset write-downs associated with combining operations. Restructuring liabilities have been classified as a component of both other current and other noncurrent liabilities on the Consolidated Balance Sheet. Our restructuring liability balance was $42 million and $40 million as of December 31, 2017 and 2016, respectively.

For additional information on our restructuring activities, see Note 3 .

Income Taxes

Judgment is required to determine the annual effective income tax rate, deferred tax assets and liabilities, any valuation allowances recorded against net deferred tax assets and uncertain tax positions.

On December 22, 2017, the President of the United States signed into law the Tax Cuts and Jobs Act (the "Tax Act"), which reduces the U.S. federal corporate tax rate from 35% to 21%, requires companies to pay a one-time transition tax on earnings of certain foreign subsidiaries that were previously indefinitely reinvested and creates new taxes on certain foreign sourced earnings. The Tax Act adds many new provisions including changes to bonus depreciation, the deduction for executive compensation and interest expense, a tax on global intangible low taxed income (GILTI), the base erosion anti abuse tax (BEAT) and a deduction for foreign derived intangible income (FDII). Some of these provisions, such as the tax on GILTI, may not apply to the Company with full effect until future years. The Company is assessing the impact of the provisions of the Act that do not apply until later years.

The two material items that impact us for 2017 are the reduction in the U.S. federal tax rate, as it relates to deferred tax assets and liabilities recorded on the balance sheet, and the one-time transition tax that is imposed on our unremitted foreign earnings. We have recorded provisional amounts for the income tax effects that included the reporting period the Tax Act was enacted. Judgement was used when applying the provisions of the Tax Act, including assumptions related to the impact of the lower corporate rate, and other analyses including, but not limited to, estimates of assets and liabilities at future dates and our calculation of deemed repatriation of deferred foreign income. Our provisional amounts are subject to further adjustments during the measurement period of up to one year following enactment of the Tax Act, as provided by recent SEC guidance.

Effective Income Tax Rate

Our effective income tax rate is based on annual income, statutory tax rates and tax planning available in the various jurisdictions in which we operate. Our annual effective income tax rate includes the impact of reserve provisions. We recognize the largest amount of tax benefit that is greater than 50% likely of being realized upon settlement with a taxing authority. We adjust these reserves in light of changing facts and circumstances. This expected annual rate is then applied to our year-to-date operating results. In the event that there is a significant discrete item recognized in our interim operating results, the tax attributable to that item would be separately calculated and recorded in the same period.

Tax regulations require items to be included in our tax returns at different times than the items are reflected in our financial statements. As a result, the effective income tax rate reflected in our financial statements differs from that reported in our tax returns. Some of these differences are permanent, such as expenses that are not deductible on our tax return, and some are temporary differences, such as depreciation expense.

Deferred Tax Assets and Liabilities and Valuation Allowances

Temporary differences create deferred tax assets and liabilities. Deferred tax assets generally represent items that can be used as a tax deduction or credit in our tax return in future years for which we have already recorded the tax benefit in our income statement. We establish valuation allowances for our deferred tax assets when the amount of expected future taxable income is not likely to support the utilization of the entire deduction or credit. Relevant factors in determining the realizability of deferred tax assets include historical results, future taxable income, the expected timing of the reversal of temporary differences, tax planning strategies and the expiration dates of the various tax attributes. Deferred tax liabilities generally represent items for which we have already taken a deduction in our tax return, but have not yet recognized that tax benefit in our financial statements.

Prior to the enactment of the Tax Act, U.S. deferred income taxes had not been provided on certain unremitted foreign earnings that are considered permanently reinvested. Undistributed earnings of foreign subsidiaries are considered to have been reinvested indefinitely or are available for distribution with foreign tax credits available to offset the amount of applicable income tax and foreign withholding taxes that might be payable on earnings. Upon enactment of the Tax Act, we recorded a one-time transition tax on certain unremitted foreign earnings of foreign subsidiaries, which is payable over eight years. We will continue to assert permanent reinvestment of the undistributed earnings of international affiliates, and if our policy changes we would record applicable taxes.

For additional information on income taxes see Note 12.

Uncertain Tax Positions

A number of years may elapse before a particular tax matter, for which we have established a reserve, is audited and finally resolved. The number of tax years with open tax audits varies depending on the tax jurisdiction. The Internal Revenue Service ("IRS") has completed its examinations of our federal income tax returns (Ecolab and Nalco) through 2014. Our U.S. federal income tax returns for the years 2015 and 2016 are currently under audit. In addition to the U.S. federal examinations, we have ongoing audit activity in several U.S. state and foreign jurisdictions.

The tax positions we take are based on our interpretations of tax laws and regulations in the applicable federal, state and international jurisdictions. We believe our tax returns properly reflect the tax consequences of our operations, and our reserves for tax contingencies are appropriate and sufficient for the positions taken. Because of the uncertainty of the final outcome of these examinations, we have reserved for potential reductions of tax benefits (including related interest and penalties) for amounts that do not meet the more-likely-than-not thresholds for recognition and measurement as required by authoritative guidance. The tax reserves are reviewed throughout the year, taking into account new legislation, regulations, case law and audit results. Settlement of any particular issue could result in offsets to other balance sheet accounts, cash payments or receipts and/or adjustments to tax expense. The majority of our tax reserves are presented in the Consolidated Balance Sheet within other non-current liabilities. Our gross liability for uncertain tax positions was $62 million and $76 million as of December 31, 2017 and 2016, respectively.

For additional information on income taxes see Note 12 .

Long-Lived Assets, Intangible Assets and Goodwill

Long-Lived and Amortizable Intangible Assets

We periodically review our long-lived and amortizable intangible assets, the net value of which was $7.0 billion and $6.4 billion as of December 31, 2017 and 2016, respectively, for impairment and to assess whether significant events or changes in business circumstances indicate that the carrying value of the assets may not be recoverable. Such circumstances may include a significant decrease in the market price of an asset, a significant adverse change in the manner in which the asset is being used or in its physical condition or history of operating or cash flow losses associated with the use of the asset. Impairment losses could occur when the carrying amount of an asset exceeds the anticipated future undiscounted cash flows expected to result from the use of the asset and its eventual disposition. The amount of the impairment loss to be recorded, if any, is calculated as the excess of the asset's carrying value over its estimated fair value.

We use the straight-line method to recognize amortization expense related to our amortizable intangible assets, including our customer relationships. We consider various factors when determining the appropriate method of amortization for our customer relationships, including projected sales data, customer attrition rates and length of key customer relationships.

Globally, we have a broad customer base. Our retention rate of significant customers has aligned with our acquisition assumptions, including the customer base acquired in our recent Nalco and Champion transactions, which make up the majority of our unamortized customer relationships. Our historical retention rate, coupled with our consistent track record of keeping long-term relationships with our customers, supports our expectation of consistent sales generation for the foreseeable future from the acquired customer base. Our customer retention rate and history of maintaining long-term relationships with our significant customers are not expected to change in the future. Additionally, other less certain post-acquisition operational assumptions related to future capital investments and working capital, as well as the impact of discount rate assumptions, induce variability and uncertainty in the pattern of economic benefits of our acquired customer relationships. If our customer retention rate or other post-acquisition operational activities changed materially, we would evaluate the financial impact and any corresponding triggers which could result in an acceleration of amortization or impairment of our customer relationship intangible assets.

In addition, we periodically reassess the estimated remaining useful lives of our long-lived and amortizable intangible assets. Changes to estimated useful lives would impact the amount of depreciation and amortization expense recorded in earnings. We have experienced no significant changes in the carrying value or estimated remaining useful lives of our long-lived or amortizable intangible assets.

Goodwill and Indefinite Life Intangible Assets

We had total goodwill of $7.2 billion and $6.4 billion as of December 31, 2017 and 2016, respectively. We test our goodwill for impairment at the reporting unit level on an annual basis during the second quarter. Our reporting units are aligned with our eleven operating segments (ten subsequent to the divestiture of the Equipment Care business).

For our 2017 impairment assessment, we completed our assessment for goodwill impairment across our eleven reporting units through a quantitative analysis, utilizing a discounted cash flow approach. The two-step quantitative process involved comparing the estimated fair value of each reporting unit to the reporting unit's carrying value, including goodwill. If the fair value of a reporting unit exceeds its carrying value, goodwill of the reporting unit is considered not to be impaired, and the second step of the impairment test is unnecessary. If the carrying amount of the reporting unit exceeds its fair value, the second step of the goodwill impairment test would be performed to measure the amount of impairment loss to be recorded, if any. Our goodwill impairment assessment for 2017 indicated the estimated fair value of each of our reporting units exceeded the unit's carrying amount by a significant margin. We will continue to assess the need to test our reporting units for impairment during interim periods between our scheduled annual assessments. In the fourth quarter of 2017 we sold the Equipment Care business, which was one of our reporting units and operating segments, and the goodwill associated with Equipment Care was disposed of upon sale. No goodwill impairment was realized as a result of the sale, and no other events occurred during the second half of 2017 indicating a need to update our conclusions reached during the second quarter of 2017.

As part of the Nalco merger, we added the "Nalco" trade name as an indefinite life intangible asset, the total value of which was $1.2 billion as of December 31, 2017 and 2016. The carrying value of the indefinite life trade name was subject to annual impairment testing, using a relief from royalty assessment method, during the second quarter of 2017. Based on this testing, no adjustment to the carrying value was necessary. Additionally, no events during the second half of 2017 indicated a need to update our conclusions reached during the second quarter of 2017.

RESULTS OF OPERATIONS

Net Sales

(millions)	2017	2016	2015	Percent Change 2017	Percent Change 2016
Reported GAAP net sales	**$13,838.3**	$13,152.8	$13,545.1	**5 %**	(3)%
Effect of foreign currency translation	**(192.1)**	(148.0)	(566.6)		
Non-GAAP fixed currency sales	**$13,646.2**	$13,004.8	$12,978.5	**5 %**	0 %

The percentage components of the year-over-year sales change are shown below:

(percent)	2017	2016
Volume	**3%**	(1)%
Price changes	**1**	0
Acquisition adjusted fixed currency sales change	**4**	(1)
Acquisitions & divestitures	**1**	1
Fixed currency sales change	**5**	0
Foreign currency translation	**0**	(3)
Reported GAAP net sales change	**5%**	(3)%

Cost of Sales (“COS”) and Gross Profit Margin (“Gross Margin”)

	2017		2016		2015	
(millions/percent)	COS	Gross Margin	COS	Gross Margin	COS	Gross Margin
Reported GAAP COS and gross margin	**$7,405.1**	**46.5 %**	$6,898.9	47.5 %	$7,223.5	46.7 %
Special (gains) and charges	**44.0**	**0.3**	66.0	0.5	80.6	0.6
Non-GAAP adjusted COS and gross margin	**$7,361.1**	**46.8 %**	$6,832.9	48.0 %	$7,142.9	47.3 %

Our COS values and corresponding gross margin are shown in the previous table. Our gross margin is defined as sales less cost of sales divided by sales.

Our reported gross margin was 46.5%, 47.5%, and 46.7% for 2017, 2016, and 2015, respectively. Our 2017, 2016 and 2015 reported gross margins were negatively impacted by special (gains) and charges of $44.0 million, $66.0 million, and $80.6 million, respectively. Special (gains) and charges items impacting COS are shown within the “Special (Gains) and Charges” table on page 33.

Excluding the impact of special (gains) and charges, our 2017 adjusted gross margin was 46.8% compared against a 2016 adjusted gross margin of 48.0%. The decrease was driven primarily by higher delivered product costs and an increase in Global Energy (which on average has a lower gross margin), which more than offset pricing and cost savings .

Excluding the impact of special (gains) and charges, our adjusted gross margin was 48.0% and 47.3% for 2016 and 2015, respectively. The increase was driven primarily by lower delivered product costs, cost efficiencies and the impact of the decline in Global Energy, which on average has a lower gross margin .

Selling, General and Administrative Expenses (“SG&A”)

(percent)	2017	2016	2015
SG&A Ratio	**31.9 %**	32.7 %	32.1 %

The decreased SG&A ratio (SG&A expenses as a percentage of reported net sales) comparing 2017 against 2016 was driven primarily by sales volume leverage and cost savings, which more than offset investments in the business and the impact of acquisitions .

The increased SG&A ratio (SG&A expenses as a percentage of reported net sales) comparing 2016 against 2015 was driven primarily by the impact of acquisitions, investments in the business, and the decline in Global Energy, which on average has a lower SG&A ratio.

Special (Gains) and Charges

Special (gains) and charges reported on the Consolidated Statement of Income included the following items:

(millions)	2017	2016	2015
Cost of sales			
Restructuring activities	$4.6	$(0.4)	$16.5
Acquisition and integration costs	13.2	-	-
Fixed asset impairment and other charges	26.2	10.0	24.7
Inventory costs and reserves	-	(6.2)	6.1
Energy related charges	-	62.6	-
Venezuela related activities	-	-	33.3
Subtotal	44.0	66.0	80.6
Special (gains) and charges			
Restructuring activities	39.9	(8.7)	83.8
Acquisition and integration costs	15.4	8.6	18.7
Gain on sale of business	(46.1)	-	-
Energy related charges	-	14.2	-
Venezuela related activities	(11.5)	(7.8)	256.0
Other	(1.4)	33.2	56.3
Subtotal	(3.7)	39.5	414.8
Operating income subtotal	40.3	105.5	495.4
Interest expense, net	21.9	-	-
Net income attributable to noncontrolling interest			
Restructuring activities	-	-	(1.7)
Venezuela related activities	-	-	(11.1)
Subtotal	-	-	(12.8)
Total special (gains) and charges	$62.2	$105.5	$482.6

For segment reporting purposes, special (gains) and charges are not allocated to reportable segments, which is consistent with our internal management reporting.

Restructuring Activities

Restructuring charges have been included as a component of cost of sales, special (gains) and charges and net income (loss) attributable to noncontrolling interest on the Consolidated Statement of Income. Further details related to our restructuring charges are included in Note 3 .

During the second quarter of 2017, we commenced restructuring and other cost-saving actions in order to streamline our operations. These actions include a reduction of our global workforce by approximately 570 positions, as well as asset disposals and lease terminations. As a result of these actions, we have incurred restructuring charges of $45.5 million ($32.7 million after tax) or $0.11 per diluted share, during 2017. Actions were substantially completed in 2017. As of December 31, 2017, the restructuring liability balance related to these activities was $23.2 million. The majority of the pretax charges represent net cash expenditures which are expected to be paid over a period of a few months to several quarters and will be funded from operating activities. Cash payments during 2017, related to actions initiated in 2017, were $17.8 million.

We recorded net restructuring gains related to legacy restructuring plans that commenced prior to 2015 of $1.0 million ($0.04 million after tax) or less than $0.01 per diluted share during 2017. W e recorded net restructuring gains of $9.1 million ($10.8 million after tax) or $0.04 per diluted share in 2016 and net restructuring charges of $100.3 million ($77.2 million after tax) or $0.25 per diluted share during 2015. The legacy restructuring plans liability balance was $18.3 million, $39.6 million, and $90.1 million as of December 31, 2017, 2016 and 2015, respectively. The reduction in liability balance was driven primarily by severance and other cash payments. The remaining accrual is expected to be paid over a period of a few months to several quarters and continues to be funded from operating activities.

Acquisition and integration related costs

Acquisition and integration costs reported in cost of sales on the Consolidated Statement of Income in 2017 include $13.2 million ($8.6 million after tax) or $0.03 per diluted share related primarily to disposal of excess inventory upon the closure of Swisher plants, accelerated rent expense, and amounts related to recognition of fair value step-up in the Anios inventory.

Acquisition and integration costs reported in special (gains) and charges on the Consolidated Statement of Income in 2017 include $15.4 million ($9.9 million after tax) or $0.03 per diluted share of acquisition costs, advisory and legal fees, and integration charges for the Anios and Swisher acquisitions during 2017.

During 2016, we incurred acquisition and integration charges of $8.6 million ($5.4 million after tax) or $0.02 per diluted share primarily related to the Swisher acquisition. During 2015, a s a result of the Champion acquisition and Nalco merger, we incurred charges of $18.7 million ($12.0 million after tax) or $0.05 per diluted share. The charges have been included as a component of special (gains) and charges on the Consolidated Statement of Income. Further information related to our acquisitions is included in Note 4.

Fixed asset impairment and other charges

During 2017, we recorded other charges of $26.2 million ($19.7 million after tax), or $0.07 per diluted share, primarily relating to fixed asset impairments and a Global Energy vendor contract termination.

During 2015, we recorded fixed asset impairment charge of $24.7 million ($15.4 million after tax), or $0.05 per diluted share, consisting of certain production equipment and buildings within one of our U.S. plants. During 2016, we recorded an additional charge of $10.0 million ($6.3 million after tax), or $0.02 per diluted share related to the dry polymer fixed asset impairment, as well as related inventory charges. Subsequent to the charge, the remaining value of the underlying fixed assets was less than $5 million. Inventory charges include adjustments due to the significant decline in activity and related prices of the corresponding dry polymer products.

These items have been included as a component of cost of sales on the Consolidated Statement of Income.

Inventory costs and reserve

During 2015, we improved and standardized estimates related to our inventory reserves and product costing, resulting in a net pre-tax charge of $6.1 million. Separately, the actions resulted in a charge of $20.6 million ($15.9 million after tax), or $0.05 per diluted share, related to inventory reserve calculations, partially offset by a gain of $14.5 million ($12.2 million after tax), or $0.04 per diluted share, related to the capitalization of certain cost components into inventory. During 2016, we took additional actions related to the capitalization of certain cost components into inventory, which resulted in a gain of $6.2 million ($4.6 million after tax), or $0.02 per diluted share.

Energy related charges

Oil industry activity was depressed during 2016 when compared with 2014 levels, resulting from excess oil supply pressures, which negatively impacted exploration and production investments in the energy industry, particularly in North America. As a result of these conditions and their corresponding impact on our business outlook, we recorded total charges of $76.8 million ($50.0 million after tax) or $0.17 per diluted share, comprised of inventory write-downs and related disposal costs, fixed asset charges, headcount reductions and other charges in 2016. No such charges were incurred in 2017.

The inventory write-downs and related disposal costs of $40.5 million include adjustments due to the significant decline in activity and related prices of certain specific-use and other products, coupled with declines in replacement costs, as well as estimated costs to dispose the respective excess inventory. The fixed asset charges of $20.4 million resulted from the write-down of certain assets related to the reduction of certain aspects of our North American operations within the Global Energy segment, as well as abandonment of certain projects under construction. The carrying value of the corresponding fixed assets was reduced to zero. The employee termination costs of $13.1 million include a reduction in our Global Energy segment’s global workforce to better align its workforce with anticipated activity levels in the near term. As of the end of 2017, the remaining severance liability was minimal.

The charges discussed above have been included as a component of both cost of sales and special (gains) and charges on the Consolidated Statement of Income.

Venezuela related activities

Effective as of the end of the fourth quarter of 2015, we deconsolidated our Venezuelan subsidiaries and began accounting for the investments in our Venezuelan subsidiaries using the cost method of accounting effective in the first quarter of 2016. The conditions within Venezuela driving this decision remained in place during 2016 and 2017. Prior to deconsolidation, we remeasured our Venezuelan bolivar operations within our Water, Paper, Food & Beverage, Institutional and the bolivar portion of our Venezuelan operations within Energy operating segments from the official exchange rate at the time of 6.3 bolivares to 1 U.S. dollar to the SIMADI rate at the time of approximately 200 bolivares to 1 U.S. dollar. As a result of the ownership structure of our Food & Beverage and Institutional operations in Venezuela, we reflected a portion of the devaluation impact as a component of net income (loss) attributable to noncontrolling interest on the Consolidated Statement of Income. Upon deconsolidation, we recorded a charge to fully write off our intercompany receivables and investment. The total charges during 2015 related to our actions in Venezuela were $289.3 million ($246.8 million after tax). We reflected $11.1 million of the above charges as a component of net income (loss) attributable to noncontrolling interest on the Consolidated Statement of Income, resulting in a net charge of $235.7 million or $0.78 per diluted share.

We recorded gains due to U.S. dollar cash recoveries of intercompany receivables written off at the time of deconsolidation of $11.5 million ($7.2 million after tax) or $0.02 per diluted share and $7.8 million ($4.9 million after tax) or $0.02 per diluted share in 2017 and 2016, respectively.

Gain on sale of business

During 2017, we disposed of the Equipment Care business and recorded a gain of $46.1 million ($12.4 million after tax primarily due to non-deductible goodwill), or $0.04 per diluted share, net of working capital adjustments, costs to sell and other transaction expenses. The gain has been included as a component of special (gains) and charges on the Consolidated Statement of Income.

Other

We recorded net gains of $1.4 million ($0.7 million after tax), or less than $0.01 per diluted share, net charges of $33.2 million ($21.1 million after tax) or $0.07 per diluted share, and net charges of $56.3 million ($34.5 million after tax), or $0.11 per diluted share in 2017, 2016, and 2015, respectively, primarily related to litigation related charges and settlements. In 2015, this also included the recognition of a loss on the sale of a portion of our Ecovation business, offset partially by the recovery of funds deposited into escrow as part of the Champion transaction. These items have been included as a component of special (gains) and charges on the Consolidated Statement of Income.

Interest Expense, net

During 2017, in anticipation of U.S. tax reform and a potential limit on interest deductibility in future years , we entered into transactions to exchange or retire certain long-term debt, and incurred debt exchange and extinguishment charges of $21.9 million ($13.6 million after tax), or $0.05 per diluted share. This charge has been included as a component of interest expense, net on the Consolidated Statement of Income.

Operating Income and Operating Income Margin

				Percent Change	
(millions)	**2017**	2016	2015	**2017**	2016
Reported GAAP operating income	**$2,019.8**	$1,915.0	$1,561.3	**5 %**	23 %
Special (gains) and charges	**40.3**	105.5	495.4		
Non-GAAP adjusted operating income	**2,060.1**	2,020.5	2,056.7	**2**	(2)
Effect of foreign currency translation	**(32.9)**	(25.2)	(119.8)		
Non-GAAP adjusted fixed currency operating income	**$2,027.2**	$1,995.3	$1,936.9	**2 %**	3 %

(percent)	**2017**	2016	2015
Reported GAAP operating income margin	**14.6 %**	14.6 %	11.5 %
Non-GAAP adjusted operating income margin	**14.9 %**	15.4 %	15.2 %
Non-GAAP adjusted fixed currency operating income margin	**14.9 %**	15.3 %	14.9 %

Our operating income and corresponding operating income margin are shown in the previous tables. Operating income margin is defined as operating income divided by sales.

Our reported operating income increased 5% when comparing 2017 to 2016 and increased 23% when comparing 2016 to 2015. Our reported operating income for 2017, 2016 and 2015 was impacted by special (gains) and charges. Excluding the impact of special (gains) and charges from all three years, 2017 adjusted operating income increased 2% when compared to 2016 adjusted operating income and 2016 adjusted fixed currency operating income decreased 2% when compared to 2015 adjusted operating income.

As shown in the previous table, foreign currency translation had a minimal impact on adjusted operating income growth for 2017. Foreign currency translation had a negative impact on adjusted fixed currency operating income growth for 2016, as adjusted fixed currency operating income increased 3%.

Interest Expense, Net

(millions)	2017	2016	2015
Reported GAAP interest expense, net	$255.0	$264.6	$243.6
Special (gains) and charges	21.9	-	-
Non-GAAP adjusted interest expense, net	$233.1	$264.6	$243.6

Reported net interest expense totaled $255.0 million, $264.6 million and $243.6 million during 2017, 2016 and 2015, respectively.

During 2017, in anticipation of U.S. tax reform and a potential limit on interest deductibility in future years, we entered into transactions to exchange or retire certain long-term debt, and incurred debt exchange and extinguishment charges of $21.9 million ($13.6 million after tax), or $0.05 per diluted share.

The decrease in our 2017 adjusted net interest expense compared to 2016 was driven primarily by an increased mix of lower cost Euro interest and lower interest rates on refinanced debt. The increase when comparing 2016 to 2015 was driven primarily by higher weighted average interest rates on outstanding debt.

Provision for Income Taxes

The following table provides a summary of our tax rate:

(percent)	2017	2016	2015
Reported GAAP tax rate	13.7 %	24.4 %	22.8 %
Tax rate impact of:			
The Tax Act	8.8	0.0	0.0
Special gains and charges	(0.1)	1.0	(0.4)
Discrete tax items	1.4	(0.2)	3.5
Non-GAAP adjusted tax rate	23.8 %	25.2 %	25.9 %

Our reported tax rate for 2017, 2016 and 2015 includes the tax impact of special gains and charges and discrete tax items, which have impacted the comparability of our historical reported tax rates, as amounts included in our special gains and charges are derived from tax jurisdictions with rates that vary from our tax rate, and discrete tax items are not necessarily consistent across periods. The tax impact of special (gains) and charges and discrete tax items will likely continue to impact comparability of our reported tax rate in the future. The enactment of the Tax Act also significantly impacted the comparability of our reported tax rate.

Our 2017 reported tax rate includes $160.9 million of net tax benefits associated with the Tax Act, $6.2 million of net tax benefits on special gains and charges and net tax benefits of $25.3 million associated with discrete tax items. In connection with our analysis of the impact of the Tax Act, we recorded a provisional net discrete tax benefit of $160.9 million in the period ended December 31, 2017, which includes a $321.0 million tax benefit for recording deferred tax assets and liabilities at the U.S. enacted tax rate and a net expense for the one-time transition tax of $160.1 million. While we are able to make an estimate of the impact of the reduction in the U.S. rate, it may be affected by other analyses related to the Tax Act, including, but not limited to, estimates of assets and liabilities at future dates, our calculation of deemed repatriation of deferred foreign income and the state tax effect of adjustments made to federal temporary differences. In addition, federal and state tax authorities continue to issue technical guidance which may change the provisional amounts recorded in our financial statements.

Special (gains) and charges represent the tax impact of special (gains) and charges, as well as additional tax benefits utilized in anticipation of U.S. tax reform of $7.8 million. During 2017, we also recorded a discrete tax benefit of $39.7 million related to excess tax benefits, resulting from the adoption of accounting changes regarding the treatment of tax benefits on share-based compensation. The extent of excess tax benefits is subject to variation in stock price and stock option exercises. In addition, we recorded net discrete expenses of $14.4 million related to recognizing adjustments from filing our 2016 U.S. federal income tax return and international adjustments due to changes in estimates, partially offset by the release of reserves for uncertain tax positions due to the expiration of statute of limitations in state tax matters.

Our 2016 reported tax rate includes $43.1 million of net tax benefits on special gains and charges and net expenses of $3.9 million associated with discrete tax items. Our 2015 reported tax rate includes $105.7 million of net tax benefits on special gains and charges and net benefits of $63.3 million associated with discrete tax items. The net expenses related to discrete tax items in 2016 were driven primarily by recognizing adjustments from filing our 2015 U.S. federal income tax return, partially offset by settlement of international tax matters and remeasurement of certain deferred tax assets and liabilities resulting from the application of updated tax rates in international jurisdictions. Net expenses were also impacted by adjustments to deferred tax asset and liability positions and the release of reserves for uncertain tax positions due to the expiration of statute of limitations in international jurisdictions.

Net benefits related to discrete tax items in 2015 were driven primarily by the release of $20.6 million of valuation allowances based on the realizability of foreign deferred tax assets and our ability to recognize a worthless stock deduction of $39.0 million for the tax basis in a wholly-owned domestic subsidiary.

The change in our adjusted tax rate from 2015 to 2017 was primarily driven by global tax planning projects and geographic income mix. Future comparability of our adjusted tax rate may be impacted by various factors, including but not limited to, the Tax Act, other changes in global tax rules, further tax planning projects and geographic income mix.

Net Income Attributable to Ecolab

				Percent Change	
(millions)	**2017**	2016	2015	**2017**	2016
Reported GAAP net income attributable to Ecolab	**$1,508.4**	$1,229.6	$1,002.1	**23 %**	23 %
Adjustments:					
Special (gains) and charges, after tax	**56.0**	62.4	376.9		
Discrete tax net expense (benefit)	**(186.2)**	3.9	(63.3)		
Non-GAAP adjusted net income attributable to Ecolab	**$1,378.2**	$1,295.9	$1,315.7	**6 %**	(2)%

Diluted EPS

				Percent Change	
(dollars)	**2017**	2016	2015	**2017**	2016
Reported GAAP diluted EPS	**$ 5.13**	$ 4.14	$ 3.32	**24 %**	25 %
Adjustments:					
Special (gains) and charges	**0.19**	0.21	1.25		
Discrete tax net expense (benefit)	**(0.63)**	0.01	(0.21)		
Non-GAAP adjusted diluted EPS	**$ 4.69**	$ 4.37	$ 4.37	**7 %**	0 %

Per share amounts do not necessarily sum due to rounding.

Currency translation had minimal impact on reported and adjusted diluted EPS comparability across 2017 and 2016, but had a significant unfavorable impact of approximately $0.31 per share for 2016 compared to 2015.

SEGMENT PERFORMANCE

The non-U.S. dollar functional international amounts included within our reportable segments are based on translation into U.S. dollars at the fixed currency exchange rates used by management for 2017. The difference between the fixed currency exchange rates and the actual currency exchange rates is reported as "effect of foreign currency translation" in the following tables. Fixed currency amounts for 2015 also reflect all Venezuelan bolivar operations, prior to deconsolidation of our Venezuelan operations, at a SIMADI rate of approximately 200 bolivares to 1 U.S. dollar. All other accounting policies of the reportable segments are consistent with U.S. GAAP and the accounting policies described in Note 2. Additional information about our reportable segments is included in Note 17.

Fixed currency net sales and operating income for 2017, 2016 and 2015 for our reportable segments are shown in the following tables .

Net Sales

(millions)	2017	2016	2015	Percent Change 2017	Percent Change 2016
Global Industrial	$4,878.5	$4,687.2	$4,551.1	4 %	3 %
Global Institutional	4,744.9	4,440.1	4,164.6	7	7
Global Energy	3,199.3	3,075.8	3,520.1	4	(13)
Other	823.5	801.7	742.7	3	8
Subtotal at fixed currency	13,646.2	13,004.8	12,978.5	5	0
Effect of foreign currency translation	192.1	148.0	566.6		
Total reported net sales	$13,838.3	$13,152.8	$13,545.1	5 %	(3)%

Operating Income

(millions)	2017	2016	2015	Percent Change 2017	Percent Change 2016
Global Industrial	$722.0	$720.0	$638.9	0 %	13 %
Global Institutional	985.7	950.5	867.1	4	10
Global Energy	338.5	346.7	475.3	(2)	(27)
Other	149.3	145.2	124.6	3	17
Corporate	(208.6)	(272.6)	(664.4)		
Subtotal at fixed currency	1,986.9	1,889.8	1,441.5	5	31
Effect of foreign currency translation	32.9	25.2	119.8		
Total reported operating income	$2,019.8	$1,915.0	$1,561.3	5 %	23 %

The following tables reconcile the impact of acquisitions and divestitures within our reportable segments.

Net Sales

	2017			2016		
(millions)	Fixed Currency	Impact of Acquisitions and Divestitures	Acquisition Adjusted	Fixed Currency	Impact of Acquisitions and Divestitures	Acquisition Adjusted
Global Industrial	$4,878.5	$(46.7)	$4,831.8	$4,687.2	$(11.0)	$4,676.2
Global Institutional	4,744.9	(207.4)	4,537.5	4,440.1	(28.9)	4,411.2
Global Energy	3,199.3	(9.0)	3,190.3	3,075.8	(33.5)	3,042.3
Other	823.5	(2.1)	821.4	801.7	(28.9)	772.8
Subtotal at fixed currency	13,646.2	(265.2)	13,381.0	13,004.8	(102.3)	12,902.5
Effect of foreign currency translation	192.1			148.0		
Total reported net sales	$13,838.3			$13,152.8		

Operating Income

	2017			2016		
(millions)	Fixed Currency	Impact of Acquisitions and Divestitures	Acquisition Adjusted	Fixed Currency	Impact of Acquisitions and Divestitures	Acquisition Adjusted
Global Industrial	$722.0	$(3.4)	$718.6	$720.0	$(2.5)	$717.5
Global Institutional	985.7	(25.8)	959.9	950.5	0.8	951.3
Global Energy	338.5	(2.9)	335.6	346.7	(13.8)	332.9
Other	149.3	0.6	149.9	145.2	(2.1)	143.1
Corporate	(168.3)	-	(168.3)	(167.1)	-	(167.1)
Non-GAAP adjusted fixed currency operating income	2,027.2	(31.5)	1,995.7	1,995.3	(17.6)	1,977.7
Special (gains) and charges	40.3			105.5		
Subtotal at fixed currency	1,986.9			1,889.8		
Effect of foreign currency translation	32.9			25.2		
Total reported operating income	$2,019.8			$1,915.0		

Global Industrial

	2017	2016	2015
Sales at fixed currency (millions)	**$4,878.5**	$4,687.2	$4,551.1
Sales at public currency (millions)	**4,974.4**	4,766.6	4,773.9
Volume	**2 %**	2 %	
Price changes	**1 %**	1 %	
Acquisition adjusted fixed currency sales change	**3 %**	2 %	
Acquisitions and divestitures	**1 %**	1 %	
Fixed currency sales change	**4 %**	3 %	
Foreign currency translation	**0 %**	(3)%	
Public currency sales change	**4 %**	(0)%	
Operating income at fixed currency (millions)	**$722.0**	$720.0	$638.9
Operating income at public currency (millions)	**740.7**	735.9	684.1
Fixed currency operating income change	**0 %**	13 %	
Fixed currency operating income margin	**14.8 %**	15.4 %	14.0 %
Acquisition adjusted fixed currency operating income change	**- %**	12 %	
Acquisition adjusted fixed currency operating income margin	**14.9 %**	15.3 %	14.1 %
Public currency operating income change	**1 %**	8 %	

Amounts do not necessarily sum due to rounding.

Net Sales

Fixed currency sales growth for Global Industrial in both 2017 and 2016 was driven by volume gains and pricing. At a regional level, the 2017 sales increase was impacted by good growth in Latin America, North America and Greater China. Regional results for 2016 were impacted by good growth in Latin America and moderate growth in Middle East/Africa (“MEA”) and Europe.

At an operating segment level, ***Water*** fixed currency sales increased 5% in 2017 (increase of 3% acquisition adjusted). Light industry sales growth was led by innovative technology and service offerings. Fixed currency sales increased 3% in 2016, (increase of 1% acquisition adjusted) as growth in light industry sales was offset by a double digit decline in the mining industry. ***Food & Beverage*** fixed currency sales increased 4% in 2017, benefiting from new business wins and pricing, which more than offset generally flat industry trends. Growth was led by the food, beverage and brew markets. Fixed currency sales increased 3% in 2016, benefiting from corporate account and share gains, which more than offset generally flat industry trends. ***Paper*** fixed currency sales increased 3% in 2017 benefiting from strong sales efforts and business wins, which more than offset challenging market conditions in China and Europe. Fixed currency sales increased 2% in 2016, helped by strong sales efforts and business wins. ***Textile Care*** fixed currency sales increased 2% in 2017 and 4% in 2016, benefiting from new customer accounts in Europe. ***Life Sciences*** fixed currency sales increased 7% in 2017 as business wins and pricing drove sales growth in both the pharmaceutical and personal care markets.

Operating Income

Fixed currency operating income for Global Industrial was flat in 2017 and increased in 2016 when compared to prior periods. Fixed currency operating income margins for Global Industrial decreased in 2017 and increased in 2016. Acquisitions had a minimal impact on the fixed currency operating income growth and the fixed currency operating income margins in 2017 and positively impacted fixed currency operating income growth and had minimal impact on fixed currency operating income margins in 2016.

Acquisition adjusted fixed currency operating income margins decreased 0.4 percentage points in 2017, negatively impacted by approximately 2.0 percentage points related to higher delivered product costs and investments in the business, partially offset by 1.9 percentage points from favorable impact of pricing and volume gains and cost savings initiatives. Acquisition adjusted fixed currency operating income margins increased 1.2 percentage points in 2016, benefiting from favorable impact of sales volume gains, product mix changes and pricing gains.

Global Institutional

	2017	2016	2015
Sales at fixed currency (millions)	$4,744.9	$4,440.1	$4,164.6
Sales at public currency (millions)	4,802.5	4,483.5	4,260.6
Volume	1 %	3 %	
Price changes	2 %	2 %	
Acquisition adjusted fixed currency sales change	3 %	5 %	
Acquisitions and divestitures	4 %	2 %	
Fixed currency sales change	7 %	7 %	
Foreign currency translation	0 %	(1)%	
Public currency sales change	7 %	5 %	
Operating income at fixed currency (millions)	$985.7	$950.5	$867.1
Operating income at public currency (millions)	993.8	956.7	878.6
Fixed currency operating income change	4 %	10 %	
Fixed currency operating income margin	20.8 %	21.4 %	20.8 %
Acquisition adjusted fixed currency operating income change	1 %	12 %	
Acquisition adjusted fixed currency operating income margin	21.2 %	21.6 %	21.0 %
Public currency operating income change	4 %	9 %	

Amounts do not necessarily sum due to rounding.

Net Sales

Fixed currency sales growth for Global Institutional in both 2017 and 2016 benefited from volume growth, acquisitions and pricing gains. At a regional level, the 2017 sales increase was led by good growth in North America. The 2016 sales increase was led by good growth in North America, Latin America and Asia Pacific.

At an operating segment level, ***Institutional*** fixed currency sales increased 1% in 2017 (increase of 2% acquisition adjusted). Global lodging demand continued to show moderate growth while global full service restaurant industry foot traffic remained weak, particularly in North America. Fixed currency sales increased 8% in 2016 (increase of 5% acquisition adjusted). New business wins, led by demand for our leading product innovation in key platforms, along with appropriate pricing, drove our results. ***Specialty*** fixed currency sales increased 7% in 2017, led primarily by new account wins and growth in global quick service accounts, leveraging generally modest industry trends. New business gains remain robust, driven by improved service coverage, new product innovations, additional customer solutions and a continued focus among our customers on food safety as fresh products become more prevalent and require more cleaning. Fixed currency sales increased 7% in 2016. Both quick service and food retail sales growth were solid, led by account growth, new customers and product penetration. ***Healthcare*** fixed currency sales increased 42% in 2017 (increase of 3%, when adjusted for the Anios acquisition), with modest growth for Healthcare in North America and Europe. Fixed currency sales increased 4% in 2016, as improving trends in both North America and Europe reflected the continued focus on our value proposition, leading to customer gains and product penetration.

Operating Income

Fixed currency operating income for Global Institutional increased in both 2017 and 2016 when compared to prior periods. Fixed currency operating income margins decreased for Global Institutional in 2017 and increased in 2016. Acquisitions had a positive impact on fixed currency operating income growth in 2017 and a negative impact in 2016. Acquisitions had a negative impact on fixed currency operating income margins in both 2017 and 2016.

Acquisition adjusted fixed currency operating income margins decreased 0.4 percentage points in 2017, negatively impacted by approximately 1.6 percentage points related business investments and higher delivered product costs. Pricing gains, product mix and sales volume favorably impacted acquisition adjusted fixed currency operating income margins by adding approximately 1.5 percentage points in 2017. Acquisition adjusted fixed currency operating income margins increased 0.6 percentage points in 2016. The favorable impact of pricing gains, product mix changes and sales volume increases added approximately 1.9 percentage points in 2016, partially offset by investments in the business.

Global Energy

	2017	2016	2015
Sales at fixed currency (millions)	**$3,199.3**	$3,075.8	$3,520.1
Sales at public currency (millions)	**3,230.0**	3,092.9	3,747.2
Volume	**6 %**	(10)%	
Price changes	**(1)%**	(3)%	
Acquisition adjusted fixed currency sales change	**5 %**	(13)%	
Acquisitions and divestitures	**(1)%**	(0)%	
Fixed currency sales change	**4 %**	(13)%	
Foreign currency translation	**0 %**	(5)%	
Public currency sales change	**4 %**	(17)%	
Operating income at fixed currency (millions)	**$338.5**	$346.7	$475.3
Operating income at public currency (millions)	**344.2**	349.2	538.5
Fixed currency operating income change	**(2)%**	(27)%	
Fixed currency operating income margin	**10.6 %**	11.3 %	13.5 %
Acquisition adjusted fixed currency operating income change	**1 %**	(28)%	
Acquisition adjusted fixed currency operating income margin	**10.5 %**	10.9 %	13.2 %
Public currency operating income change	**(1)%**	(35)%	

Amounts do not necessarily sum due to rounding.

Net Sales

Fixed currency sales for Global Energy in 2017 had a strong growth in the well stimulation business, while the production business showed a modest decline, as growth in North America was offset by international markets. Sales in our downstream business rose moderately. In 2016, fixed currency sales for Global Energy were negatively impacted by volume reductions and lower pricing. Continued difficult operating conditions negatively impacted our well stimulation and production businesses due to lower pricing and customer product usage. Sales in our downstream business were flat in 2016. Market challenges in North America drove the reductions from a regional perspective in 2016.

Operating Income

Fixed currency operating income for Global Energy decreased during both 2017 and 2016 as compared to the prior year. Fixed currency operating income margins also decreased during both comparable periods. Acquisitions had a negative impact on fixed currency operating income in 2017 and minimal impact on the fixed currency operating income in 2016. Acquisitions had a minimal impact on fixed currency operating income margins during both 2017 and 2016.

Acquisition adjusted fixed currency operating income margins for our Global Energy segment decreased 0.4 and 2.3 percentage points in 2017 and 2016, respectively. Higher delivered product costs and business investments negatively impacted 2017 by 1.7 percentage points, partially offset by cost savings of 1.0 percentage points. Reductions in sales volume, product mix changes and lower pricing contributed approximately 5.7 percentage points to the decline in 2016, which offset the benefit of lower delivered product costs, synergies and other cost reduction actions.

Other

	2017	2016	2015
Sales at fixed currency (millions)	$823.5	$801.7	$742.7
Sales at public currency (millions)	831.4	809.8	763.4
Volume	4 %	6 %	
Price changes	2 %	2 %	
Acquisition adjusted fixed currency sales change	6 %	8 %	
Acquisitions and divestitures	(3)%	(0)%	
Fixed currency sales change	3 %	8 %	
Foreign currency translation	(0)%	(2)%	
Public currency sales change	3 %	6 %	
Operating income at fixed currency (millions)	$149.3	$145.2	$124.6
Operating income at public currency (millions)	151.2	147.2	128.3
Fixed currency operating income change	3 %	17 %	
Fixed currency operating income margin	18.1 %	18.1 %	16.8 %
Acquisition adjusted fixed currency operating income change	5 %	16 %	
Acquisition adjusted fixed currency operating income margin	18.2 %	18.5 %	17.1 %
Public currency operating income change	3 %	15 %	

Amounts do not necessarily sum due to rounding.

Net Sales

Fixed currency sales growth for Other in both 2017 and 2016 was driven by volume increases and pricing gains. At a regional level, the 2017 sales increase was led by good growth in North America. The 2016 sales increase was led by good growth in Asia Pacific, Latin America, North America and MEA.

At an operating segment level, ***Pest Elimination*** fixed currency sales increased 8% in 2017 (increase of 7% acquisition adjusted), sales to food beverage and hospitality, and good growth in restaurants led the growth. Fixed currency sales increased 8% in 2016, impacted by continued gains in the foodservice market, benefiting from customer penetration and new service offerings. Prior to the sale of ***Equipment Care*** , fixed currency sales increased 2% in 2017. Fixed currency sales increased 7% in 2016, driven by continued increases in both service and parts sales, benefiting from new customer additions.

Operating Income

Fixed currency operating income increased in both 2017 and 2016 as compared to the prior year. The corresponding operating margin for our Other segment remained flat in 2017 and increased in 2016.

Acquisition adjusted fixed currency operating income margins for our Other segment decreased 0.3 percentage points in 2017 and increased 1.4 percentage points in 2016. Field investments and other cost increases negatively impacted 2017 margins by 1.8 percentage points, offsetting the benefit of pricing volume and mix gains of 1.5 percentage points. In 2016, the favorable impact of pricing gains, product mix changes and sales volume increases added approximately 2.4 percentage points and was partially offset by investments in business and other cost increases .

Corporate

Consistent with our internal management reporting, Corporate amounts in the table on page 38 include intangible asset amortization specifically from the Nalco merger and special (gains) and charges that are not allocated to our reportable segments . Items included within special (gains) and charges are shown in the table on page 33 .

FINANCIAL POSITION, CASH FLOW AND LIQUIDITY

Financial Position

Total assets were $20.0 billion as of December 31, 2017, compared to total assets of $18.3 billion as of December 31, 2016. The increase in assets during 2017 was driven primarily by increased goodwill and intangibles as a result of the Anios and other acquisitions and the positive impact of foreign currency exchange rates on the value of our foreign assets translated into U.S. dollars as of year end 2017.

Total liabilities were $12.3 billion as of December 31, 2017, compared to total liabilities of $11.4 billion as of December 31, 2016. Total debt was $7.3 billion as of December 31, 2017 and $6.7 billion as of December 31, 2016. See further discussion of our debt activity within the “Liquidity and Capital Resources” section of this MD&A.

Our net debt to EBITDA and net debt to adjusted EBIDTA are shown in the following table. EBITDA and adjusted EBITDA are non-GAAP measures, which are discussed further in the “Non-GAAP Financial Measures” section of this MD&A.

	2017	2016	2015
(ratio)			
Net debt to EBITDA	2.4	2.3	2.6
Net debt to adjusted EBITDA	2.4	2.2	2.2
(millions)			
Total debt	$7,322.7	$6,687.0	$6,465.5
Cash	211.4	327.4	92.8
Net debt	$7,111.3	$6,359.6	$6,372.7
Net income including non-controlling interest	$1,522.4	$1,247.1	$1,017.2
Provision for income taxes	242.4	403.3	300.5
Interest expense, net	255.0	264.6	243.6
Depreciation	585.7	561.0	559.5
Amortization	307.6	289.7	300.0
EBITDA	2,913.1	2,765.7	2,420.8
Special (gains) and charges impacting EBITDA	40.3	105.5	495.4
Adjusted EBITDA	$2,953.4	$2,871.2	$2,916.2

Cash Flows

Operating Activities

				Dollar Change	
(millions)	2017	2016	2015	2017	2016
Cash provided by operating activities	$2,091.3	$1,939.7	$1,999.8	$151.6	$(60.1)

We continue to generate strong cash flow from operations, allowing us to fund our ongoing operations, acquisitions, investments in the business and pension obligations along with returning cash to our shareholders through dividend payments and share repurchases.

Comparability of cash generated from operating activities across 2015 to 2017 was impacted by f luctuations in accounts receivable, inventories and accounts payable (“working capital”), the combination of which increased $56 million, $35 million and $119 million in 2017, 2016 and 2015 respectively. The cash flow impact across the three years from working capital accounts was driven by changes in sales volumes and timing of collections; timing of purchases and production and usage levels; and volume of purchases and timing of payments.

The impact on operating cash flows of pension and postretirement plan contributions, cash activity related to restructuring, cash paid for income taxes and cash paid for interest, are shown in the following table:

				Dollar Change	
(millions)	2017	2016	2015	2017	2016
Pensions and postretirement plan contributions	$144.1	$211.8	$64.9	$(67.7)	$146.9
Restructuring payments	39.2	51.6	61.7	(12.4)	(10.1)
Income tax payments	402.8	359.1	533.1	43.7	(174.0)
Interest payments	239.3	267.0	237.2	(27.7)	29.8

Investing Activities

(millions)	2017	2016	2015	Dollar Change 2017	Dollar Change 2016
Cash used for investing activities	**$(1,673.2)**	$(829.5)	$(915.8)	**$(843.7)**	$86.3

Cash used for investing activities is primarily impacted by the timing of business acquisitions and dispositions as well as from capital investments in the business.

Total cash paid for acquisitions, net of cash acquired and net of cash received from dispositions, in 2017, 2016 and 2015 was $870 million, $49 million and $265 million, respectively. Our acquisitions and divestitures across 2017, 2016 and 2015 are discussed further in Note 4. We continue to target strategic business acquisitions which complement our growth strategy and expect to continue to make capital investments and acquisitions in the future to support our long-term growth.

We continue to make capital investments in the business, including merchandising and customer equipment and manufacturing facilities. Total capital expenditures, including software, were $869 million, $757 million and $815 million in 2017, 2016 and 2015, respectively.

Financing Activities

(millions)	2017	2016	2015	Dollar Change 2017	Dollar Change 2016
Cash used for financing activities	**$(522.7)**	$(868.2)	$(1,150.9)	**$345.5**	$282.7

Our cash flows from financing activities primarily reflect the issuances and repayment of debt, common stock repurchases, proceeds from common stock issuances related to our equity incentive programs, dividend payments and acquisition-related contingent considerations.

Shares are repurchased for the purpose of partially offsetting the dilutive effect of our equity compensation plans and stock issued in acquisitions, to manage our capital structure and to efficiently return capital to shareholders. We repurchased a total of $600 million, $740 million, and $755 million of shares in 2017, 2016 and 2015, respectively. These amounts include $300 million of shares repurchased each year from 2015 through 2017 through our ASR programs. See Note 10 for further information regarding our ASR programs. Cash proceeds and tax benefits from stock option exercises provide a portion of the funding for repurchase activity.

The impact on financing cash flows of commercial paper and notes payable repayments, long-term debt borrowings and long-term debt repayments, are shown in the following table:

(millions)	2017	2016	2015	Dollar Change 2017	Dollar Change 2016
Net repayments of commercial paper and notes payable	**$(43.7)**	$(606.4)	$(312.1)	**$562.7**	$(294.3)
Long-term debt borrowings	**1,309.4**	2,390.0	1,223.7	**(1,080.6)**	1,166.3
Long-term debt repayments	**(799.0)**	(1,569.6)	(1,034.7)	**770.6**	(534.9)

In December 2017, we increased our indicated annual dividend rate by 11%. This represents the 26th consecutive year we have increased our dividend. We have paid dividends on our common stock for 81 consecutive years. Cash dividends declared per share of common stock, by quarter, for each of the last three years were as follows :

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Year
2017	**$0.370**	**$0.370**	**$0.370**	**$0.410**	**$1.520**
2016	0.350	0.350	0.350	0.370	1.420
2015	0.330	0.330	0.330	0.350	1.340

Liquidity and Capital Resources

We currently expect to fund all of our cash requirements which are reasonably foreseeable for 2018, including scheduled debt repayments, new investments in the business, share repurchases, dividend payments, possible business acquisitions and pension contributions, with cash from operating activities, and as needed, additional short-term and/or long-term borrowings. We continue to expect our operating cash flow to remain strong.

As of December 31, 2017, we had $211 million of cash and cash equivalents on hand, of which $151 million was held outside of the U.S.

As of December 31, 2016, we had $327 million of cash and cash equivalents on hand, of which $184 million was held outside of the U.S.

As of December 31, 2015, we had $26 million of deferred tax liabilities for pre-acquisition foreign earnings associated with the legacy Nalco entities and legacy Champion entities that we intended to repatriate. These liabilities were recorded as part of the respective purchase price accounting of each transaction. The remaining foreign earnings were repatriated in 2016, reducing the deferred tax liabilities to zero at December 31, 2016.

As of December 31, 2017 we had a $2.0 billion multi-year credit facility, which expires in November 2022. The credit facility has been established with a diverse syndicate of banks. There were no borrowings under our credit facility as of December 31, 2017 or 2016.

The credit facility supports our $2.0 billion U.S. commercial paper program and $2.0 billion European commercial paper program. Combined borrowing under these two commercial paper programs may not exceed $2.0 billion. At year-end, we had no amount outstanding under the European commercial paper program and no amount outstanding under the U.S. commercial paper program.

Additionally, we have uncommitted credit lines of $660 million with major international banks and financial institutions to support our general global funding needs. Most of these lines are used to support global cash pooling structures. Approximately $643 million of these credit lines were available for use as of year-end 2017. Bank supported letters of credit, surety bonds and guarantees total $198 million and represent commercial business transactions. We do not have any other significant unconditional purchase obligations or commercial commitments .

As of December 31, 2017, our short-term borrowing program was rated A-2 by Standard & Poor’s and P-2 by Moody’s.
As of December 31, 2017, Standard & Poor’s and Moody’s rated our long-term credit at A- (stable outlook) and Baa1 (stable outlook), respectively. A reduction in our credit ratings could limit or preclude our ability to issue commercial paper under our current programs, or could also adversely affect our ability to renew existing, or negotiate new, credit facilities in the future and could increase the cost of these facilities. Should this occur, we could seek additional sources of funding, including issuing additional term notes or bonds. In addition, we have the ability, at our option, to draw upon our $2.0 billion of committed credit facility.

We are in compliance with our debt covenants and other requirements of our credit agreements and indentures.

A schedule of our various obligations as of December 31, 2017 are summarized in the following table :

		Payments Due by Period			
(millions)	Total	Less Than 1 Year	2-3 Years	4-5 Years	More Than 5 Years
Notes payable	$ 15	$ 15	$ -	$ -	$ -
One-time transition tax	160	13	26	26	95
Long-term debt	7,303	549	696	1,513	4,545
Capital lease obligations	5	1	1	1	2
Operating leases	617	131	211	160	115
Interest*	2,753	242	436	375	1,700
Total	$ 10,853	$ 951	$ 1,370	$ 2,075	$ 6,457

* Interest on variable rate debt was calculated using the interest rate at year-end 2017.

During the fourth quarter of 2017, we recorded a one-time transition tax related to enactment of the Tax Act. The expense is primarily related to the one-time transition tax, which is payable over eight years. As discussed further in Note 12, this balance is a provisional amount and is subject to adjustment during the measurement period of up to one year following the enactment of the Tax Act, as provided by recent SEC guidance.

As of December 31, 2017, our gross liability for uncertain tax positions was $68 million. We are not able to reasonably estimate the amount by which the liability will increase or decrease over an extended period of time or whether a cash settlement of the liability will be required. Therefore, these amounts have been excluded from the schedule of contractual obligations.

We do not have required minimum cash contribution obligations for our qualified pension plans in 2018. We are required to fund certain international pension benefit plans in accordance with local legal requirements. We estimate contributions to be made to our international plans will approximate $49 million in 2018. These amounts have been excluded from the schedule of contractual obligations.

We lease certain sales and administrative office facilities, distribution centers, research and manufacturing facilities and other equipment under longer-term operating leases. Vehicle leases are generally shorter in duration. Vehicle leases have guaranteed residual value requirements that have historically been satisfied primarily by the proceeds on the sale of the vehicles.

Off-Balance Sheet Arrangements

Other than operating leases, as discussed further in Note 13, we do not participate in off-balance sheet financing arrangements. Through the normal course of business, we have established various joint ventures that have not been consolidated within our financial statements as we are not the primary beneficiary. The joint ventures help us meet local ownership requirements, achieve quicker operational scale, expand our ability to provide customers a more fully integrated offering or provide other benefits to our business or customers. These entities have not been utilized as special purposes entities, which are sometimes established for the purpose of facilitating off-balance sheet financial arrangements or other contractually narrow or limited purposes. As such, we are not exposed to financing, liquidity, market or credit risk that could arise if we had engaged in such relationships .

Market Risk

We enter into contractual arrangements (derivatives) in the ordinary course of business to manage foreign currency exposure and interest rate risks. We do not enter into derivatives for speculative or trading purposes. Our use of derivatives is subject to internal policies that provide guidelines for control, counterparty risk, and ongoing monitoring and reporting, and is designed to reduce the volatility associated with movements in foreign exchange and interest rates on our income statement and cash flows.

We enter into foreign currency forward contracts to hedge certain intercompany financial arrangements, and to hedge against the effect of exchange rate fluctuations on transactions related to cash flows denominated in currencies other than U.S. dollars. We use net investment hedges as hedging instruments to manage risks associated with our investments in foreign operations. As of December 31, 2017, we had a total of €1,150 million senior notes designated as net investment hedges.

We manage interest expense using a mix of fixed and floating rate debt. To help manage borrowing costs, we may enter into interest rate swap agreements. Under these arrangements, we agree to exchange, at specified intervals, the difference between fixed and floating interest amounts calculated by reference to an agreed-upon notional principal amount. As of December 31, 2017, we had interest rate swaps outstanding with notional values of $950 million.

See Note 8 for further information on our hedging activity.

Based on a sensitivity analysis (assuming a 10% adverse change in market rates) of our foreign exchange and interest rate derivatives and other financial instruments, changes in exchange rates or interest rates would increase/decrease our financial position and liquidity by approximately $322 million. The effect on our results of operations would be substantially offset by the impact of the hedged items .

GLOBAL ECONOMIC AND POLITICAL ENVIRONMENT

Energy Markets

Approximately 23% of our sales are generated from our Global Energy segment, the results of which, as noted further below, are subject to volatility in the oil and gas commodity markets.

During 2017, oil industry activity gradually recovered from 2016's lows, with strong gains in North America drilling activity over the past year and related recovering capital expenditure trends. Demand for oil and overall energy consumption has shown modest growth with oil prices rising from their lows in early 2016.

Our global footprint and broad business portfolio within the Global Energy segment, as well as our strong execution capabilities are expected to provide the required resilience to outperform in the current market. As such, we continue to remain confident in the long-term growth prospects of the segment.

Global Economies

Approximately half of our sales are outside of the United States. Our international operations subject us to changes in economic conditions and foreign currency exchange rates as well as political uncertainty in some countries which could impact future operating results.

Brexit Referendum

On March 29, 2017, the United Kingdom ("U.K.") government gave formal notice to the European Union ("EU") to begin the process of negotiating the U.K.'s exit ("Brexit") from the EU. The effects of Brexit will depend on any agreements the U.K. makes to retain access to the EU markets either during a transitional period or more permanently. The negotiations might also impact various tax reliefs and exemptions that apply to transactions between the U.K. and EU. In the longer term, any impact from Brexit on our U.K. operations will depend, in part, on the outcome of tariff, trade, regulatory, and other negotiations. We will continue to monitor the status of tax law changes and tax treaty negotiations at the U.K. and EU.

During 2017, net sales of our U.K. operations were approximately 2% of our consolidated net sales.

NEW ACCOUNTING PRONOUNCEMENTS

Information regarding new accounting pronouncements is included in Note 2.

NON-GAAP FINANCIAL MEASURES

This MD&A includes financial measures that have not been calculated in accordance with U.S. GAAP. These non-GAAP measures include:

- Fixed currency sales
- Acquisition adjusted fixed currency sales
- Adjusted cost of sales
- Adjusted gross margin
- Fixed currency operating income
- Fixed currency operating income margin
- Adjusted operating income
- Adjusted operating income margin
- Adjusted fixed currency operating income
- Adjusted fixed currency operating income margin
- Acquisition adjusted fixed currency operating income
- Acquisition adjusted fixed currency operating income margin
- EBITDA
- Adjusted EBITDA
- Adjusted tax rate
- Adjusted net income attributable to Ecolab
- Adjusted diluted EPS
- Adjusted interest expense, net

We provide these measures as additional information regarding our operating results. We use these non-GAAP measures internally to evaluate our performance and in making financial and operational decisions, including with respect to incentive compensation. We believe that our presentation of these measures provides investors with greater transparency with respect to our results of operations and that these measures are useful for period-to-period comparison of results.

Our non-GAAP financial measures for cost of sales, gross margin, interest expense and operating income exclude the impact of special (gains) and charges, and our non-GAAP measures for tax rate, net income attributable to Ecolab and diluted EPS further exclude the impact of discrete tax items. We include items within special (gains) and charges and discrete tax items that we believe can significantly affect the period-over-period assessment of operating results and not necessarily reflect costs and/or income associated with historical trends and future results. After tax special (gains) and charges are derived by applying the applicable local jurisdictional tax rate to the corresponding pre-tax special (gains) and charges.

EBITDA is defined as the sum of net income including non-controlling interest, provision for income taxes, net interest expense, depreciation and amortization. Adjusted EBITDA is defined as the sum of EBITDA and special (gains) and charges impacting EBITDA. EBITDA and adjusted EBITDA are used as inputs to our net debt to EBITDA and net debt to adjusted EBITDA ratios. We view these ratios as important indicators of the operational and financial health of our organization.

We evaluate the performance of our international operations based on fixed currency rates of foreign exchange. Fixed currency amounts included in this Form 10-K are based on translation into U.S. dollars at the fixed foreign currency exchange rates established by management at the beginning of 2017. Fixed currency amounts also reflect all Venezuelan bolivar operations, prior to the deconsolidation of our Venezuelan operations, at a SIMADI rate of approximately 200 bolivares to 1 U.S. dollar, which was the approximate conversion rate for SIMADI at year end 2015.

Acquisition adjusted growth rates exclude the results of our acquired businesses from the first twelve months post acquisition, exclude the results of our divested businesses from the twelve months prior to divestiture, and exclude the Venezuelan results of operations from both the current period and comparable period of the prior year.

These non-GAAP measures are not in accordance with, or an alternative to U.S. GAAP, and may be different from non-GAAP measures used by other companies. Investors should not rely on any single financial measure when evaluating our business. We recommend that investors view these measures in conjunction with the U.S. GAAP measures included in this MD&A and we have provided reconciliations of reported U.S. GAAP amounts to the non-GAAP amounts.

Item 7A. Quantitative and Qualitative Disclosures about Market Risk .

The discussion under the heading entitled "Market Risk" and “Global Economic and Political Environment” is incorporated by reference from Part II, Item 7 of this Form 10-K.

Item 8. Financial Statements and Supplementary Data .

REPORTS OF MANAGEMENT

To our Shareholders:

Management’s Responsibility for Financial Statements

Management is responsible for the integrity and objectivity of the consolidated financial statements. The statements have been prepared in accordance with accounting principles generally accepted in the United States of America and, accordingly, include certain amounts based on management’s best estimates and judgments.

The Board of Directors, acting through its Audit Committee composed solely of independent directors, is responsible for determining that management fulfills its responsibilities in the preparation of financial statements and maintains internal control over financial reporting. The Audit Committee recommends to the Board of Directors the appointment of the Company’s independent registered public accounting firm, subject to ratification by the shareholders. It meets regularly with management, the internal auditors and the independent registered public accounting firm.

The independent registered public accounting firm has audited the consolidated financial statements included in this annual report and have expressed their opinion regarding whether these consolidated financial statements present fairly in all material respects our financial position and results of operation and cash flows as stated in their report presented separately herein.

Management’s Report on Internal Control Over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rule 13a-15(f). Under the supervision and with the participation of management, including the principal executive officer and principal financial officer, an evaluation of the design and operating effectiveness of internal control over financial reporting was conducted based on the 2013 framework in Internal Control — Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on the evaluation under the framework in Internal Control — Integrated Framework, management concluded that internal control over financial reporting was effective as of December 31, 2017.

The Company’s independent registered public accounting firm, PricewaterhouseCoopers LLP, has audited the effectiveness of the Company’s internal control over financial reporting as of December 31, 2017 as stated in their report which is included herein.

Douglas M. Baker, Jr.
Chairman and Chief Executive Officer

Daniel J. Schmechel
Chief Financial Officer and Treasurer

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Shareholders and Board of Directors of Ecolab Inc.:

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Ecolab Inc. and its subsidiaries as of December 31, 2017 and 2016, and the related consolidated statements of income, comprehensive income, equity and cash flows for each of the three years in the period ended December 31, 2017, including the related notes (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2017, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2017 and 2016, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2017 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2017, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) ("PCAOB") and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

PricewaterhouseCoopers LLP

PricewaterhouseCoopers LLP
Minneapolis, Minnesota
February 23, 2018

We have served as the Company's auditor since 1970.

CONSOLIDATED STATEMENT OF INCOME

Year ended December 31, (millions, except per share amounts)	2017	2016	2015
Net sales	$13,838.3	$13,152.8	$13,545.1
Operating expenses			
Cost of sales (including special charges (a))	7,405.1	6,898.9	7,223.5
Selling, general and administrative expenses	4,417.1	4,299.4	4,345.5
Special (gains) and charges	(3.7)	39.5	414.8
Operating income	2,019.8	1,915.0	1,561.3
Interest expense, net (including special charges (b))	255.0	264.6	243.6
Income before income taxes	1,764.8	1,650.4	1,317.7
Provision for income taxes	242.4	403.3	300.5
Net income including noncontrolling interest	1,522.4	1,247.1	1,017.2
Net income attributable to noncontrolling interest (including special charges (c))	14.0	17.5	15.1
Net income attributable to Ecolab	$1,508.4	$1,229.6	$1,002.1
Earnings attributable to Ecolab per common share			
Basic	$ 5.21	$ 4.20	$ 3.38
Diluted	$ 5.13	$ 4.14	$ 3.32
Dividends declared per common share	$1.520	$1.420	$1.340
Weighted-average common shares outstanding			
Basic	289.6	292.5	296.4
Diluted	294.0	296.7	301.4

(a) Cost of sales includes special charges of $44.0 in 2017, $66.0 in 2016, and $80.6 in 2015, respectively.
(b) Interest expense, net includes special charges of $21.9 in 2017.
(c) Net income attributable to noncontrolling interest includes special charges of $12.8 in 2015.

The accompanying notes are an integral part of the consolidated financial statements.

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

Year ended December 31, (millions)	2017	2016	2015
Net income including noncontrolling interest	$1,522.4	$1,247.1	$1,017.2
Other comprehensive income (loss), net of tax			
Foreign currency translation adjustments			
Foreign currency translation	209.1	(230.4)	(626.8)
Gain (loss) on net investment hedges	(109.7)	(2.5)	101.3
Reclassification associated with Venezuelan entities	-	-	2.4
	99.4	(232.9)	(523.1)
Derivatives and hedging instruments	(17.9)	(17.5)	11.7
Pension and postretirement benefits			
Current period net actuarial loss	(33.4)	(102.3)	(2.3)
Pension and postretirement prior period service costs and benefits adjustments	(0.5)	7.7	4.5
Amortization of net actuarial loss and prior service costs included in net periodic pension and postretirement costs	24.7	20.2	33.6
Postretirement benefits changes	-	33.9	-
Reclassification associated with Venezuelan entities	-	-	2.2
	(9.2)	(40.5)	38.0
Subtotal	72.3	(290.9)	(473.4)
Total comprehensive income, including noncontrolling interest	1,594.7	956.2	543.8
Comprehensive income attributable to noncontrolling interest	15.7	16.2	13.1
Comprehensive income attributable to Ecolab	$1,579.0	$940.0	$530.7

The accompanying notes are an integral part of the consolidated financial statements.

CONSOLIDATED BALANCE SHEET

December 31, (millions, except per share amounts)	2017	2016
ASSETS		
Current assets		
Cash and cash equivalents	$211.4	$327.4
Accounts receivable, net	2,574.1	2,341.2
Inventories	1,445.9	1,319.4
Other current assets	365.0	291.4
Total current assets	4,596.4	4,279.4
Property, plant and equipment, net	3,707.1	3,365.0
Goodwill	7,167.1	6,383.0
Other intangible assets, net	4,017.6	3,817.8
Other assets	474.2	485.0
Total assets	$19,962.4	$18,330.2
LIABILITIES AND EQUITY		
Current liabilities		
Short-term debt	$564.4	$541.3
Accounts payable	1,177.1	983.2
Compensation and benefits	549.4	516.3
Income taxes	183.6	87.4
Other current liabilities	957.3	891.2
Total current liabilities	3,431.8	3,019.4
Long-term debt	6,758.3	6,145.7
Postretirement health care and pension benefits	1,025.5	1,019.2
Deferred income taxes	642.8	970.2
Other liabilities	415.3	204.8
Total liabilities	12,273.7	11,359.3
Equity (a)		
Common stock	354.7	352.6
Additional paid-in capital	5,435.7	5,270.8
Retained earnings	8,045.4	6,975.0
Accumulated other comprehensive loss	(1,642.3)	(1,712.9)
Treasury stock	(4,575.0)	(3,984.4)
Total Ecolab shareholders' equity	7,618.5	6,901.1
Noncontrolling interest	70.2	69.8
Total equity	7,688.7	6,970.9
Total liabilities and equity	$19,962.4	$18,330.2

(a) Common stock, 800.0 million shares authorized, $1.00 par value, 289.3 million shares outstanding at December 31, 2017, 291.8 million shares outstanding at December 31, 2016. Shares outstanding are net of treasury stock.

The accompanying notes are an integral part of the consolidated financial statements.

CONSOLIDATED STATEMENT OF CASH FLOWS

Year ended December 31, (millions)	2017	2016	2015
OPERATING ACTIVITIES			
Net income including noncontrolling interest	$1,522.4	$1,247.1	$1,017.2
Adjustments to reconcile net income to cash provided by operating activities:			
Depreciation	585.7	561.0	559.5
Amortization	307.6	289.7	300.0
Deferred income taxes	(354.5)	(90.6)	(244.5)
Share-based compensation expense	90.5	85.7	78.2
Excess tax benefits from share-based payment arrangements	-	(43.6)	(57.8)
Pension and postretirement plan contributions	(144.1)	(211.8)	(64.9)
Pension and postretirement plan expense	36.9	54.1	113.8
Restructuring charges, net of cash paid	5.2	(60.5)	38.4
Venezuelan charges	-	-	289.3
(Gain) Loss on sale of business	(50.6)	(0.5)	13.7
Asset charges and write-downs	15.1	65.9	24.7
Other, net	37.4	14.2	11.6
Changes in operating assets and liabilities, net of effect of acquisitions:			
Accounts receivable	(91.8)	0.9	(24.0)
Inventories	(85.5)	18.8	(48.6)
Other assets	(48.9)	(34.9)	(69.1)
Accounts payable	121.1	(55.1)	(46.1)
Other liabilities	144.8	99.3	108.4
Cash provided by operating activities	2,091.3	1,939.7	1,999.8
INVESTING ACTIVITIES			
Capital expenditures	(789.6)	(707.4)	(771.0)
Capitalized software expenditures	(79.0)	(49.4)	(44.2)
Property and other assets sold	10.7	30.5	15.0
Acquisitions and investments in affiliates, net of cash acquired	(989.2)	(49.5)	(265.9)
Divestiture of businesses	118.8	0.9	0.5
Release from (deposit into) acquisition related escrow	(0.8)	-	45.6
Reduction of cash due to Venezuelan deconsolidation	-	-	(4.2)
Restricted cash activity	53.8	(55.9)	-
Settlement of net investment hedges	2.1	1.3	108.4
Cash used for investing activities	(1,673.2)	(829.5)	(915.8)
FINANCING ACTIVITIES			
Net repayments of commercial paper and notes payable	(43.7)	(606.4)	(312.1)
Long-term debt borrowings	1,309.4	2,390.0	1,223.7
Long-term debt repayments	(799.0)	(1,569.6)	(1,034.7)
Reacquired shares	(600.3)	(739.6)	(755.1)
Dividends paid	(448.7)	(427.5)	(400.7)
Exercise of employee stock options	83.8	76.8	83.1
Excess tax benefits from share-based payment arrangements	-	43.6	57.8
Acquisition related liabilities and contingent consideration	(8.5)	(35.5)	(12.9)
Other, net	(15.7)	-	-
Cash used for financing activities	(522.7)	(868.2)	(1,150.9)
Effect of exchange rate changes on cash and cash equivalents	(11.4)	(7.4)	(49.9)
(Decrease) increase in cash and cash equivalents	(116.0)	234.6	(116.8)
Cash and cash equivalents, beginning of period	327.4	92.8	209.6
Cash and cash equivalents, end of period	$211.4	$327.4	$92.8
SUPPLEMENTAL CASH FLOW INFORMATION			
Income taxes paid	$402.8	$359.1	$533.1
Interest paid	239.3	267.0	237.2

The accompanying notes are an integral part of the consolidated financial statements.

CONSOLIDATED STATEMENT OF EQUITY

(millions)	Ecolab Shareholders: Common Stock	Additional Paid-in Capital	Retained Earnings	OCI (Loss)	Treasury Stock	Ecolab Shareholders' Equity	Non-Controlling Interest	Total Equity
Balance, December 31, 2014	$347.7	$4,874.5	$5,555.1	$(951.9)	$(2,509.5)	$7,315.9	$66.2	$7,382.1
Net income			1,002.1			1,002.1	15.1	1,017.2
Comprehensive income (loss) activity				(471.4)		(471.4)	(2.0)	(473.4)
Cash dividends declared			(396.9)			(396.9)	(8.3)	(405.2)
Venezuela deconsolidation							(0.5)	(0.5)
Stock options and awards	2.6	205.4			7.3	215.3		215.3
Reacquired shares		6.2			(761.3)	(755.1)		(755.1)
Balance, December 31, 2015	350.3	5,086.1	6,160.3	(1,423.3)	(3,263.5)	6,909.9	70.5	6,980.4
Net income			1,229.6			1,229.6	17.5	1,247.1
Comprehensive income (loss) activity				(289.6)		(289.6)	(1.3)	(290.9)
Cash dividends declared			(414.9)			(414.9)	(16.9)	(431.8)
Stock options and awards	2.3	200.2			3.2	205.7		205.7
Reacquired shares		(15.5)			(724.1)	(739.6)		(739.6)
Balance, December 31, 2016	352.6	5,270.8	6,975.0	(1,712.9)	(3,984.4)	6,901.1	69.8	6,970.9
New accounting guidance adoption (a)			**1.9**			**1.9**		**1.9**
Net income			**1,508.4**			**1,508.4**	**14.0**	**1,522.4**
Comprehensive income (loss) activity				**70.6**		**70.6**	**1.7**	**72.3**
Cash dividends declared			**(439.9)**			**(439.9)**	**(19.3)**	**(459.2)**
Acquisition of noncontrolling interests							**4.0**	**4.0**
Stock options and awards	**2.1**	**170.3**			**4.3**	**176.7**		**176.7**
Reacquired shares		**(5.4)**			**(594.9)**	**(600.3)**		**(600.3)**
Balance, December 31, 2017	**$354.7**	**$5,435.7**	**$8,045.4**	**$(1,642.3)**	**$(4,575.0)**	**$7,618.5**	**$70.2**	**$7,688.7**

(a) Upon adoption of ASU 2016-09, Compensation – Stock Compensation, a valuation allowance was released for previously unrecognized excess tax benefits resulting in an adjustment to beginning retained earnings.

COMMON STOCK ACTIVITY

	2017		2016		2015	
Year ended December 31(shares)	Common Stock	Treasury Stock	Common Stock	Treasury Stock	Common Stock	Treasury Stock
Shares, beginning of year	**352,607,741**	**(60,782,667)**	350,339,820	(54,372,729)	347,724,788	(47,872,332)
Stock options	**1,714,214**	**41,767**	1,778,821	58,969	1,962,360	151,261
Stock awards	**393,941**	**55,431**	489,100	14,291	652,672	14,745
Reacquired shares	**-**	**(4,707,629)**		(6,483,198)		(6,666,403)
Shares, end of year	**354,715,896**	**(65,393,098)**	352,607,741	(60,782,667)	350,339,820	(54,372,729)

The accompanying notes are an integral part of the consolidated financial statements.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. NATURE OF BUSINESS

Ecolab is the global leader in water, hygiene and energy technologies and services that protect people and vital resources. The Company delivers comprehensive solutions and on-site service to promote safe food, maintain clean environments, optimize water and energy use and improve operational efficiencies for customers in the food, healthcare, energy, hospitality and industrial markets in more than 170 countries.

The Company's cleaning and sanitizing programs and products and pest elimination services support customers in the foodservice, food and beverage processing, hospitality, healthcare, government and education, retail, textile care and commercial facilities management sectors. The Company's products and technologies are also used in water treatment, pollution control, energy conservation, oil production and refining, steelmaking, papermaking, mining and other industrial processes.

2. SIGNIFICANT ACCOUNTING POLICIES

Principles of Consolidation

The consolidated financial statements include the accounts of the Company and all subsidiaries in which the Company has a controlling financial interest. Investments in companies, joint ventures or partnerships in which the Company does not have control, but has the ability to exercise significant influence over operating and financial policies, are reported using the equity method. Effective as of the end of the fourth quarter of 2015, the Company determined it did not meet the accounting criteria for control over its Venezuelan subsidiaries. Therefore, the Company deconsolidated its Venezuelan subsidiaries effective as of the end of the fourth quarter of 2015, and began accounting for the investments in its Venezuelan subsidiaries using the cost method of accounting, effective in the first quarter of 2016. The cost method of accounting is used in circumstances where the Company has no substantial influence over the investee, and the investment has no easily determinable fair value. International subsidiaries are included in the financial statements on the basis of their U.S. GAAP November 30 fiscal year-ends to facilitate the timely inclusion of such entities in the Company's consolidated financial reporting. All intercompany transactions and profits are eliminated in consolidation.

Use of Estimates

The preparation of the Company's financial statements requires management to make certain estimates and assumptions that affect the reported amounts of assets and liabilities as of the date of the financial statements and the reported amounts of revenues and expenses during the reporting periods. Actual results could differ from these estimates. The Company's critical accounting estimates include revenue recognition, valuation allowances and accrued liabilities, actuarially determined liabilities, restructuring, income taxes and long-lived assets, intangible assets and goodwill.

Foreign Currency Translation

Financial position and reported results of operations of the Company's non-U.S. dollar functional international subsidiaries are measured using local currencies as the functional currency. Assets and liabilities of these operations are translated at the exchange rates in effect at each fiscal year end. The translation adjustments related to assets and liabilities that arise from the use of differing exchange rates from period to period are included in accumulated other comprehensive income (loss) in shareholders' equity. Income statement accounts are translated at average rates of exchange prevailing during the year. As discussed in Note 17 Operating Segments and Geographic Information, the Company evaluates its international operations based on fixed rates of exchange; however, the different exchange rates from period to period impact the amount of reported income from consolidated operations.

Concentration of Credit Risk

Credit risk represents the accounting loss that would be recognized at the reporting date if counterparties failed to perform as contracted. The Company believes the likelihood of incurring material losses due to concentration of credit risk is remote. The principal financial instruments subject to credit risk are as follows:

Cash and Cash Equivalents - The Company maintains cash deposits with major banks, which from time to time may exceed insured limits. The possibility of loss related to financial condition of major banks has been deemed minimal. Additionally, the Company's investment policy limits exposure to concentrations of credit risk and changes in market conditions.

Accounts Receivable - A large number of customers in diverse industries and geographies, as well as the practice of establishing reasonable credit lines, limits credit risk. Based on historical trends and experiences, the allowance for doubtful accounts is adequate to cover potential credit risk losses.

Foreign Currency and Interest Rate Contracts and Derivatives - Exposure to credit risk is limited by internal policies and active monitoring of counterparty risks. In addition, the Company uses a diversified group of major international banks and financial institutions as counterparties. The Company does not anticipate nonperformance by any of these counterparties.

Cash and Cash Equivalents

Cash equivalents include highly-liquid investments with a maturity of three months or less when purchased.

Accounts Receivable and Allowance For Doubtful Accounts

Accounts receivable are carried at the invoiced amounts, less an allowance for doubtful accounts, and generally do not bear interest. The Company estimates the balance of allowance for doubtful accounts by analyzing accounts receivable balances by age and applying historical write-off and collection trend rates. The Company's estimates include separately providing for customer receivables based on specific circumstances and credit conditions, and when it is deemed probable that the balance is uncollectible. Account balances are written off against the allowance when it is determined the receivable will not be recovered.

The Company's allowance for doubtful accounts balance also includes an allowance for the expected return of products shipped and credits related to pricing or quantities shipped of $15 million, $14 million and $15 million as of December 31, 2017, 2016, and 2015, respectively. Returns and credit activity is recorded directly to sales as a reduction.

The following table summarizes the activity in the allowance for doubtful accounts:

(millions)	**2017**	2016	2015
Beginning balance	**$67.6**	$75.3	$77.5
Bad debt expense	**17.1**	20.1	25.8
Write-offs	**(15.7)**	(24.6)	(21.9)
Other (a)	**2.5**	(3.2)	(6.1)
Ending balance	**$71.5**	$67.6	$75.3

(a) Other amounts are primarily the effects of changes in currency translations and the impact of allowance for returns and credits.

Inventory Valuations

Inventories are valued at the lower of cost or net realizable value. Certain U.S. inventory costs are determined on a last-in, first-out ("LIFO") basis. LIFO inventories represented 39% and 40% of consolidated inventories as of December 31, 2017 and 2016, respectively. All other inventory costs are determined using either the average cost or first-in, first-out ("FIFO") methods. Inventory values at FIFO, as shown in Note 5, approximate replacement cost.

Property, Plant and Equipment

Property, plant and equipment assets are stated at cost. Merchandising and customer equipment consists principally of various dispensing systems for the Company's cleaning and sanitizing products, dishwashing machines and process control and monitoring equipment. Certain dispensing systems capitalized by the Company are accounted for on a mass asset basis, whereby equipment is capitalized and depreciated as a group and written off when fully depreciated. The Company capitalizes both internal and external costs of development or purchase of computer software for internal use. Costs incurred for data conversion, training and maintenance associated with capitalized software are expensed as incurred. Expenditures for major renewals and improvements, which significantly extend the useful lives of existing plant and equipment, are capitalized and depreciated. Expenditures for repairs and maintenance are charged to expense as incurred. Upon retirement or disposition of plant and equipment, the cost and related accumulated depreciation are removed from the accounts and any resulting gain or loss is recognized in income.

Depreciation is charged to operations using the straight-line method over the assets' estimated useful lives ranging from 5 to 40 years for buildings and leasehold improvements, 3 to 20 years for machinery and equipment, 3 to 15 years for merchandising and customer equipment and 3 to 7 years for capitalized software. The straight-line method of depreciation reflects an appropriate allocation of the cost of the assets to earnings in proportion to the amount of economic benefits obtained by the Company in each reporting period. Depreciation expense was $586 million, $561 million and $560 million for 2017, 2016 and 2015, respectively.

Goodwill and Other Intangible Assets

Goodwill

Goodwill represents the excess of the purchase price over the fair value of identifiable net assets acquired in a business combination. The Company's reporting units are its operating segments.

During the second quarter of 2017, the Company completed its scheduled annual assessment for goodwill impairment across its eleven reporting units through a quantitative analysis, utilizing a discounted cash flow approach, which incorporates assumptions regarding future growth rates, terminal values, and discount rates. The two-step quantitative process involved comparing the estimated fair value of each reporting unit to the reporting unit's carrying value, including goodwill. If the fair value of a reporting unit exceeds its carrying value, goodwill of the reporting unit is considered not to be impaired, and the second step of the impairment test is unnecessary. If the carrying amount of the reporting unit exceeds its fair value, the second step of the goodwill impairment test would be performed to measure the amount of impairment loss to be recorded, if any. The Company's goodwill impairment assessment for 2017 indicated the estimated fair value of each of its reporting units exceeded its carrying amount by a significant margin.

If circumstances change significantly, the Company would also test a reporting unit's goodwill for impairment during interim periods between its annual tests. There has been no impairment of goodwill in any of the years presented. In the fourth quarter of 2017, the Company sold the Equipment Care business, which was a reporting unit, and the goodwill associated with Equipment Care was disposed of upon sale. No other events occurred during the second half of 2017 that indicated a need to update the Company's conclusions reached during the second quarter of 2017.

The changes in the carrying amount of goodwill for each of the Company's reportable segments are as follows:

(millions)	Global Industrial	Global Institutional	Global Energy	Other	Total
December 31, 2015	$2,560.8	$662.7	$3,151.5	$115.8	$6,490.8
Segment change (a)	62.7	(62.7)	-	-	-
December 31, 2015 revised	$2,623.5	$600.0	$3,151.5	$115.8	$6,490.8
Current year business combinations (b)	-	3.1	0.6	-	3.7
Prior year business combinations (c)	3.5	-	0.1	-	3.6
Reclassifications (d)	3.5	(0.6)	(2.9)	-	-
Effect of foreign currency translation	(45.5)	(11.8)	(55.7)	(2.1)	(115.1)
December 31, 2016	$2,585.0	$590.7	$3,093.6	$113.7	$6,383.0
Current year business combinations (b)	**123.4**	**403.7**	**8.1**	**63.9**	**599.1**
Prior year business combinations (c)	**(0.2)**	**-**	**0.3**	**-**	**0.1**
Dispositions	**-**	**-**	**-**	**(42.6)**	**(42.6)**
Effect of foreign currency translation	**88.8**	**32.6**	**101.7**	**4.4**	**227.5**
December 31, 2017	**$2,797.0**	**$1,027.0**	**$3,203.7**	**$139.4**	**$7,167.1**

(a) Relates to establishment of the Life Sciences reporting unit in the first quarter of 2017, and goodwill being allocated to Life Sciences based on a fair value allocation of goodwill. The Life Sciences reporting unit is included in the Industrial reportable segment and is comprised of operations previously recorded in the Food & Beverage and Healthcare reporting units, which are aggregated and reported in the Global Industrial and Global Institutional reportable segments, respectively. See Note 17 for further information.
(b) For 2017, the Company expects $79.2 million of the goodwill related to businesses acquired to be tax deductible. For 2016, $3.0 million of the goodwill related to businesses acquired is expected to be tax deductible.
(c) Represents purchase price allocation adjustments for acquisitions deemed preliminary as of the end of the prior year.
(d) Represents immaterial reclassifications of beginning balances to conform to the current or prior year presentation due to customer reclassifications across reporting segments completed in the first quarter of the respective year.

Other Intangible Assets

The Nalco trade name is the Company's principal indefinite life intangible asset. During the second quarter of 2017, the Company completed its annual test for indefinite life intangible asset impairment using a relief from royalty method of assessment, which incorporates assumptions regarding future sales projections and discount rates. Based on this testing, the estimated fair value of the asset exceeded its carrying value by a significant margin, therefore, no adjustment to the $1.2 billion carrying value of this asset was necessary. Additionally, no events during the second half of 2017 indicated a need to update the Company's conclusions reached during the second quarter of 2017. There has been no impairment of the Nalco trade name intangible asset since it was acquired.

The Company's intangible assets subject to amortization primarily include customer relationships, trademarks, patents and other technology. The fair value of identifiable intangible assets is estimated based upon discounted future cash flow projections and other acceptable valuation methods. Other intangible assets are amortized on a straight-line basis over their estimated economic lives. The weighted-average useful life of amortizable intangible assets was 14 years as of both December 31, 2017 and 2016.

The weighted-average useful life by type of amortizable asset at December 31, 2017 is as follows:

(years)	
Customer relationships	14
Trademarks	14
Patents	14
Other technology	6

The straight-line method of amortization reflects an appropriate allocation of the cost of the intangible assets to earnings in proportion to the amount of economic benefits obtained by the Company in each reporting period. The Company evaluates the remaining useful life of its intangible assets that are being amortized each reporting period to determine whether events and circumstances warrant a change to the remaining period of amortization. If the estimate of an intangible asset's remaining useful life is changed, the remaining carrying amount of the intangible asset will be amortized prospectively over that revised remaining useful life. Total amortization expense related to other intangible assets during the last three years and future estimated amortization is as follows:

(millions)	
2015	$ 292
2016	290
2017	308
2018	315
2019	302
2020	297
2021	292
2022	286

Long-Lived Assets

The Company periodically reviews its long-lived and amortizable intangible assets for impairment and assesses whether significant events or changes in business circumstances indicate that the carrying value of the assets may not be recoverable. Such circumstances may include a significant decrease in the market price of an asset, a significant adverse change in the manner in which the asset is being used or in its physical condition or history of operating or cash flow losses associated with the use of an asset. An impairment loss may be recognized when the carrying amount of an asset exceeds the anticipated future undiscounted cash flows expected to result from the use of the asset and its eventual disposition. The amount of the impairment loss to be recorded, if any, is calculated by the excess of the asset's carrying value over its fair value. During 2017, the Company impaired certain long-lived assets related to a portion of one of its businesses. During 2016, the Company impaired certain long-lived assets related to a product line within one of its U.S. plants. In 2015, as part of the actions taken regarding its Venezuelan businesses, the Company wrote-off customer relationship intangible assets and other long-lived assets. See Note 3 for additional information regarding these asset impairments.

In addition, the Company periodically reassesses the estimated remaining useful lives of its long-lived assets. Changes to estimated useful lives would impact the amount of depreciation and amortization recorded in earnings. The Company has not experienced significant changes in the carrying value or estimated remaining useful lives of its long-lived or amortizable intangible assets.

Income Taxes

Income taxes are recognized during the period in which transactions enter into the determination of financial statement income, with deferred income taxes provided for the tax effect of temporary differences between the carrying amount of assets and liabilities and their tax bases. The Company records a valuation allowance to reduce its deferred tax assets when uncertainty regarding their realizability exists. The Company records liabilities for income tax uncertainties in accordance with the U.S. GAAP recognition and measurement criteria guidance.

On December 22, 2017, the President of the United States signed into law the Tax Cuts and Jobs Act (the “Act”), which reduces the U.S. federal corporate tax rate from 35% to 21%, requires companies to pay a one-time transition tax on earnings of certain foreign subsidiaries that were previously tax deferred and creates new taxes on certain foreign sourced earnings.

The Tax Act adds many new provisions including changes to bonus depreciation, the deduction for executive compensation and interest expense, a tax on global intangible low taxed income (GILTI), the base erosion anti abuse tax (BEAT) and a deduction for foreign derived intangible income (FDII). Some of these provisions, such as the tax on GILTI, may not apply to the Company with full effect until future years.

The SEC staff issued Staff Accounting Bulletin (SAB 118), which provides guidance on accounting for enactment effects of the Tax Act. SAB 118 provides a measurement period of up to one year from the Tax Act’s enactment date for companies to complete their accounting. In accordance with SAB 118, to the extent that a company’s accounting for certain income tax effects of the Tax Act is incomplete but it is able to determine a reasonable estimate, it must record a provisional estimate in the financial statements. If a company cannot determine a provisional estimate to be included in its financial statements, it should continue to account for the provisions of the tax laws that were in effect immediately before enactment of the Tax Act. The Company has reported provisional amounts for the income tax effects that included the reporting period the Tax Act was enacted.

The two principle elements impacting the 2017 financial statements are the reduction in the tax rate and the one-time tax that is imposed on our unremitted foreign earnings. The Company has accounted for the impacts of the Tax Act to the extent a reasonable estimate could be made, and will continue to refine its estimates throughout the measurement period or until the accounting is complete. The Company is assessing the impact of the provisions of the Act which impact the Company in future years, and has not made a reasonable estimate of its related effects.

See Note 12 for additional information regarding income taxes.

Share-Based Compensation

During the first quarter of 2017, the Company adopted the accounting guidance issued in March 2016 that amends certain aspects of share-based compensation for employees, including the accounting for income taxes, forfeitures, and statutory tax withholding requirements, as well as classifications on the Consolidated Statement of Cash Flows. Under the new guidance, all excess tax benefits or deficiencies are to be recognized prospectively as discrete income tax items on the Consolidated Statement of Income, while previous guidance required realized excess tax benefits or deficiencies to be recognized in additional paid-in capital. The Company recorded $39.7 million of excess tax benefits during 2017. The extent of excess tax benefits is subject to variation in stock price and stock option exercises. Adoption of the accounting standard also eliminated the requirement that excess tax benefits be realized before they can be recognized, and as a result, the Company recorded a $1.9 million cumulative-effect adjustment for previously unrecognized excess tax benefits.

The Company’s adoption also resulted in associated excess tax benefits being classified as an operating activity in the statement of cash flows prospectively beginning January 1, 2017 with no changes to the prior year. Based on the adoption methodology applied, employee taxes paid remain classified as a financing activity on the statement of cash flows, and the statement of cash flows classification of prior periods has not changed. With regards to forfeitures, the new guidance allows companies either to continue to estimate the number of awards that will be forfeited or to account for forfeitures as they occur. The Company has elected to continue to estimate the number of awards that will be forfeited based on an estimate of the number of outstanding awards expected to vest.

See Note 11 for additional information regarding equity compensation plans.

Restructuring Activities

The Company’s restructuring activities are associated with plans to enhance its efficiency, effectiveness and sharpen its competitiveness. These restructuring plans include net costs associated with significant actions involving employee-related severance charges, contract termination costs and asset write-downs and disposals. Employee termination costs are largely based on policies and severance plans, and include personnel reductions and related costs for severance, benefits and outplacement services. These charges are reflected in the quarter in which the actions are probable and the amounts are estimable, which typically is when management approves the associated actions. Contract termination costs include charges to terminate leases prior to the end of their respective terms and other contract termination costs. Asset write-downs and disposals include leasehold improvement write-downs, other asset write-downs associated with combining operations and disposal of assets.

See Note 3 for additional information regarding restructuring.

Revenue Recognition

The Company recognizes revenue on product sales at the time evidence of an arrangement exists, title to the product and risk of loss transfers to the customer, the price is fixed and determinable and collection is reasonably assured. The Company recognizes revenue on services as they are performed. While the Company employs a sales and service team to ensure customer's needs are best met in a high quality way, the majority of the Company's revenue is generated from product sales. The Company's service businesses and service offerings are discussed in Note 17.

The Company's sales policies do not provide for general rights of return. Estimates used in recognizing revenue include the delay between the time that products are shipped and when they are received by customers, when title transfers and the amount of credit memos issued in subsequent periods. The Company records estimated reductions to revenue for customer programs and incentive offerings, including pricing arrangements, promotions and other volume-based incentives at the time the sale is recorded. The Company also records estimated reserves for anticipated uncollectible accounts and for product returns and credits at the time of sale. Depending on market conditions, the Company may increase customer incentive offerings, which could reduce gross profit margins over the term of the incentive.

On January 1, 2018, the Company adopted Accounting Standards Committee 606 (ASC 606), Revenue from Contracts with Customers, which provides guidance on how revenue with customers should be recognized. See the "New Accounting Pronouncements" table within this Note for discussion on future changes to revenue recognition.

Earnings Per Common Share

The difference in the weighted average common shares outstanding for calculating basic and diluted earnings attributable to Ecolab per common share is a result of the dilution associated with the Company's equity compensation plans. As noted in the table below, certain stock options and units outstanding under these equity compensation plans were not included in the computation of diluted earnings attributable to Ecolab per common share because they would not have had a dilutive effect.

The computations of the basic and diluted earnings attributable to Ecolab per share amounts were as follows:

(millions, except per share)	**2017**	2016	2015
Net income attributable to Ecolab	**$1,508.4**	$1,229.6	$1,002.1
Weighted-average common shares outstanding			
Basic	**289.6**	292.5	296.4
Effect of dilutive stock options and units	**4.4**	4.2	5.0
Diluted	**294.0**	296.7	301.4
Basic EPS	**$ 5.21**	$ 4.20	$ 3.38
Diluted EPS	**$ 5.13**	$ 4.14	$ 3.32
Anti-dilutive securities excluded from the computation of EPS	**3.4**	3.6	3.5

Other Significant Accounting Policies

The following table includes a reference to additional significant accounting policies that are described in other notes to the financial statements, including the note number:

Policy	Note
Fair value measurements	7
Derivatives and hedging transactions	8
Share-based compensation	11
Research and development expenditures	14
Legal contingencies	15
Pension and post-retirement benefit plans	16
Reportable segments	17

New Accounting Pronouncements

Standard	Date of Issuance	Description	Required Date of Adoption	Effect on the Financial Statements
Standards that are not yet adopted:				
ASU 2018-02 - Income Statement—Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income	February 2018	Amends ASC 220 to allow entities to reclassify stranded tax effects resulting from the Tax Cut and Jobs Act ("the Act") from accumulated OCI to retained earnings. Tax effects stranded in OCI for reasons other than the impact of the Act cannot be reclassified.	January 1, 2019	The reclassification is optional and can be applied retrospectively or in the period of adoption. The Company is currently evaluating the impact of adoption.
ASU 2017-12 - Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities	August 2017	Amends the hedge accounting recognition and presentation requirements in ASC 815. Simplifies the guidance on the application of hedge accounting and the requirements for hedge documentation and effectiveness testing. Requires presentation of all items that affect earnings in the same income statement line as the hedged item.	January 1, 2019	The Company is currently evaluating the impact of adoption, and certain transition elections provided for by the ASU.
ASU 2017-09 - Compensation - Stock Compensation (Topic 718): Scope of Modification Accounting	May 2017	Clarifies the definition of what's considered a substantive modification related to a change in terms or conditions of a share-based payment award and when it's appropriate to apply modification accounting. The current definition of "modification" is too broad, resulting in diverse interpretations of what's considered a substantive modification.	January 1, 2018	This ASU must be applied prospectively to an award modified on or after the adoption date. The Company has not historically modified awards, and will apply the modification guidance prospectively.
ASU 2017-07 - Compensation - Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and the Net Periodic Postretirement Benefit Cost	March 2017	Amends the requirements related to income statement presentation of the components of net periodic benefit costs. New requirements include (1) disaggregate the current-service-cost component from the other components of net benefit cost (the "other components") and present it with other current compensation costs for related employees in the income statement and (2) present the other components elsewhere in the income statement and outside of income from operations if such a subtotal is presented.	January 1, 2018	Upon adoption of the standard, the Company will record only the service cost component with compensation cost in Cost of Sales and Selling, General, and Administrative costs. The other components of net period benefit cost will be presented below operating income. The Company will revise 2016 and 2017 financial statements, and as a result will reclassify $44 million and $67 million of income related to non-service components, respectively, below operating income.
ASU 2017-05 - Other Income - Gains and Losses from the Derecognition of Nonfinancial Assets (Topic 610-20): Clarifying the Scope of Asset Derecognition Guidance and Accounting for Partial Sales of Nonfinancial Assets	February 2017	Clarifies the scope of guidance on nonfinancial asset derecognition (ASC 610-20) including the accounting for partial sales of nonfinancial assets. The ASU defines "in-substance nonfinancial asset". Also clarifies the derecognition of all businesses should be accounted for in accordance with derecognition and deconsolidation guidance in 810-10.	January 1, 2018	The Company is required to apply this ASU on a retrospective basis. The Company is currently evaluating the impact of adoption. Adoption is not expected to have a material impact on the Company's financial statements.
ASU 2017-04 - Intangibles - Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment	January 2017	Simplifies subsequent measurement of goodwill by eliminating Step 2 from the goodwill impairment test. Step 2 measures a goodwill impairment loss by comparing the implied fair value of a reporting unit's goodwill with the carrying amount of that goodwill.	January 1, 2020	The ASU must be applied on a prospective basis upon adoption. Adoption of the ASU is not expected to have a material impact on the Company's financial statements.
ASU 2017-01 - Business Combinations (Topic 805): Clarifying the Definition of a Business	January 2017	Clarifies the definition of a business and provides guidance on whether transactions should be accounted for as acquisitions (or disposals) of assets or businesses.	January 1, 2018	The ASU must be applied prospectively on or after the effective date, and no disclosures are required at transition. The Company is currently evaluating the impact of adoption, and the ASU is not expected to have a material impact on the Company's financial statements.
ASU 2016-18 - Statement of Cash Flows (Topic 230): Restricted Cash	November 2016	Clarifies guidance on the classification and presentation of restricted cash in the statement of cash flows.	January 1, 2018	Presentation impact only related to restricted cash associated with the Anios acquisition. The Company will adopt the standard and restate the cash flow statement to align with the new guidance.

ASU 2016-16 - Income Taxes (Topic 740): Intra-Entity Transfers of Assets Other Than Inventory	October 2016	Simplifies the guidance on the accounting for the income tax consequences of intra-entity transfers of assets other than inventory (e.g. intellectual property).	January 1, 2018	This ASU must be applied on a modified retrospective basis through a cumulative-effect adjustment directly to retained earnings as of the beginning of the period of adoption. The Company has deferred tax impacts associated primarily with transferring intellectual property (IP) between entities, which will be recognized upon adoption. Upon adoption, the Company expects to recognize approximately $43 million to beginning retained earnings, and record deferred tax assets of $2 million.
ASU 2016-15 - Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments	August 2016	The guidance's objective is to reduce diversity in practice of how certain cash receipts and cash payments are presented and classified in the statement of cash flow.	January 1, 2018	Presentation impact only related to eight specific cash flow items. Adoption and restatement of the cash flow statement for the new standard is not expected to be material.
ASU 2016-13 - Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments	June 2016	Addresses the recognition, measurement, presentation and disclosure of credit losses on trade and reinsurance receivables, loans, debt securities, net investments in leases, off-balance-sheet credit exposures and certain other instruments. Amends guidance on reporting credit losses from an incurred model to an expected model for assets held at amortized cost, such as accounts receivable, loans and held-to-maturity debt securities. Additional disclosures will also be required.	January 1, 2020	Adoption of the standard will change how the allowance for trade and other receivables is calculated. The Company is currently evaluating the impact of adoption.
Lease ASUs: ASU 2016-02 - Leases (Topic 842) ASU 2018-01 - Leases (Topic 842): Land Easement Practical Expedient	Various	Introduces the recognition of lease assets and lease liabilities by lessees for those leases classified as operating leases under previous guidance.	January 1, 2019	See additional information regarding the impact of this guidance on the Company's financial statements at the bottom of this table in note (a).
Revenue Recognition ASUs: 2014-09 - Revenue from Contracts with Customers 2015-14 - Deferral of the Effective Date 2016-08 - Principal Versus Agent Considerations 2016-10 - Identifying Performance Obligations and Licensing 2016-11 - Revenue Recognition and Derivatives and Hedging 2016-12 - Narrow-Scope Improvements & Practical Expedients 2016-20 - Technical Corrections and Improvements	Various	Recognition standard contains principles for entities to apply to determine the measurement of revenue and timing of when the revenue is recognized. The underlying principle of the updated guidance will have entities recognize revenue to depict the transfer of goods or services to customers at an amount that is expected to be received in exchange for those goods or services.	January 1, 2018	See additional information regarding the impact of this guidance on the Company's financial statements at the bottom of this table in note (b).

(a) As part of implementing the new lease standard, the Company is in process of reviewing current accounting policies, developing future policies, and assessing the practical expedients allowed under the new accounting guidance and proposed under the FASB's tentative decision on November 29, 2017. The tentative decision relieves the requirements to restate comparative periods in the period of adoption and to separately disclose lease and nonlease components for lessor accounting when certain conditions are met. In addition, the project team is defining future processes to identify, accumulate, and report on the Company's various leases. The Company expects most of its operating lease commitments will be subject to the new standard and recognized as operating lease liabilities and right-of-use assets upon adoption and is currently evaluating other impacts on the consolidated financial statements. The standard currently requires a modified retrospective transition to be applied at the beginning of the earliest comparative period presented in the year of adoption; however, this requirement may be relieved based upon the tentative decision noted above.

(b) The Company adopted the new standard using the full retrospective method on January 1, 2018. The Company reached conclusions on key accounting assessments related to the standard and is finalizing the related accounting policies. The Company's evaluation of performance obligations within certain contracts identified additional performance obligations which relate to providing services to customers. These additional performance obligations, when aggregated with the service revenue that is currently reported are expected to represent more than 10% of consolidated net sales. The Company will separately report revenue from service and leases, "Service Revenue", from product revenues "Product Revenue" on the income statement. Additionally, certain costs currently classified in Selling, General, and Administrative expenses will be reclassified to Cost of Sales as they are tied to satisfaction of a service performance obligation. The impact of this reclassification is expected to be an increase in cost of sales, which is a decrease in gross margin of 400 bps – 600 bps. Adoption of the standard is not expected to have a material impact on net income or EPS. In addition to formalizing the additional disclosures associated with the new standard, the Company is finalizing the impact on the consolidated financial statements, including the impact of the prior year restatements.

Standard	Date of Issuance	Description	Date of Adoption	Effect on the Financial Statements
Standards that were adopted:				
ASU 2015-11 - Inventory (Topic 330): Simplifying the Measurement of Inventory	July 2015	The amendment requires entities to measure inventory under the FIFO or average cost methods at the lower of cost or net realizable value.	January 1, 2017	The adoption of the guidance did not have a material impact on the Company's financial statements.
ASU 2016-01 - Financial Instruments – Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities	January 2016	The amendment revises accounting related to the classification and measurement of investments in equity securities and the presentation of certain fair value changes for financial liabilities measured at fair value. The ASU also amends certain disclosure requirements associated with the fair value of financial instruments.	January 1, 2017	The adoption of the guidance did not have a material impact on the Company's financial statements.
ASU 2016-05 - Effect of Derivative Contract Novations on Existing Hedge Accounting Relationships	March 2016	The amendment clarifies language related to hedge accounting criteria that a change in the counterparty is not in and of itself considered a termination of the derivative or critical term of the hedging relationship.	January 1, 2017	The adoption of the guidance did not have a material impact on the Company's financial statements.
ASU 2016-07 - Investments - Equity Method and Joint Ventures: Simplifying the Transition to the Equity Method of Accounting	March 2016	Simplifies the transition to equity method accounting for entities that have an investment that becomes qualified for the equity method of accounting as a result of an increase in the level of ownership interest or degree of influence.	January 1, 2017	The adoption of the guidance did not have a material impact on the Company's financial statements.
ASU 2016-09 - Compensation—Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting	March 2016	The amendment includes provisions intended to simplify various aspects related to how share-based payments are accounted for and presented in the financial statements.	January 1, 2017	The Company included appropriate disclosures within the current year 10-K to adhere to this new ASU.
ASU 2017-03 - Accounting Changes and Error Corrections (Topic 250) and Investments-Equity Method and Joint Ventures (Topic 323)	January 2017	Amends the disclosure requirements associated with certain recently issued Accounting Standards and how they will have an impact on the Financial Statements of a registrant when such standards are adopted in a future period. It applies to ASU No. 2014-09, Revenue from Contracts with Customers (Topic 606); ASU No. 2016-02, Leases (Topic 842); and ASU No. 2016-13, Financial Instruments—Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments and any subsequent amendments to these ASU's.	Effective Immediately	The Company included appropriate disclosure requirements within this 10-K to adhere to this new ASU.

No other new accounting pronouncement issued or effective has had or is expected to have a material impact on the Company’s consolidated financial statements.

3. SPECIAL (GAINS) AND CHARGES

Special (gains) and charges reported on the Consolidated Statement of Income included the following:

(millions)	2017	2016	2015
Cost of sales			
Restructuring activities	$4.6	$(0.4)	$16.5
Acquisition and integration costs	13.2	-	-
Fixed asset impairment and other charges	26.2	10.0	24.7
Inventory costs and reserves	-	(6.2)	6.1
Energy related charges	-	62.6	-
Venezuela related activities	-	-	33.3
Subtotal	44.0	66.0	80.6
Special (gains) and charges			
Restructuring activities	39.9	(8.7)	83.8
Acquisition and integration costs	15.4	8.6	18.7
Gain on sale of business	(46.1)	-	-
Energy related charges	-	14.2	-
Venezuela related activities	(11.5)	(7.8)	256.0
Other	(1.4)	33.2	56.3
Subtotal	(3.7)	39.5	414.8
Operating income subtotal	40.3	105.5	495.4
Interest expense, net	21.9	-	-
Net income attributable to noncontrolling interest			
Restructuring activities	-	-	(1.7)
Venezuela related activities	-	-	(11.1)
Subtotal	-	-	(12.8)
Total special (gains) and charges	$62.2	$105.5	$482.6

For segment reporting purposes, special (gains) and charges are not allocated to reportable segments, which is consistent with the Company's internal management reporting .

Restructuring Activities

During the second quarter of 2017, the Company commenced restructuring and other cost-saving actions in order to streamline operations. These actions include a reduction of the Company's global workforce by approximately 570 positions, as well as asset disposals and lease terminations. As a result of these actions, the Company has incurred restructuring charges of $45.5 million ($32.7 million after tax) during 2017. Actions were substantially completed in 2017. As of December 31, 2017, the restructuring liability balance related to these activities was $23.2 million. The majority of the pretax charges represent net cash expenditures which are expected to be paid over a period of a few months to several quarters and will be funded from operating activities. Cash payments during 2017, related to actions initiated in 2017, were $17.8 million.

We recorded net restructuring gains related to legacy restructuring plans that commenced prior to 2015 of $1.0 million ($0.04 million after tax) during 2017. The Company recorded net restructuring gains of $9.1 million ($10.8 million after tax) in 2016 and net restructuring charges of $100.3 million ($77.2 million after tax) during 2015. The legacy restructuring plans liability balance was $18.3 million, $39.6 million, and $90.1 million as of December 31, 2017, 2016 and 2015, respectively. The reduction in liability balance was driven primarily by severance and other cash payments. The remaining accrual is expected to be paid over a period of a few months to several quarters and continues to be funded from operating activities.

Restructuring activities have been included as a component of both cost of sales and special (gains) and charges on the Consolidated Statement of Income. Amounts included as a component of cost of sales include supply chain related severance and other asset write-downs associated with combining operations. Restructuring liabilities have been classified as a component of both other current and other noncurrent liabilities on the Consolidated Balance Sheet.

Acquisition and integration related costs

Acquisition and integration costs reported in cost of sales on the Consolidated Statement of Income in 2017 include $13.2 million ($8.6 million after tax) related primarily to disposal of excess inventory upon the closure of Swisher plants, accelerated rent expense, and amounts related to recognition of fair value step-up in the Anios inventory.

Acquisition and integration costs reported in special (gains) and charges on the Consolidated Statement of Income in 2017 include $15.4 million ($9.9 million after tax) of acquisition costs, advisory and legal fees, and integration charges for the Anios and Swisher acquisitions during 2017.

During 2016, the Company incurred acquisition and integration charges of $8.6 million ($5.4 million after tax) primarily related to the Swisher acquisition. During 2015, a s a result of the Champion acquisition and Nalco merger, the Company incurred charges of $18.7 million ($12.0 million after tax). The charges have been included as a component of special (gains) and charges on the Consolidated Statement of Income. Further information related to the Company's acquisitions is included in Note 4.

Fixed asset impairment and other charges

During 2017, the Company recorded other charges of $26.2 million ($19.7 million after tax) primarily relating to fixed asset impairments and a Global Energy vendor contract termination.

During 2015, the Company recorded fixed asset impairment charge of $24.7 million ($15.4 million after tax), consisting of certain production equipment and buildings within one of the Company's U.S. plants. During 2016, the Company recorded an additional charge of $10.0 million ($6.3 million after tax) related to the dry polymer fixed asset impairment, as well as related inventory charges. Subsequent to the charge, the remaining value of the underlying fixed assets was less than $5 million. Inventory charges include adjustments due to the significant decline in activity and related prices of the corresponding dry polymer products.

These items have been included as a component of cost of sales on the Consolidated Statement of Income.

Inventory costs and reserve

During 2015, the Company improved and standardized estimates related to its inventory reserves and product costing, resulting in a net pre-tax charge of $6.1 million. Separately, the actions resulted in a charge of $20.6 million ($15.9 million after tax), related to inventory reserve calculations, partially offset by a gain of $14.5 million ($12.2 million after tax), related to the capitalization of certain cost components into inventory.

During 2016, the Company took additional actions related to capitalization of certain cost components into inventory, which resulted in a gain of $6.2 million ($4.6 million after tax).

Energy related charges

Oil industry activity remained depressed during 2016 when compared with 2014 levels, resulting from excess oil supply pressures, which negatively impacted exploration and production investments in the energy industry, particularly in North America. As a result of these conditions and their corresponding impact on the Company's business outlook, the Company recorded total charges of $76.8 million ($50.0 million after tax), comprised of inventory write-downs and related disposal costs, fixed asset charges, headcount reductions and other charges in 2016. No such charges were incurred in 2017.

The inventory write-downs and related disposal costs of $40.5 million include adjustments due to the significant decline in activity and related prices of certain specific-use and other products, coupled with declines in replacement costs, as well as estimated costs to dispose the respective excess inventory. The fixed asset charges of $20.4 million resulted from the write-down of certain assets related to the reduction of certain aspects of the Company's North American operations within the Global Energy segment, as well as abandonment of certain projects under construction. The carrying value of the corresponding fixed assets was reduced to zero. The employee termination costs of $13.1 million include a reduction in the Company's Global Energy segment's global workforce to better align its workforce with anticipated activity levels in the near term. As of the end of 2017, the remaining severance liability was minimal.

The charges discussed above have been included as a component of both cost of sales and special (gains) and charges on the Consolidated Statement of Income.

Venezuela related activities

Effective as of the end of the fourth quarter of 2015, the Company deconsolidated its Venezuelan subsidiaries and began accounting for the investments in its Venezuelan subsidiaries using the cost method of accounting effective in the first quarter of 2016. The conditions within Venezuela driving this decision remained in place during 2016 and 2017. Prior to deconsolidation, the Company remeasured the Venezuelan bolivar operations within its Water, Paper, Food & Beverage, Institutional and the bolivar portion of the Company's Venezuelan operations within Energy operating segments from the official exchange rate at the time of 6.3 bolivares to 1 U.S. dollar to the SIMADI rate at the time of approximately 200 bolivares to 1 U.S. dollar. As a result of the ownership structure of the Company's Food & Beverage and Institutional operations in Venezuela, the Company reflected a portion of the devaluation impact as a component of net income (loss) attributable to noncontrolling interest on the Consolidated Statement of Income. Upon deconsolidation, the Company recorded a charge to fully write off its intercompany receivables and investment. The total charges during 2015 related to the Company's actions in Venezuela were $289.3 million ($246.8 million after tax). The Company reflected $11.1 million of the above charges as a component of net income (loss) attributable to noncontrolling interest on the Consolidated Statement of Income, resulting in a net charge of $235.7 million.

The Company recorded gains due to U.S. dollar cash recoveries of intercompany receivables written off at the time of deconsolidation of $11.5 million ($7.2 million after tax) and $7.8 million ($4.9 million after tax) in 2017 and 2016, respectively.

Gain on sale of business

During 2017, the Company disposed of the Equipment Care business and recorded a gain of $46.1 million ($12.4 million after tax primarily due to non-deductible goodwill) net of working capital adjustments, costs to sell and other transaction expenses. The gain has been included as a component of special (gains) and charges on the Consolidated Statement of Income.

Other

The Company recorded net gains of $1.4 million ($0.7 million after tax), net charges of $33.2 million ($21.1 million after tax), and net charges of $56.3 million ($34.5 million after tax) in 2017, 2016, and 2015, respectively, primarily related to litigation related charges and settlements. In 2015, this also included the recognition of a loss on the sale of a portion of the Ecovation business, offset partially by the recovery of funds deposited into escrow as part of the Champion transaction . These charges have been included as a component of special (gains) and charges on the Consolidated Statement of Income.

Interest Expense, net

During 2017, in anticipation of U.S. tax reform and a potential limit on interest deductibility in future years , the Company entered into transactions to exchange or retire certain long-term debt, and incurred debt exchange and extinguishment charges of $21.9 million ($13.6 million after tax). This charge has been included as a component of interest expense, net on the Consolidated Statement of Income.

4. ACQUISITIONS AND DISPOSITIONS

Acquisitions

The Company makes acquisitions that align with its strategic business objectives. The assets and liabilities of the acquired entities have been recorded as of the acquisition date, at their respective fair values, and are included in the Consolidated Balance Sheet. The purchase price allocation is based on estimates of the fair value of assets acquired and liabilities assumed. The aggregate purchase price of acquisitions has been reduced for any cash or cash equivalents acquired with the acquisition. Acquisitions during 2017, 2016 and 2015 were not significant to the Company's consolidated financial statements; therefore, pro forma financial information is not presented.

Anios Acquisition

On February 1, 2017, the Company acquired Anios for total consideration of $798.3 million, including satisfaction of outstanding debt. Anios had annualized pre-acquisition sales of approximately $245 million and is a leading European manufacturer and marketer of hygiene and disinfection products for the healthcare, food service, and food and beverage processing industries. Anios provides an innovative product line that expands the solutions the Company is able to offer, while also providing a complementary geographic footprint within the healthcare market. During 2016, the Company deposited €50 million in an escrow account that was released back to the Company upon closing of the transaction in February 2017. As shown within Note 5, this was recorded as restricted cash within other assets on the Consolidated Balance Sheet as of December 31, 2016.

The Company incurred certain acquisition and integration costs associated with the transaction that were expensed and are reflected in the Consolidated Statement of Income. See Note 3 for additional information related to the Company's special (gains) and charges related to such activities.

The components of the cash paid for Anios are shown in the following table.

(millions)	2017
Tangible assets	$139.8
Identifiable intangible assets	
Customer relationships	252.0
Trademarks	65.7
Other technology	16.1
Total assets acquired	473.6
Goodwill	511.7
Total liabilities	187.0
Total consideration transferred	798.3
Long-term debt repaid upon close	192.8
Net consideration transferred to sellers	$605.5

Tangible assets are primarily comprised of accounts receivable of $64.8 million, property, plant and equipment of $24.7 million and inventory of $29.1 million. Liabilities primarily consist of deferred tax liabilities of $102.3 million and current liabilities of $62.5 million.

Customer relationships, trademarks and other technology are being amortized over weighted average lives of 20, 17, and 11 years, respectively.

Goodwill of $511.7 million arising from the acquisition consists largely of the synergies and economies of scale expected through adding complementary geographies and innovative products to the Company's healthcare portfolio. The goodwill was allocated to the Institutional, Healthcare, and Specialty operating segments within the Global Institutional reportable segment and the Food & Beverage and Life Sciences operating segments within the Global Industrial reportable segment. None of the goodwill recognized is expected to be deductible for income tax purposes.

Other Acquisitions

The components of the cash paid for other acquisitions, excluding the Anios transaction, for the current and prior year transactions during 2017, 2016 and 2015, are shown in the following table.

(millions)	2017	2016	2015
Net tangible assets acquired and equity method investments	**$29.8**	$46.9	$103.7
Identifiable intangible assets			
Customer relationships	**67.0**	2.6	65.6
Patents	**-**	-	6.7
Trademarks	**2.5**	-	13.5
Non-compete agreements	**0.2**	-	4.2
Other technology	**7.6**	1.1	8.7
Total intangible assets	**77.3**	3.7	98.7
Goodwill	**87.4**	7.3	136.9
Total aggregate purchase price	**194.5**	57.9	339.3
Acquisition related liabilities and contingent consideration	**5.6**	27.1	(60.5)
Net cash paid for acquisitions, including acquisition related liabilities and contingent consideration	**$200.1**	$85.0	$278.8

The 2017 and 2016 acquisition related liabilities are related primarily to payments of settled liabilities from previous transactions. The 2015 acquisition related liability is related to holdback liabilities and contingent consideration as part of the Jianghai, Swisher, and UltraFab acquisitions.

The weighted average useful lives of identifiable intangible assets acquired, excluding the Anios transaction, was 12, 4, and 10 years as of December 31, 2017, 2016 and 2015, respectively.

2017 Activity

In January 2017, the Company acquired a business which provides water solutions to automotive customers. The acquired business became part of the Company's Global Industrial reportable segment. In September 2017, the Company acquired a paper chemicals business which became a part of the Company's Global Industrial reportable segment. In December 2017, the Company acquired U.S. based pest elimination businesses that provide specialized capabilities in food storage. These businesses became part of the Company's Other reportable segment. Additional acquisitions were made during the year which became part of the Company's Global Energy and Global Industrial reportable segments. Annualized pre-acquisition sales of the businesses acquired were approximately $135 million.

2016 Activity

In July 2016, the Company made an equity method investment in a global leader in the design and engineering of complex and comprehensive water treatment solutions that improve water quality and reduce net water usage which became part of the Company's Global Industrial reportable segment. Also during 2016, the Company acquired certain assets of an oilfield chemical distributor which became part of the Company's Global Energy reportable segment.

2015 Activity

In June 2015, the Company acquired an industrial water treatment business, which became part of the Company's Global Industrial reportable segment. In November 2015, the Company acquired a U.S. based hygiene and sanitizing solutions business in the foodservice, hospitality, retail and healthcare markets. The acquired business became part of the Company's Global Institutional reportable segment. The Company also acquired, in November 2015, a business which manufactures customized solutions and specialized chemical injection systems for the oil and gas industry. The acquired business became part of the Company's Global Energy reportable segment. Additional acquisitions were made during the year which became part of the Company's Global Institutional, Other and Global Industrial reportable segments. Annualized pre-acquisition sales of the businesses acquired were approximately $300 million.

Dispositions

In November 2017, the Company completed the sale of its Equipment Care business to a third party for $132.6 million, net of working capital adjustments, costs to sell and other transaction expenses. Prior to its sale, Equipment Care provided equipment repair, maintenance, and preventative maintenance services for the commercial food service industry. Consideration received consisted of $118.8 million of cash, a note receivable of $15.0 million and a $5.0 million equity interest in the acquiring entity. The Company recognized a gain of $46.1 million ($12.4 million after tax, primarily due to non-deductible goodwill), which is recorded in special (gains) and charges in the Consolidated Statement of Income. Equipment Care sales were approximately $180 million in 2016 and were included in the Company's Other reportable segment.

In October 2016, the Company sold the restroom cleaning business initially acquired through the November 2015 Swisher acquisition.

In November 2015, the Company sold a business in Europe that was part of its Global Energy segment. In June 2015, the Company sold a portion of its Ecovation business, resulting in a loss of $13.7 million ($8.6 million after tax), recorded in special gains and charges. The business was part of the Company's Global Industrial segment.

None of the dispositions above were significant to the Company's consolidated financial statements.

Subsequent Event Activity

The Company entered into various purchase and sale agreements which are expected to close in the first quarter of 2018. None of the agreements are significant to the consolidated financial statements, individually or in the aggregate.

5. BALANCE SHEET INFORMATION

(millions)	December 31 2017	December 31 2016
Accounts receivable, net		
Accounts receivable	$2,645.6	$2,408.8
Allowance for doubtful accounts	(71.5)	(67.6)
Total	$2,574.1	$2,341.2
Inventories		
Finished goods	$974.3	$860.0
Raw materials and parts	438.7	408.4
Inventories at FIFO cost	1,413.0	1,268.4
FIFO cost to LIFO cost difference	32.9	51.0
Total	$1,445.9	$1,319.4
Other current assets		
Prepaid assets	$153.5	$98.3
Taxes receivable	129.2	105.0
Derivative assets	28.8	46.3
Other	53.5	41.8
Total	$365.0	$291.4
Property, plant and equipment, net		
Land	$224.1	$211.0
Buildings and leasehold improvements	1,207.4	1,121.2
Machinery and equipment	2,280.9	2,035.8
Merchandising and customer equipment	2,399.4	2,199.4
Capitalized software	585.8	531.1
Construction in progress	438.7	344.1
	7,136.3	6,442.6
Accumulated depreciation	(3,429.2)	(3,077.6)
Total	$3,707.1	$3,365.0
Other intangible assets, net		
Intangible assets not subject to amortization		
Trade names	$1,230.0	$1,230.0
Intangible assets subject to amortization		
Customer relationships	$3,620.3	$3,206.1
Trademarks	380.6	303.3
Patents	462.7	446.5
Other technology	232.6	210.5
	4,696.2	4,166.4
Accumulated amortization		
Customer relationships	(1,403.8)	(1,148.2)
Trademarks	(147.6)	(125.2)
Patents	(187.9)	(157.3)
Other technology	(169.3)	(147.9)
	(1,908.6)	(1,578.6)
Net intangible assets subject to amortization	2,787.6	2,587.8
Total	$4,017.6	$3,817.8
Other assets		
Deferred income taxes	$102.2	$92.3
Pension	41.7	27.2
Derivative assets	-	21.5
Restricted cash	-	53.0
Other	330.3	291.0
Total	$474.2	$485.0

(millions)	December 31 2017	December 31 2016
Other current liabilities		
Discounts and rebates	$302.8	$275.2
Dividends payable	118.6	108.0
Interest payable	50.7	37.3
Taxes payable, other than income	129.9	103.7
Derivative liabilities	62.2	24.6
Restructuring	36.0	30.5
Other	257.1	311.9
Total	$957.3	$891.2
Accumulated other comprehensive loss		
Unrealized loss on derivative financial instruments, net of tax	$(26.4)	$(8.5)
Unrecognized pension and postretirement benefit expense, net of tax	(555.8)	(511.4)
Cumulative translation, net of tax	(1,060.1)	(1,193.0)
Total	$(1,642.3)	$(1,712.9)

6. DEBT AND INTEREST

Short-term Debt

The following table provides the components of the Company's short-term debt obligations, along with applicable interest rates as of December 31, 2017 and 2016:

	2017		2016	
(millions)	Carrying Value	Average Interest Rate	Carrying Value	Average Interest Rate
Short-term debt				
Commercial paper	$-	- %	$-	- %
Notes payable	14.7	2.77 %	29.9	2.92 %
Long-term debt, current maturities	549.7		511.4	
Total	$564.4		$541.3	

Line of Credit

In November 2017, the Company entered into an amended and restated $2.0 billion multi-currency revolving credit facility which extended the maturity from December 2019 to November 2022. The credit facility has been established with a diverse syndicate of banks and supports the Company's U.S. and European commercial paper programs. There were no borrowings under the Company's credit facility as of December 31, 2017 and 2016.

Commercial Paper

The Company's commercial paper program is used as a potential source of liquidity and consists of a $2.0 billion U.S. commercial paper program and a $2.0 billion European commercial paper program. The maximum aggregate amount of commercial paper that may be issued by the Company under its commercial paper programs may not exceed $2.0 billion.

The Company had no commercial paper outstanding under either program as of December 31, 2017 or December 31, 2016.

As of December 31, 2017, the Company's short-term borrowing program was rated A-2 by Standard & Poor's and P-2 by Moody's.

Long-term Debt

The following table provides the components of the Company's long-term debt obligations, along with applicable interest rates as of December 31, 2017 and 2016:

(millions)	Maturity by Year	2017 Carrying Value	2017 Stated Interest Rate	2017 Effective Interest Rate	2016 Carrying Value	2016 Stated Interest Rate	2016 Effective Interest Rate
Long-term debt							
Public and 144A notes (2017 principal amount)							
Five year 2012 senior notes ($500 million)	2017	$-	- %	- %	$498.9	1.45 %	1.22 %
Three year 2015 senior notes ($300 million)	2018	299.9	1.55 %	1.94 %	298.9	1.55 %	1.43 %
Three year 2016 senior notes ($400 million)	2019	396.1	2.00 %	2.26 %	395.9	2.00 %	1.78 %
Five year 2015 senior notes ($300 million)	2020	299.1	2.25 %	2.79 %	298.6	2.25 %	2.79 %
Ten year 2011 senior notes ($1.02 billion)	2021	1,016.6	4.35 %	4.45 %	1,244.8	4.35 %	4.43 %
Five year 2017 senior notes ($500 million)	2022	496.3	2.38 %	2.55 %	-	-	-
Seven year 2016 senior notes ($400 million)	2023	397.5	3.25 %	3.49 %	397.0	3.25 %	3.49 %
Seven year 2016 senior notes (€575 million)	2024	676.6	1.00 %	1.17 %	608.4	1.00 %	1.20 %
Ten year 2015 senior notes (€575 million)	2025	679.4	2.63 %	2.85 %	604.3	2.63 %	2.88 %
Ten year 2016 senior notes ($750 million)	2026	742.8	2.70 %	2.93 %	742.1	2.70 %	2.94 %
Ten year 2017 144A notes ($500 million)	2027	494.7	3.25 %	3.36 %	-	-	-
Thirty year 2011 senior notes ($458 million)	2041	451.3	5.50 %	5.60 %	738.7	5.50 %	5.56 %
Thirty year 2016 senior notes ($250 million)	2046	246.0	3.70 %	3.76 %	245.9	3.70 %	3.75 %
Thirty year 2017 144A notes ($700 million)	2047	607.8	3.95 %	4.14 %	-	-	-
Private notes (2017 principal amount)							
Series A private placement senior notes ($250 million)	2018	248.5	3.69 %	5.16 %	248.9	3.69 %	4.65 %
Series B private placement senior notes ($250 million)	2023	249.3	4.32 %	4.36 %	249.2	4.32 %	4.36 %
Capital lease obligations		4.6			5.2		
Other		1.5			80.3		
Total debt		7,308.0			6,657.1		
Long-term debt, current maturities		(549.7)			(511.4)		
Total long-term debt		$6,758.3			$6,145.7		

Public and 144A Notes

In November 2017, the Company completed a private offering of $825 million of debt securities consisting of a $500 million aggregate principal ten year fixed rate note with a coupon rate of 3.25% ("New 10-year Notes") and a $325 million aggregate principal thirty year fixed rate note with a coupon rate of 3.95% ("New 30-year Notes" and, together with the New 10-year Notes, "144A Notes"). Immediately following the offering, the Company completed a private offering to exchange a portion of the outstanding senior notes due 2041 ("Old 30-year Notes"), for $375 million of the New 30-year Notes. In connection with the exchange offering, $292 million of Old 30-year Notes were validly tendered and subsequently cancelled.

The New 30-year Notes bear a lower fixed coupon rate while requiring a higher principal repayment on an extended maturity date, compared with the Old 30-year Notes that were exchanged. There were no other significant changes to the terms between the Old 30-year Notes and the New 30-year Notes. The exchange was accounted for as a debt modification, and there were no cash payments to or cash receipts from the note holders as a result of the exchange. Existing deferred financing costs associated with the Old Notes, as well as discounts associated with the New Notes aggregating $87 million, are being accreted over the term of the New Notes and recorded as interest expense.

In December 2017, the Company completed a partial retirement on $230 million of the 4.35% senior note due 2021 which was accounted for as a debt extinguishment. The payout premium of $15.7 million was expensed immediately and is reflected as a financing cash flow activity.

In August 2017, the Company issued a $500 million aggregate principal five year fixed rate note with a coupon rate of 2.375%. The proceeds were used to repay a portion of the Company's outstanding commercial paper and for general corporate purposes.

In December 2016, the Company issued a €575 million aggregate principal seven year fixed rate note with a coupon rate of 1.00% ($677 million as of December 31, 2017). The proceeds were used to repay a portion of the Company's 3.00% senior notes due at maturity in December 2016 and its 4.585% series B euro notes due at maturity in December 2016.

In October 2016, the Company issued $1.0 billion of debt securities consisting of a $750 million aggregate principal ten year fixed rate note with a coupon rate of 2.70% and a $250 million aggregate principal thirty year fixed rate note with a coupon rate of 3.70%. The proceeds were used to repay commercial paper and a portion of the Company's 3.00% senior notes due at maturity in December 2016.

In January 2016, the Company issued $800 million of debt securities consisting of a $400 million aggregate principal three year fixed rate note with a coupon rate of 2.00% and a $400 million aggregate principal seven year fixed rate note with a coupon rate of 3.25%. The proceeds were used to repay a portion of the Company's outstanding commercial paper, repay the remaining term loan balance, and for general corporate purposes.

The Company's public notes and 144A Notes may be redeemed by the Company at its option at redemption prices that include accrued and unpaid interest and a make-whole premium. Upon the occurrence of a change of control accompanied by a downgrade of the notes below investment grade rating, within a specified time period, the Company would be required to offer to repurchase the public notes and 144A Notes at a price equal to 101% of the aggregate principal amount thereof, plus any accrued and unpaid interest to the date of repurchase. The public notes and 144A Notes are senior unsecured and unsubordinated obligations of the Company and rank equally with all other senior and unsubordinated indebtedness of the Company.

The Company entered into a registration rights agreement in connection with the issuance of the 144A Notes. Subject to certain limitations set forth in the registration rights agreement, the Company has agreed to (i) file a registration statement (the "Exchange Offer Registration Statement") with respect to registered offers to exchange the 144A Notes for exchange notes (the "Exchange Notes"), which will have terms identical in all material respects to the New 10-year Notes and New 30-year Notes, as applicable, except that the Exchange Notes will not contain transfer restrictions and will not provide for any increase in the interest rate thereon in certain circumstances and (ii) use commercially reasonable efforts to cause the Exchange Offer Registration Statement to be declared effective within 270 days after the date of issuance of the 144A Notes. Until such time as the Exchange Offer Registration Statement is declared effective, the 144A Notes may only be sold in accordance with Rule 144A or Regulation S of the Securities Act of 1933, as amended.

Private Notes

The Company's private notes may be redeemed by the Company at its option at redemption prices that include accrued and unpaid interest and a make-whole premium. Upon the occurrence of specified changes of control involving the Company, the Company would be required to offer to repurchase the private notes at a price equal to 100% of the aggregate principal amount thereof, plus any accrued and unpaid interest to the date of repurchase. Additionally, the Company would be required to make a similar offer to repurchase the private notes upon the occurrence of specified merger events or asset sales involving the Company, when accompanied by a downgrade of the private notes below investment grade rating, within a specified time period. The private notes are unsecured senior obligations of the Company and rank equal in right of payment with all other senior indebtedness of the Company. The private notes shall be unconditionally guaranteed by subsidiaries of the Company in certain circumstances, as described in the note purchase agreements as amended.

Other Debt

During 2015, the Company acquired the beneficial interest in the trust owning the leased Naperville facility resulting in debt assumption of $100.2 million and the addition of $135.2 million in property, plant and equipment. Certain administrative, divisional, and research and development personnel are based at the Naperville facility. Cash paid as a result of the transaction was $19.8 million. The assumption of debt and the majority of the property, plant and equipment addition represented non-cash financing and investing activities, respectively. The remaining balance on the assumed debt was settled in December 2017 and was reflected in the "Other" line of the table above at December 31, 2016.

Covenants and Future Maturities

The Company is in compliance with all covenants under the Company's outstanding indebtedness at December 31, 2017.

As of December 31, 2017, the aggregate annual maturities of long-term debt for the next five years were:

(millions)	
2018	$ 550
2019	397
2020	300
2021	1,017
2022	497

Net Interest Expense

Interest expense and interest income incurred during 2017, 2016 and 2015 were as follows:

(millions)	2017	2016	2015
Interest expense	$274.6	$285.4	$253.7
Interest income	(19.6)	(20.8)	(10.1)
Interest expense, net	$255.0	$264.6	$243.6

Interest expense generally includes the expense associated with the interest on the Company's outstanding borrowings. Interest expense also includes the amortization of debt issuance costs and debt discounts, which are both recognized over the term of the related debt.

During 2017, in anticipation of U.S. tax reform and a potential limit on interest deductibility in future years, the Company entered into transactions to exchange or retire certain long-term debt, and incurred debt exchange and extinguishment charges of $21.9 million ($13.6 million after tax), which are included as a component of interest expense, net on the Consolidated Statement of Income.

7. FAIR VALUE MEASUREMENTS

The Company's financial instruments include cash and cash equivalents, restricted cash, accounts receivable, accounts payable, contingent consideration obligations, commercial paper, notes payable, foreign currency forward contracts, interest rate swap agreements and long-term debt.

Fair value is defined as the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants as of the measurement date. A hierarchy has been established for inputs used in measuring fair value that maximizes the use of observable inputs and minimizes the use of unobservable inputs by requiring the most observable inputs be used when available. The hierarchy is broken down into three levels:

Level 1 - Inputs are quoted prices in active markets that are accessible at the measurement date for identical assets or liabilities.

Level 2 - Inputs include observable inputs other than quoted prices in active markets.

Level 3 - Inputs are unobservable inputs for which there is little or no market data available.

The carrying amount and the estimated fair value for assets and liabilities measured on a recurring basis were:

	December 31, 2017			
(millions)	Carrying Amount	Fair Value Measurements		
		Level 1	Level 2	Level 3
Assets				
Foreign currency forward contracts	$45.8	$-	$45.8	$-
Liabilities				
Foreign currency forward contracts	153.1	-	153.1	-
Interest rate swap agreements	4.2	-	4.2	-

	December 31, 2016			
(millions)	Carrying Amount	Fair Value Measurements		
		Level 1	Level 2	Level 3
Assets				
Foreign currency forward contracts	$93.4	$-	$93.4	$-
Liabilities				
Foreign currency forward contracts	46.7	-	46.7	-
Interest rate swap agreements	3.5	-	3.5	-

The carrying value of foreign currency forward contracts is at fair value, which is determined based on foreign currency exchange rates as of the balance sheet date, and is classified within level 2. The carrying value of interest rate swap contracts is at fair value, which is determined based on current interest rates and forward interest rates as of the balance sheet date and is classified within level 2. For purposes of fair value disclosure above, derivative values are presented gross. See further discussion of gross versus net presentation of the Company's derivatives within Note 8.

Contingent consideration obligations are recognized and measured at fair value at the acquisition date and thereafter until settlement. Contingent consideration is classified within level 3 as the underlying fair value is measured based on the probability-weighted present value of the consideration expected to be transferred. The consideration expected to be transferred is based on the Company's expectations of various financial measures. The ultimate payment of contingent consideration could deviate from current estimates based on the actual results of these financial measures.

There were no contingent consideration activities during 2017. Changes in the fair value of contingent consideration obligations during 2016 were as follows:

(millions)	2016
Contingent consideration at beginning of year	$15.6
Amount recognized at transaction date	-
Losses (gains) recognized in earnings	(2.4)
Settlements	(12.6)
Foreign currency translation	(0.6)
Contingent consideration at end of year	$-

The carrying values of accounts receivable, accounts payable, cash and cash equivalents, restricted cash, commercial paper and notes payable approximate fair value because of their short maturities, and as such are classified within level 1.

The fair value of long-term debt is based on quoted market prices for the same or similar debt instruments (classified as level 2). The carrying amount and the estimated fair value of long-term debt, including current maturities, held by the Company were:

	2017		2016	
	Carrying Amount	Fair Value	Carrying Amount	Fair Value
Long-term debt, including current maturities	**$7,308.0**	**$7,716.0**	$6,657.1	$6,963.9

8. DERIVATIVES AND HEDGING TRANSACTIONS

The Company uses foreign currency forward contracts, interest rate swap agreements and foreign currency debt to manage risks associated with foreign currency exchange rates, interest rates and net investments in foreign operations. The Company does not hold derivative financial instruments of a speculative nature or for trading purposes. The Company records derivatives as assets and liabilities on the balance sheet at fair value. Changes in fair value are recognized immediately in earnings unless the derivative qualifies and is designated as a hedge. Cash flows from derivatives are classified in the statement of cash flows in the same category as the cash flows from the items subject to designated hedge or undesignated (economic) hedge relationships. The Company evaluates hedge effectiveness at inception and on an ongoing basis. If a derivative is no longer expected to be effective, hedge accounting is discontinued. Hedge ineffectiveness, if any, is recorded in earnings.

The Company is exposed to credit risk in the event of nonperformance of counterparties for foreign currency forward exchange contracts and interest rate swap agreements. The Company monitors its exposure to credit risk by using credit approvals and credit limits and by selecting major international banks and financial institutions as counterparties. The Company does not anticipate nonperformance by any of these counterparties, and therefore, recording a valuation allowance against the Company's derivative balance is not considered necessary.

Derivative Positions Summary

Certain of the Company's derivative transactions are subject to master netting arrangements that allow the Company to net settle contracts with the same counterparties. These arrangements generally do not call for collateral and as of the applicable dates presented below, no cash collateral had been received or pledged related to the underlying derivatives.

The respective net amounts are included in other current assets, other assets, other current liabilities and other liabilities on the Consolidated Balance Sheet.

The following table summarizes the gross fair value of the Company's outstanding derivatives.

(millions)	Asset Derivatives 2017	Asset Derivatives 2016	Liability Derivatives 2017	Liability Derivatives 2016
Derivatives designated as hedging instruments				
Foreign currency forward contracts	$19.6	$73.4	$125.2	$19.8
Interest rate swap agreements	-	-	4.2	3.5
Derivatives not designated as hedging instruments				
Foreign currency forward contracts	26.2	20.0	27.9	26.9
Gross value of derivatives	45.8	93.4	157.3	50.2
Gross amounts offset in the Consolidated Balance Sheet	(17.0)	(25.7)	(17.0)	(25.7)
Net value of derivatives	$28.8	$67.7	$140.3	$24.5

The following table summarized the notional values of the Company's outstanding derivatives.

(millions)	Notional Values 2017	Notional Values 2016
Foreign currency forward contracts	$ 5,593	$ 4,317
Interest rate agreements	$ 950	$ 1,450

Cash Flow Hedges

The Company utilizes foreign currency forward contracts to hedge the effect of foreign currency exchange rate fluctuations on forecasted foreign currency transactions, including inventory purchases and intercompany royalty, management fee and other payments. These forward contracts are designated as cash flow hedges. The effective portions of the changes in fair value of these contracts are recorded in accumulated other comprehensive income ("AOCI") until the hedged items affect earnings, at which time the gain or loss is reclassified into the same line item in the Consolidated Statement of Income as the underlying exposure being hedged. Cash flow hedged transactions impacting AOCI are forecasted to occur within the next five years.

The Company occasionally enters into treasury lock and forward starting interest rate swap agreements to manage interest rate exposure. During 2016 and 2015, the Company entered into and subsequently closed a series of treasury lock and forward starting interest rate swap agreements, in conjunction with its public debt issuances. The agreements were designated and effective as cash flow hedges of the expected interest payments related to the anticipated future debt issuances. Amounts recorded in AOCI are recognized as interest expense over the remaining life of the notes as the forecasted interest transactions occur.

The effective portion of gains and losses recognized into AOCI and earnings from derivative contracts that qualified as cash flow hedges was as follows:

(millions)			2017	2016	2015
Unrealized gain (loss) recognized into AOCI					
Foreign currency forward contracts	AOCI (equity)	AOCI (equity)	$(173.4)	$7.0	$68.4
Interest rate swap agreements	AOCI (equity)	AOCI (equity)	-	(9.3)	3.6
	Total	Total	(173.4)	(2.3)	72.0
Gain (loss) recognized in income					
Foreign currency forward contracts	Cost of sales	Cost of sales	(13.7)	23.0	30.9
	SG&A	SG&A	(157.2)	(0.1)	24.7
	Interest expense, net	Interest expense, net	24.5	5.8	2.9
	Subtotal	Total	(146.4)	28.7	58.5
Interest rate swap agreements	Interest expense, net	Interest expense, net	(7.2)	(6.6)	(5.5)
	Total	Total	$(153.6)	$22.1	$53.0

Gains and losses recognized in income related to the ineffective portion of the Company's cash flow hedges were insignificant during 2017, 2016 and 2015.

Fair Value Hedges

The Company manages interest expense using a mix of fixed and floating rate debt. To help manage exposure to interest rate movements and to reduce borrowing costs, the Company may enter into interest rate swaps under which the Company agrees to exchange, at specified intervals, the difference between fixed and floating interest amounts calculated by reference to an agreed upon notional principal amount. The mark-to-market of these fair value hedges is recorded as gains or losses in interest expense and is offset by the gain or loss of the underlying debt instrument, which also is recorded in interest expense. These fair value hedges are highly effective and thus, there is no impact on earnings due to hedge ineffectiveness.

In January 2016, the Company entered into an interest rate swap agreement that converted its $400 million 2.00% debt from a fixed rate to a floating rate. In January 2015, the Company entered into interest rate swap agreements that converted its $300 million 1.55% debt, its $250 million 3.69% debt and a portion of its $1.25 billion 3.00% debt from fixed rates to floating interest rates. In May 2014, the Company entered into an interest rate swap agreement that converted its $500 million 1.45% debt from a fixed rate to a floating interest rate. The interest rate swap agreement tied to the Company's $500 million 1.45% debt and the interest rate swap agreement tied to a portion of the Company's $1.25 billion 3.00% debt expired in December 2017 and December 2016, respectively, upon repayment of the underlying debt.

The interest rate swaps referenced above were designated as fair value hedges.

The impact on earnings from derivative contracts that qualified as fair value hedges was as follows:

(millions)		2017	2016	2015
Gain (loss) on derivative recognized income				
Interest rate swap	Interest expense, net	$(0.7)	$(1.4)	$0.0
Gain (loss) on hedged item recognized income				
Interest rate swap	Interest expense, net	$0.7	$1.4	$(0.0)

Net Investment Hedges

The Company designates its outstanding €1,150 million ($1,356 million as of year-end 2017) senior notes ("euronotes") and related accrued interest as a hedge of existing foreign currency exposures related to investments the Company has in certain euro denominated functional currency subsidiaries. The European commercial paper and the series B euro denominated private placement notes were also designated as a hedge of existing foreign currency exposures and matured in December 2017 and December 2016, respectively.

The revaluation gains and losses on the euro notes and European commercial paper, which are designated and effective as hedges of the Company's net investments, have been included as a component of the cumulative translation adjustment account, and were as follows:

(millions)	2017	2016	2015
Revaluation gains (losses), net of tax	$(109.7)	$(2.5)	$101.3

Derivatives Not Designated as Hedging Instruments

The Company also uses foreign currency forward contracts to offset its exposure to the change in value of certain foreign currency denominated assets and liabilities held at foreign subsidiaries, primarily receivables and payables, which are remeasured at the end of each period. Although the contracts are effective economic hedges, they are not designated as accounting hedges. Therefore, changes in the value of these derivatives are recognized immediately in earnings, thereby offsetting the current earnings effect of the related foreign currency denominated assets and liabilities.

The impact on earnings from derivative contracts that are not designated as hedging instruments was as follows:

(millions)		2017	2016	2015
Gain (loss) recognized in income				
Foreign currency forward contracts	SG&A	$(38.2)	$(6.0)	$15.9
	Interest expense, net	(3.0)	(8.4)	(8.6)
	Total	$(41.2)	$(14.4)	$7.3

The amounts recognized in SG&A above offset the earnings impact of the related foreign currency denominated assets and liabilities. The amounts recognized in interest expense above represent the component of the hedging gains (losses) attributable to the difference between the spot and forward rates of the hedges as a result of interest rate differentials.

9. OTHER COMPREHENSIVE INCOME (LOSS) INFORMATION

Other comprehensive income (loss) includes net income, foreign currency translation adjustments, unrecognized gains and losses on securities, defined benefit pension and postretirement plan adjustments, gains and losses on derivative instruments designated and effective as cash flow hedges and non-derivative instruments designated and effective as foreign currency net investment hedges that are charged or credited to the accumulated other comprehensive loss account in shareholders' equity.

The following table provides other comprehensive income (loss) information related to the Company's derivatives and hedging instruments and pension and postretirement benefits. See Note 8 for additional information related to the Company's derivatives and hedging transactions. See Note 16 for additional information related to the Company's pension and postretirement benefits activity.

(millions)	2017	2016	2015
Derivative and Hedging Instruments			
Unrealized gains (losses) on derivative & hedging instruments			
Amount recognized in AOCI	$(173.4)	$(2.3)	$72.0
(Gains) losses reclassified from AOCI into income			
Cost of sales	13.7	(23.0)	(30.9)
SG&A	157.2	0.1	(24.7)
Interest (income) expense, net	(17.3)	0.8	2.6
	153.6	(22.1)	(53.0)
Other activity	0.2	(0.2)	1.7
Tax impact	1.7	7.1	(9.0)
Net of tax	$(17.9)	$(17.5)	$11.7
Pension and Postretirement Benefits			
Amount recognized in AOCI			
Current period net actuarial income (loss) and prior service costs	$(46.9)	$(136.0)	$2.8
Amount reclassified from AOCI into income			
Amortization of net actuarial loss and prior service costs and benefits adjustments	21.5	32.2	52.0
Reclassification associated with Venezuelan entities	-	-	3.5
Postretirement benefits changes	-	54.0	-
	(25.4)	(49.8)	58.3
Tax impact	16.2	9.3	(20.3)
Net of tax	$(9.2)	$(40.5)	$38.0

10. SHAREHOLDERS' EQUITY

Authorized common stock, par value $1.00 per share, was 800 million shares at December 31, 2017, 2016 and 2015. Treasury stock is stated at cost. Dividends declared per share of common stock were $1.520 for 2017, $1.420 for 2016 and $1.340 for 2015.

The Company has 15 million shares, without par value, of authorized but unissued and undesignated preferred stock.

Share Repurchase Authorization

In February 2015, the Company's Board of Directors authorized the repurchase of up to 20 million additional shares of its common stock, including shares to be repurchased under Rule 10b5-1. As of December 31, 2017, 12,358,110 shares remained to be repurchased under the Company's repurchase authorization. The Company intends to repurchase all shares under its authorization, for which no expiration date has been established, in open market or privately negotiated transactions, subject to market conditions.

Accelerated Stock Repurchase ("ASR") Agreements

In February 2017, the Company entered into an ASR agreement to repurchase $300 million of its common stock and received 2,077,224 shares of its common stock, which was approximately 85% of the total number of shares the Company expected to be repurchased under the ASR, based on the price of the Company's common stock at that time. In connection with the final settlement of the ASR agreement in June 2017, the Company received an additional 286,620 shares of common stock.

In February 2016, the Company entered into an ASR agreement to repurchase $300 million of its common stock and received 2,459,490 shares of its common stock, which was approximately 85% of the total number of shares the Company expected to be repurchased under the ASR, based on the price of the Company's common stock at that time. Upon final settlement of the ASR agreement in May 2016, the Company received an additional 232,012 shares of common stock.

The final per share purchase price and the total number of shares to be repurchased under the 2017 and 2016 ASR agreements generally were based on the volume-weighted average price of the Company's common stock during the term of the agreements.

All shares acquired under the ASR agreements were recorded as treasury stock.

During their respective open periods in 2017 and 2016, neither of the ASRs was dilutive to the Company's earnings per share calculations, nor did they trigger the two-class earnings per share methodology. Additionally, the unsettled portion of ASRs during their respective open periods met the criteria to be accounted for as a forward contract indexed to the Company's stock and qualified as equity transactions.

The initial delivery of shares, as well as the additional receipt of shares at settlement resulted in a reduction to the Company's common stock outstanding used to calculate earnings per share.

Share Repurchases

During 2017, the Company reacquired 4,707,629 shares of its common stock, of which 4,414,416 related to share repurchases through open market or private purchases, including the February 2017 ASR discussed above, and 293,213 related to shares withheld for taxes on exercise of stock options and the vesting of stock awards and units.

During 2016, the Company reacquired 6,483,198 shares of its common stock, of which 6,126,033 related to share repurchases through open market or private purchases, including the February 2016 ASR discussed above, and 357,165 related to shares withheld for taxes on exercise of stock options and the vesting of stock awards and units.

11. EQUITY COMPENSATION PLANS

The Company measures compensation expense for share-based awards at fair value at the date of grant and recognizes compensation expense over the service period for awards expected to vest. The majority of grants to retirement eligible recipients (age 55 with required years of service) are attributed to expense using the non-substantive vesting method and are fully expensed over a six month period following the date of grant. In addition, the Company includes a forfeiture estimate in the amount of compensation expense being recognized based on an estimate of the number of outstanding awards expected to vest.

The Company's equity compensation plans provide for grants of stock options, performance-based restricted stock units ("PBRSUs") and non-performance-based restricted stock units ("RSUs") and restricted stock awards ("RSAs"). Common shares available for grant as of December 31, 2017, 2016 and 2015 were 11,685,090, 13,649,667 and 15,888,937, respectively. The Company generally issues authorized but previously unissued shares to satisfy stock option exercises and stock award vestings.

The Company's annual long-term incentive share-based compensation program is made up of 50% stock options and 50% PBRSUs. The Company also periodically grants RSUs. Total compensation expense related to all share-based compensation plans was $90 million ($62 million net of tax benefit), $86 million ($59 million net of tax benefit) and $78 million ($54 million net of tax benefit) for 2017, 2016 and 2015, respectively. As of December 31, 2017, there was $141 million of total measured but unrecognized compensation expense related to non-vested share-based compensation arrangements granted under all of the Company's plans. That cost is expected to be recognized over a weighted-average period of 2.1 years.

Stock Options

Stock options are granted to purchase shares of the Company's stock at the average daily share price on the date of grant. These options generally expire within ten years from the grant date. The Company generally recognizes compensation expense for these awards on a straight-line basis over the three year vesting period. As previously noted, stock option grants to retirement eligible recipients are attributed to expense using the non-substantive vesting method.

A summary of stock option activity and average exercise prices is as follows:

	2017		2016		2015	
	Number of Options	Exercise Price (a)	Number of Options	Exercise Price (a)	Number of Options	Exercise Price (a)
Outstanding, beginning of year	**11,910,501**	**$ 84.22**	12,378,372	$ 74.23	13,169,776	$ 63.88
Granted	**1,491,893**	**136.87**	1,679,941	117.60	1,686,816	118.99
Exercised	**(1,951,920)**	**56.00**	(2,061,553)	50.33	(2,316,025)	46.22
Canceled	**(70,461)**	**116.44**	(86,259)	111.08	(162,195)	99.67
Outstanding, end of year	**11,380,013**	**$ 95.76**	11,910,501	$ 84.22	12,378,372	$ 74.23
Exercisable, end of year	**8,371,809**	**$ 84.40**	8,720,943	$ 72.35	9,248,880	$ 61.18
Vested and expected to vest, end of year	**11,200,505**	**$ 95.25**				

(a) Represents weighted average price per share.

The total aggregate intrinsic value of options (the amount by which the stock price exceeded the exercise price of the option on the date of exercise) that were exercised during 2017, 2016 and 2015 was $142 million, $140 million and $160 million, respectively.

The total aggregate intrinsic value of options outstanding as of December 31, 2017 was $445 million, with a corresponding weighted-average remaining contractual life of 6.4 years. The total aggregate intrinsic value of options exercisable as of December 31, 2017 was $422 million, with a corresponding weighted-average remaining contractual life of 5.4 years. The total aggregate intrinsic value of options vested and expected to vest as of December 31, 2017 was $443 million, with a corresponding weighted-average remaining contractual life of 6.4 years.

The lattice (binomial) option-pricing model is used to estimate the fair value of options at grant date. The Company's primary employee option grant occurs during the fourth quarter. The weighted-average grant-date fair value of options granted and the significant assumptions used in determining the underlying fair value of each option grant, on the date of grant were as follows:

	2017	2016	2015
Weighted-average grant-date fair value of options granted at market prices	$ 30.34	$ 25.59	$ 25.71
Assumptions			
Risk-free rate of return	2.2 %	2.0 %	1.8 %
Expected life	6 years	6 years	6 years
Expected volatility	22.7 %	22.9 %	22.9 %
Expected dividend yield	1.2 %	1.3 %	1.2 %

The risk-free rate of return is determined based on a yield curve of U.S. treasury rates from one month to ten years and a period commensurate with the expected life of the options granted. Expected volatility is established based on historical volatility of the Company's stock price. The expected dividend yield is determined based on the Company's annual dividend amount as a percentage of the average stock price at the time of the grant.

PBRSUs, RSUs and RSAs

The expense associated with PBRSUs is based on the average of the high and low share price of the Company's common stock on the date of grant, adjusted for the absence of future dividends. The awards vest based on the Company achieving a defined performance target and with continued service for a three year period. Upon vesting, the Company issues shares of its common stock such that one award unit equals one share of common stock. The Company assesses the probability of achieving the performance target and recognizes expense over the three year vesting period when it is probable the performance target will be met. PBRSU awards granted to retirement eligible recipients are attributed to expense using the non-substantive vesting method. The awards are generally subject to forfeiture in the event of termination of employment.

The expense associated with shares of non-performance based RSUs and RSAs is based on the average of the high and low share price of the Company's common stock on the date of grant, adjusted for the absence of future dividends and is amortized on a straight-line basis over the periods during which the restrictions lapse. The Company currently has RSUs that vest over periods between 12 and 84 months. The remaining RSAs vested during 2015. The awards are generally subject to forfeiture in the event of termination of employment.

A summary of non-vested PBRSUs and restricted stock activity is as follows:

	PBRSU Awards	Grant Date Fair Value (a)	RSAs and RSUs	Grant Date Fair Value (a)
December 31, 2014	1,593,234	$ 78.59	401,071	$ 80.33
Granted	368,373	114.31	103,841	112.90
Vested / Earned	(468,317)	52.97	(212,576)	67.70
Canceled	(49,101)	90.97	(19,101)	81.06
December 31, 2015	1,444,189	$ 95.59	273,235	$ 102.49
Granted	371,859	112.29	88,437	109.27
Vested / Earned	(402,509)	68.64	(96,874)	94.06
Canceled	(26,852)	105.09	(10,411)	105.07
December 31, 2016	1,386,687	$ 107.70	254,387	$ 107.95
Granted	323,750	131.71	96,980	125.34
Vested / Earned	(312,745)	99.65	(86,622)	102.02
Canceled	(34,856)	108.16	(15,343)	109.72
December 31, 2017	1,362,836	$ 115.24	249,402	$ 116.66

(a) Represents weighted average price per share.

12. INCOME TAXES

Income before income taxes consisted of:

(millions)	2017	2016	2015
United States	**$848.4**	$656.1	$733.0
International	**916.4**	994.3	584.7
Total	**$1,764.8**	$1,650.4	$1,317.7

The provision (benefit) for income taxes consisted of:

(millions)	2017	2016	2015
Federal and state	**$241.8**	$224.2	$241.4
International	**355.1**	269.7	303.6
Total current	**596.9**	493.9	545.0
Federal and state	**(332.8)**	(49.2)	(185.4)
International	**(21.7)**	(41.4)	(59.1)
Total deferred	**(354.5)**	(90.6)	(244.5)
Provision for income taxes	**$242.4**	$403.3	$300.5

The Company's overall net deferred tax assets and deferred tax liabilities were comprised of the following:

December 31 (millions)	2017	2016
Deferred tax assets		
Other accrued liabilities	**$144.4**	$187.4
Loss carryforwards	**67.3**	54.8
Share-based compensation	**58.9**	83.1
Pension and other comprehensive income	**195.2**	264.7
Foreign tax credits	**-**	21.8
Other, net	**122.2**	111.1
Valuation allowance	**(21.3)**	(19.9)
Total	**566.7**	703.0
Deferred tax liabilities		
Property, plant and equipment basis differences	**(178.4)**	(275.4)
Intangible assets	**(865.6)**	(1,151.4)
Other, net	**(63.2)**	(154.1)
Total	**(1,107.2)**	(1,580.9)
Net deferred tax liabilities balance	**$(540.5)**	$(877.9)

Deferred tax assets and liabilities are recorded based on the rates at which they are expected to reverse in the future. At December 31, 2017, U.S. deferred tax assets and liabilities were recorded at the U.S. federal tax rate of 21%, reduced from 35% by the Tax Act. The Company recorded a provisional income tax benefit of $321.0 million to record U.S. deferred tax assets and liabilities at the enacted tax rate, which is a discrete tax item within income tax expense. The Company's provisional amount is based on an estimate of the impact of the reduction in the U.S. tax rate on deferred tax assets and liabilities, and is subject to final calculations related to the filing of the Company's 2017 U.S. federal income tax return. The Company's estimates are subject to continued technical guidance which may change the provisional amounts recorded in the financial statements, and will be evaluated throughout the measurement period, as permitted by SAB 118.

Deferred assets and liabilities were recorded at a U.S. federal tax rate of 35% as of December 31, 2016.

As of December 31, 2017 the Company has tax effected federal, state and international net operating loss carryforwards of $0.5 million, $23.2 million and $43.6 million, respectively, which will be available to offset future taxable income. The state loss carryforwards expire from 2018 to 2038. For the international loss carryforwards, $17.0 million expire from 2018 to 2038 and $26.6 million have no expiration.

The Company has valuation allowances on certain deferred tax assets of $21.3 million and $19.9 million at December 31, 2017 and 2016, respectively. The increase in valuation allowance from year end 2016 to year end 2017 was driven by current year losses and foreign currency translation.

In 2017, the Company obtained tax benefits from tax holidays in two foreign jurisdictions, the Dominican Republic and Singapore. The Company received a permit of operation, which expires in July 2021, from the National Council of Free Zones of Exportation for the Dominican Republic. Companies operating under the Free Zones are not subject to income tax in the Dominican Republic on export income. The Company has two tax incentives awarded by the Singapore Economic Development Board. These incentives provide for a preferential 10% tax rate on certain headquarter income and a 0% tax rate on manufacturing profits generated at the Company's facility located on Jurong Island. In 2016 and 2015 one of the Company's legal entities in China was entitled to the benefit of incentives provided by the Chinese government to technology companies in order to encourage development of the high-tech industry, including reduced tax rates and other measures. As a result, the Company was entitled to a preferential enterprise income tax rate of 15%. The Company did not recognize a benefit related to this China tax incentive in 2017. The tax reduction as the result of the tax holidays for 2017 was $16.9 million and 2016 was $6.4 million. The impact of the tax holiday in 2015 was similar to 2016.

A reconciliation of the statutory U.S. federal income tax rate to the Company's effective income tax rate is as follows:

	2017	2016	2015
Statutory U.S. rate	**35.0 %**	35.0 %	35.0 %
One time transition tax	**9.1**	-	-
State income taxes, net of federal benefit	**0.4**	0.9	0.4
Foreign operations	**(7.4)**	(8.0)	(8.1)
Domestic manufacturing deduction	**(2.2)**	(2.0)	(2.7)
R&D credit	**(1.0)**	(1.1)	(1.0)
Change in valuation allowance	**0.2**	(0.7)	(1.7)
Audit settlements and refunds	**(0.1)**	(0.2)	(0.7)
Excess stock benefits	**(2.3)**	-	-
Change in federal tax rate (deferred taxes)	**(18.2)**	-	-
Venezuela charges	**-**	-	4.5
Worthless stock deduction	**-**	0.4	(3.0)
Other, net	**0.2**	0.1	0.1
Effective income tax rate	**13.7 %**	24.4 %	22.8 %

Prior to enactment of the Tax Act, the Company did not recognize a deferred tax liability related to unremitted foreign earnings because it overcame the presumption of the repatriation of foreign earnings. Upon enactment, the Tax Act imposes a tax on certain foreign earnings and profits at various tax rates. The Company recorded a provisional amount for the income tax effects related to the one-time transition tax of $160.1 million which is subject to payment over eight years. The one-time transition tax is based on certain foreign earnings and profits for which earnings had been previously indefinitely reinvested, as well as estimates of assets and liabilities at future dates. The transition tax is based in part on the amount of those earnings held in cash and other specified assets, and is subject to change when the calculation of foreign earnings and profits is finalized, and the amount of specific assets and liabilities held at a future date is known. No additional income taxes have been provided for any remaining undistributed foreign earnings not subject to the transition tax and any additional outside basis differences inherent in these entities as these amounts continue to be indefinitely reinvested in foreign operations. The Company's provisional amount is based on an estimate of the one-time transition tax, and subject to finalization of estimates of assets and liabilities at future dates, the calculation of deemed repatriation of foreign income and the state tax effect of adjustments made to federal temporary differences. In addition, federal and state tax authorities continue to issue technical guidance which may differ from our initial interpretations. The provisional amount is subject to adjustment during the measurement period of up to one year following the December 2017 enactment of the Tax Act. The Company continues to assert permanent reinvestment of the undistributed earnings of international affiliates, and, if there are policy changes, the Company would record the applicable taxes. The Company's estimates are subject to continued technical guidance which may change the provisional amounts recorded in the financial statements, and will be evaluated throughout the measurement period, as permitted by SAB 118.

As of December 31, 2015, the Company had deferred tax liabilities of $25.8 million on foreign earnings of the legacy Nalco entities and legacy Champion entities that the Company intended to repatriate. The deferred tax liabilities originated based on purchase accounting decisions made in connection with the Nalco merger and Champion acquisition and were the result of extensive studies required to calculate the impact at the purchase date. The remaining foreign earnings were repatriated in 2016, thus reducing the deferred tax liabilities to zero as of December 31, 2016.

The Company files U.S. federal income tax returns and income tax returns in various U.S. state and non- U.S. jurisdictions. With few exceptions, the Company is no longer subject to state and foreign income tax examinations by tax authorities for years before 2014. The IRS has completed examinations of the Company's U.S. federal income tax returns (Ecolab and Nalco) through 2014. The Company's U.S. federal income tax return for the years 2015 and 2016 are currently under audit. In addition to the U.S. federal examination, there is ongoing audit activity in several U.S. state and foreign jurisdictions. The Company anticipates changes to its uncertain tax positions due to closing of various audit years mentioned above. The Company does not believe these changes will result in a material impact during the next twelve months. Decreases in the Company's gross liability could result in offsets to other balance sheet accounts, cash payments, and/or adjustments to tax expense. The occurrence of these events and/or other events not included above within the next twelve months could change depending on a variety of factors and result in amounts different from above.

The Company's 2017 reported tax rate includes $160.9 million of net tax benefits associated with the Tax Act, $6.2 million of net tax benefits on special gains and charges, and net tax benefits of $25.3 million associated with discrete tax items. In connection with the Company's initial analysis of the impact of the Tax Act, as noted above, a provisional net discrete tax benefit of $160.9 million was recorded in the period ended December 31, 2017, which includes $321.0 million tax benefit for recording deferred tax assets and liabilities at the U.S. enacted tax rate, and a net expense for the one-time transition tax of $160.1 million. While the Company was able to make an estimate of the impact of the reduction in the U.S. rate on deferred tax assets and liabilities and the one-time transition tax, it may be affected by other analyses related to the Tax Act, as indicated above.

Special (gains) and charges represent the tax impact of special (gains) and charges, as well as additional tax benefits utilized in anticipation of U.S. tax reform of $7.8 million. During 2017, the Company recorded a discrete tax benefit of $39.7 million related to excess tax benefits, resulting from the adoption of accounting changes regarding the treatment of tax benefits on share-based compensation. The extent of excess tax benefits is subject to variation in stock price and stock option exercises. In addition, the Company recorded net discrete expenses of $14.4 million related to recognizing adjustments from filing the 2016 U.S. federal income tax return and international adjustments due to changes in estimates, partially offset by the release of reserves for uncertain tax positions due to the expiration of statute of limitations in state tax matters.

During 2016, the Company recognized net expense related to discrete tax items of $3.9 million. The net expenses were driven primarily by recognizing adjustments from filing the Company's 2015 U.S. federal income tax return, partially offset by settlement of international tax matters and remeasurement of certain deferred tax assets and liabilities resulting from the application of updated tax rates in international jurisdictions. Net expense was also impacted by adjustments to deferred tax asset and liability positions and the release of reserves for uncertain tax positions due to the expiration of statute of limitations in non-U.S. jurisdictions.

During 2015, the Company recognized net benefits related to discrete tax items of $63.3 million. The net benefits were driven primarily by the release of $20.6 million of valuation allowances, based on the realizability of foreign deferred tax assets and the ability to recognize a worthless stock deduction of $39.0 million for the tax basis in a wholly-owned domestic subsidiary.

A reconciliation of the beginning and ending amount of gross liability for unrecognized tax benefits is as follows:

(millions)	2017	2016	2015
Balance at beginning of year	$75.9	$74.6	$78.7
Additions based on tax positions related to the current year	3.2	8.8	5.8
Additions for tax positions of prior years	-	2.1	0.9
Reductions for tax positions of prior years	(4.9)	(1.0)	(8.8)
Reductions for tax positions due to statute of limitations	(14.0)	(5.5)	(1.6)
Settlements	(10.8)	(2.0)	(4.2)
Assumed in connection with acquisitions	10.0	-	8.0
Foreign currency translation	2.1	(1.1)	(4.2)
Balance at end of year	$61.5	$75.9	$74.6

The total amount of unrecognized tax benefits, if recognized would have affected the effective tax rate by $47.1 million as of December 31, 2017, $57.5 million as of December 31, 2016 and $59.2 million as of December 31, 2015.

The Company recognizes interest and penalties related to unrecognized tax benefits in its provision for income taxes. During 2017, 2016 and 2015 the Company released $0.9 million, $2.9 million and $1.4 million related to interest and penalties, respectively. The Company had $9.3 million, $10.2 million and $13.1 million of accrued interest, including minor amounts for penalties, at December 31, 2017, 2016, and 2015, respectively.

13. RENTALS AND LEASES

The Company leases sales and administrative office facilities, distribution centers, research and manufacturing facilities, as well as vehicles and other equipment under operating leases. Total rental expense under the Company's operating leases was $239 million in 2017 and $221 million in both 2016 and 2015. As of December 31, 2017, identifiable future minimum payments with non-cancelable terms in excess of one year were:

(millions)	
2018	$ 131
2019	115
2020	96
2021	86
2022	74
Thereafter	115
Total	$ 617

The Company enters into operating leases for vehicles whose non-cancelable terms are one year or less in duration with month-to-month renewal options. These leases have been excluded from the table above. The Company estimates payments under such leases will approximate $62 million in 2018. These vehicle leases have guaranteed residual values that have historically been satisfied by the proceeds on the sale of the vehicles.

14. RESEARCH AND DEVELOPMENT EXPENDITURES

Research expenditures that relate to the development of new products and processes, including significant improvements and refinements to existing products, are expensed as incurred. Such costs were $201 million in 2017, $189 million in 2016 and $191 million in 2015. The Company did not participate in any material customer sponsored research during 2017, 2016 or 2015.

15. COMMITMENTS AND CONTINGENCIES

The Company is subject to various claims and contingencies related to, among other things, workers' compensation, general liability (including product liability), automobile claims, health care claims, environmental matters and lawsuits. The Company is also subject to various claims and contingencies related to income taxes, which are discussed in Note 12. The Company also has contractual obligations including lease commitments, which are discussed in Note 13.

The Company records liabilities where a contingent loss is probable and can be reasonably estimated. If the reasonable estimate of a probable loss is a range, the Company records the most probable estimate of the loss or the minimum amount when no amount within the range is a better estimate than any other amount. The Company discloses a contingent liability even if the liability is not probable or the amount is not estimable, or both, if there is a reasonable possibility that a material loss may have been incurred.

Insurance

Globally, the Company has insurance policies with varying deductibility levels for property and casualty losses. The Company is insured for losses in excess of these deductibles, subject to policy terms and conditions and has recorded both a liability and an offsetting receivable for amounts in excess of these deductibles. The Company is self-insured for health care claims for eligible participating employees, subject to certain deductibles and limitations. The Company determines its liabilities for claims on an actuarial basis.

Litigation and Environmental Matters

The Company and certain subsidiaries are party to various lawsuits, claims and environmental actions that have arisen in the ordinary course of business. These include from time to time antitrust, commercial, patent infringement, product liability and wage hour lawsuits, as well as possible obligations to investigate and mitigate the effects on the environment of the disposal or release of certain chemical substances at various sites, such as Superfund sites and other operating or closed facilities. The Company has established accruals for certain lawsuits, claims and environmental matters. The Company currently believes that there is not a reasonably possible risk of material loss in excess of the amounts accrued related to these legal matters. Because litigation is inherently uncertain, and unfavorable rulings or developments could occur, there can be no certainty that the Company may not ultimately incur charges in excess of recorded liabilities. A future adverse ruling, settlement or unfavorable development could result in future charges that could have a material adverse effect on the Company's results of operations or cash flows in the period in which they are recorded. The Company currently believes that such future charges related to suits and legal claims, if any, would not have a material adverse effect on the Company's consolidated financial position.

Environmental Matters

The Company is currently participating in environmental assessments and remediation at approximately 45 locations, the majority of which are in the U.S., and environmental liabilities have been accrued reflecting management's best estimate of future costs. Potential insurance reimbursements are not anticipated in the Company's accruals for environmental liabilities.

Matters Related to Deepwater Horizon Incident Response

On April 22, 2010, the deepwater drilling platform, the Deepwater Horizon, operated by a subsidiary of BP plc, sank in the Gulf of Mexico after a catastrophic explosion and fire that began on April 20, 2010. A massive oil spill resulted. Approximately one week following the incident, subsidiaries of BP plc, under the authorization of the responding federal agencies, formally requested Nalco Company, now an indirect subsidiary of Ecolab, to supply large quantities of COREXIT® 9500, a Nalco oil dispersant product listed on the U.S. EPA National Contingency Plan Product Schedule. Nalco Company responded immediately by providing available COREXIT and increasing production to supply the product to BP's subsidiaries for use, as authorized and directed by agencies of the federal government throughout the incident. Prior to the incident, Nalco and its subsidiaries had not provided products or services or otherwise had any involvement with the Deepwater Horizon platform. On July 15, 2010, BP announced that it had capped the leaking well, and the application of dispersants by the responding parties ceased shortly thereafter.

On May 1, 2010, the President appointed retired U.S. Coast Guard Commandant Admiral Thad Allen to serve as the National Incident Commander in charge of the coordination of the response to the incident at the national level. The EPA directed numerous tests of all the dispersants on the National Contingency Plan Product Schedule, including those provided by Nalco Company, "to ensure decisions about ongoing dispersant use in the Gulf of Mexico are grounded in the best available science." Nalco Company cooperated with this testing process and continued to supply COREXIT, as requested by BP and government authorities. The use of dispersants by the responding parties was one tool used by the government and BP to avoid and reduce damage to the Gulf area from the spill.

In connection with its provision of COREXIT, Nalco Company has been named in several lawsuits as described below.

Cases arising out of the Deepwater Horizon accident were administratively transferred for pre-trial purposes to a judge in the United States District Court for the Eastern District of Louisiana with other related cases under In Re: Oil Spill by the Oil Rig "Deepwater Horizon" in the Gulf of Mexico, on April 20, 2010, Case No. 10-md-02179 (E.D. La.) ("MDL 2179"). Nalco Company was named, along with other unaffiliated defendants, in six putative class action complaints related to the Deepwater Horizon oil spill and 21 complaints filed by individuals. Those complaints were consolidated in MDL 2179. The complaints generally allege, among other things, strict liability and negligence relating to the use of our Corexit dispersant in connection with the Deepwater Horizon oil spill.

Pursuant to orders issued by the Court in MDL 2179, the claims were consolidated in several master complaints, including one naming Nalco Company and others who responded to the Gulf Oil Spill (known as the "B3 Master Complaint"). On May 18, 2012, Nalco filed a motion for summary judgment against the claims in the "B3" Master Complaint, on the grounds that: (i) Plaintiffs' claims are preempted by the comprehensive oil spill response scheme set forth in the Clean Water Act and National Contingency Plan; and (ii) Nalco is entitled to derivative immunity from suit. On November 28, 2012, the Court granted Nalco's motion and dismissed with prejudice the claims in the "B3" Master Complaint asserted against Nalco. The Court held that such claims were preempted by the Clean Water Act and National Contingency Plan. Because claims in the "B3" Master Complaint remained pending against other defendants, the Court's decision was not a "final judgment" for purposes of appeal. Under Federal Rule of Appellate Procedure 4(a), plaintiffs will have 30 days after entry of final judgment to appeal the Court's decision.

In December 2012 and January 2013, the MDL 2179 court issued final orders approving two settlements between BP and Plaintiffs' Class Counsel: (1) a proposed Medical Benefits Class Action Settlement; and (2) a proposed Economic and Property Damages Class Action Settlement. Pursuant to the proposed settlements, class members agree to release claims against BP and other released parties, including Nalco Company and its related entities.

Nalco Company, the incident defendants and the other responder defendants have been named as first party defendants by Transocean Deepwater Drilling, Inc. and its affiliates (the "Transocean Entities") (In re the Complaint and Petition of Triton Asset Leasing GmbH, et al, MDL No. 2179, Civil Action 10-2771). In April and May 2011, the Transocean Entities, Cameron International Corporation, Halliburton Energy Services, Inc., M-I L.L.C., Weatherford U.S., L.P. and Weatherford International, Inc. (collectively, the "Cross Claimants") filed cross claims in MDL 2179 against Nalco Company and other unaffiliated cross defendants. The Cross Claimants generally allege, among other things, that if they are found liable for damages resulting from the Deepwater Horizon explosion, oil spill and/or spill response, they are entitled to indemnity or contribution from the cross defendants.

In April and June 2011, in support of its defense of the claims against it, Nalco Company filed counterclaims against the Cross Claimants. In its counterclaims, Nalco Company generally alleges that if it is found liable for damages resulting from the Deepwater Horizon e xplosion, oil spill and/or spill response, it is entitled to contribution or indemnity from the Cross Claimants.

In May 2016, Nalco was named in nine additional complaints filed by individuals alleging, among other things, business and economic loss resulting from the Deepwater Horizon oil spill ("B1" claims). In April 2017, Nalco was named in two additional complaints filed by individuals seeking, among other things, business and economic loss resulting from the Deepwater Horizon oil spill. The plaintiffs in these lawsuits are generally seeking awards of unspecified compensatory and punitive damages, and attorneys' fees and costs. These actions have been consolidated in the MDL and the Company expects they will be dismissed pursuant to the Court's November 28, 2012 order granting Nalco's motion for summary judgment.

On February 22, 2017, the Court dismissed the "B3" Master Complaint and ordered that Plaintiffs who had previously filed a claim that fell within the scope of the "B3" Master Complaint and who had "opted out" of and not released their claims under the Medical Benefits Class Action Settlement either: (1) complete a sworn statement indicating, among other things, that they opted out of the Medical Benefits Class Action Settlement (to be completed by Plaintiffs who previously filed an individual complaint); or (2) file an individual lawsuit attaching the sworn statement as an exhibit, by a deadline date set by the Court.

On July 18, 2017, the Court dismissed with prejudice certain “B3” claims not complying with the February 22, 2017 order. On July 19, 2017, the Court dismissed with prejudice certain “B1” claims not complying with three prior orders pertaining to “B1” claims and requiring, among other things, “B1” Plaintiffs to file sworn statements detailing their claim. On January 11, 2018, the Court entered an order requiring the remaining “B1” Plaintiffs to file sworn statements of causation and damages by no later than April 11, 2018, pursuant to which the Court will determine which “B1” Plaintiffs are entitled to pursue their claims. There currently remain nine cases pending against Nalco, all of which are expected to ultimately be dismissed pursuant to the Court’s November 28, 2012 order granting Nalco’s motion for summary judgment.

The Company believes the claims asserted against Nalco Company are without merit and intends to defend these lawsuits vigorously. The Company also believes that it has rights to contribution and/or indemnification (including legal expenses) from third parties. Ho wever, the Company cannot predict the outcome of these lawsuits, the involvement it might have in these matters in the future, or the potential for future litigation.

16. RETIREMENT PLANS

Pension and Postretirement Health Care Benefits Plans

The Company has a non-contributory qualified defined benefit pension plan covering the majority of its U.S. employees. The Company also has non-contributory non-qualified defined benefit plans, which provide for benefits to employees in excess of limits permitted under its U.S. pension plans. Various international subsidiaries have defined benefit pension plans. The Company provides postretirement health care benefits to certain U.S. employees and retirees.

The non-qualified plans are not funded and the recorded benefit obligation for the non-qualified plans was $124 million and $125 million at December 31, 2017 and 2016, respectively. The measurement date used for determining the U.S. pension plan assets and obligations is December 31.

International plans are funded based on local country requirements. The measurement date used for determining the international pension plan assets and obligations is November 30, the fiscal year-end of the Company’s international affiliates.

The U.S. postretirement health care plans are contributory based on years of service and choice of coverage (family or single), with retiree contributions adjusted annually. The measurement date used to determine the U.S. postretirement health care plan assets and obligations is December 31. Certain employees outside the U.S. are covered under government-sponsored programs, which are not required to be fully funded. The expense and obligation for providing international postretirement health care benefits are not significant.

The following table sets forth financial information related to the Company's pension and postretirement health care plans:

	U.S. Pension (a)		International Pension		U.S. Postretirement Health Care	
(millions)	2017	2016	2017	2016	2017	2016
Accumulated Benefit Obligation, end of year	$2,399.5	$2,147.1	$1,434.5	$1,239.8	$181.3	$173.5
Projected Benefit Obligation						
Projected benefit obligation, beginning of year	$2,267.9	$2,186.8	$1,335.6	$1,279.9	$173.5	$229.2
Service cost	70.2	67.1	31.4	27.8	2.6	3.0
Interest	83.4	81.5	28.4	31.9	5.8	7.4
Participant contributions	-	-	3.5	3.3	8.3	8.0
Medicare subsidies received	-	-	-	-	0.5	0.8
Curtailments and settlements	0.1	(0.8)	(10.7)	(12.3)	-	-
Plan amendments	-	1.2	-	2.0	1.8	(62.2)
Actuarial loss	183.1	60.2	31.9	123.9	9.2	7.5
Assumed through acquisitions	-	-	24.1	6.7	-	-
Benefits paid	(119.6)	(128.1)	(35.8)	(35.5)	(20.4)	(20.2)
Foreign currency translation	-	-	129.5	(92.1)	-	-
Projected benefit obligation, end of year	$2,485.1	$2,267.9	$1,537.9	$1,335.6	$181.3	$173.5
Plan Assets						
Fair value of plan assets, beginning of year	$1,950.1	$1,770.7	$821.9	$813.5	$9.6	$11.3
Actual returns on plan assets	310.2	152.3	76.1	89.2	1.2	0.8
Company contributions	85.9	156.0	41.0	39.4	17.2	16.4
Participant contributions	-	-	3.5	3.3	-	1.3
Acquisitions	-	-	12.5	2.6	-	-
Settlements	(0.2)	(0.8)	(10.7)	(8.3)	-	-
Benefits paid	(119.6)	(128.1)	(35.8)	(35.5)	(20.4)	(20.2)
Foreign currency translation	-	-	72.6	(82.3)	-	-
Fair value of plan assets, end of year	$2,226.4	$1,950.1	$981.1	$821.9	$7.6	$9.6
Funded Status, end of year	$(258.7)	$(317.8)	$(556.8)	$(513.7)	$(173.7)	$(163.9)
Amounts recognized in Consolidated Balance Sheet:						
Other assets	$-	$ -	$41.7	$27.2	$-	$ -
Other current liabilities	(5.6)	(6.8)	(23.0)	(20.3)	(3.5)	(2.7)
Postretirement healthcare and pension benefits	(253.1)	(311.0)	(575.5)	(520.6)	(170.2)	(161.2)
Net liability	$(258.7)	$(317.8)	$(556.8)	$(513.7)	$(173.7)	$(163.9)
Amounts recognized in Accumulated Other Comprehensive Loss (Income):						
Unrecognized net actuarial loss (gain)	$526.9	$533.0	$388.2	$357.6	$(20.1)	$(30.9)
Unrecognized net prior service benefits	(18.7)	(25.5)	(7.0)	(7.3)	(40.4)	(59.0)
Tax expense (benefit)	(199.5)	(199.2)	(98.4)	(89.4)	25.2	32.1
Accumulated other comprehensive loss (income), net of tax	$308.7	$308.3	$282.8	$260.9	$(35.3)	$(57.8)
Change in Accumulated Other Comprehensive Loss (Income):						
Amortization of net actuarial loss	$(28.7)	$(30.7)	$(18.5)	$(12.8)	$2.4	$1.6
Amortization of prior service costs (benefits)	6.8	6.9	0.7	0.8	16.7	4.3
Current period net actuarial loss (gain)	22.6	51.5	14.0	87.2	8.5	7.5
Current period prior service costs (benefits)	-	1.2	-	2.0	1.8	(13.4)
Settlement	-	(0.5)	(0.9)	(1.8)	-	-
Tax expense (benefit)	(0.3)	(10.8)	(9.0)	(12.3)	(6.9)	19.1
Postretirement benefits changes	-	-	-	(4.0)	-	(50.0)
Foreign currency translation	-	-	35.6	(21.3)	-	-
Other comprehensive loss (income)	$0.4	$17.6	$21.9	$37.8	$22.5	$(30.9)

(a) Includes qualified and non-qualified plans

Estimated amounts in accumulated other comprehensive loss expected to be reclassified to net period cost during 2018 are as follows:

(millions)	U.S. Pension (a)	International Pension	U.S. Post-Retirement Health Care
Net actuarial loss (gain)	$39.0	$17.2	$(1.9)
Net prior service costs (benefits)	(6.8)	(0.9)	(16.2)
Total	$32.2	$16.3	$(18.1)

(a) Includes qualified and non-qualified plans

The aggregate projected benefit obligation, accumulated benefit obligation and fair value of pension plan assets for plans with accumulated benefit obligations in excess of plan assets were as follows:

December 31, (millions)	2017	2016
Aggregate projected benefit obligation	$3,636.2	$3,257.6
Accumulated benefit obligation	3,476.1	3,071.6
Fair value of plan assets	2,794.0	2,418.1

These plans include the U.S. non-qualified pension plans which are not funded as well as the U.S. qualified pension plan. These plans also include various international pension plans which are funded consistent with local practices and requirements.

Net Periodic Benefit Costs and Plan Assumptions

Pension and postretirement health care benefits expense for the Company's operations are as follows:

	U.S. Pension (a)			International Pension			U.S. Postretirement Health Care		
(millions)	2017	2016	2015	2017	2016	2015	2017	2016	2015
Service cost	$70.2	$67.1	$76.5	$31.4	$27.8	$31.8	$2.6	$3.0	$3.8
Interest cost on benefit obligation	83.4	81.5	91.1	28.4	31.9	38.1	5.8	7.4	9.6
Expected return on plan assets	(149.9)	(143.6)	(132.6)	(56.3)	(52.5)	(55.6)	(0.5)	(0.7)	(0.9)
Recognition of net actuarial (gain) loss	28.7	30.7	48.5	18.5	12.8	15.4	(2.4)	(1.6)	(6.2)
Amortization of prior service cost (benefit)	(6.8)	(6.9)	(6.9)	(0.7)	(0.8)	(0.4)	(16.7)	(4.3)	(0.1)
Settlements/Curtailments	0.3	0.5	0.7	0.9	1.8	1.0	-	-	-
Total expense (benefit)	$25.9	$29.3	$77.3	$22.2	$21.0	$30.3	$(11.2)	$3.8	$6.2

(a) Includes qualified and non-qualified plans

Plan Assumptions	U.S. Pension (a)			International Pension			U.S. Postretirement Health Care		
(percent)	2017	2016	2015	2017	2016	2015	2017	2016	2015
Weighted-average actuarial assumptions used to determine benefit obligations as of year end:									
Discount rate	3.70 %	4.27 %	4.51 %	2.17 %	2.33 %	2.93 %	3.66 %	4.14 %	4.38 %
Projected salary increase	4.03	4.03	4.32	2.46	2.52	2.50			
Weighted-average actuarial assumptions used to determine net cost:									
Discount rate	4.27	4.51	4.14	2.32	2.68	2.78	4.14	4.38	4.08
Expected return on plan assets	7.75	7.75	7.75	6.67	6.71	6.80	7.75	7.75	7.75
Projected salary increase	4.03	4.32	4.32	2.83	2.75	2.83			

(a) Includes qualified and non-qualified plans

The discount rate assumptions for the U.S. plans are developed using a bond yield curve constructed from a population of high-quality, non-callable, corporate bond issues with maturities ranging from six months to thirty years. A discount rate is estimated for the U.S. plans and is based on the durations of the underlying plans.

At the end of 2015, the Company changed the approach used to measure service and interest costs for its U.S. and material international pension and other postretirement benefits. Starting in 2016, the Company elected to measure service and interest costs by applying the specific spot rates along that yield curve to the plans' liability cash flows. The Company believes this approach provides a more precise measurement of service and interest costs by aligning the timing of the plans' liability cash flows to the corresponding spot rates on the yield curve. For 2015, the Company measured service and interest costs utilizing a single weighted-average discount rate derived from the yield curve used to measure the plan obligations. The change in approach did not affect the measurement of the Company's plan obligations or the funded status. The Company has accounted for this change as a change in accounting estimate and, accordingly, has accounted for it on a prospective basis.

The expected long-term rate of return used for the U.S. plans is based on the pension plan's asset mix. The Company considers expected long-term real returns on asset categories, expectations for inflation, and estimates of the impact of active management of the assets in coming to the final rate to use. The Company also considers actual historical returns.

The expected long-term rate of return used for the Company's international plans is determined in each local jurisdiction and is based on the assets held in that jurisdiction, the expected rate of returns for the type of assets held and any guaranteed rate of return provided by the investment. The other assumptions used to measure the international pension obligations, including discount rate, vary by country based on specific local requirements and information. As previously noted, the measurement date for these plans is November 30.

The Company uses most recently available mortality tables as of the respective U.S. and international measurement dates.

For postretirement benefit measurement purposes as of December 31, 2017, the annual rates of increase in the per capita cost of covered health care were assumed to be 8.25% for pre-65 costs and 11.50% for post-65 costs. The rates are assumed to decrease each year until they reach 5% in 2028 and remain at those levels thereafter. Health care costs for certain employees which are eligible for subsidy by the Company are limited by a cap on the subsidy.

During the third quarter of 2016, the Compensation Committee of the Company's Board of Directors approved moving the U.S. postretirement healthcare plans to a Retiree Exchange approach, rather than the Employee Group Waiver Plan plus Wrap program, for post-65 retiree medical coverage beginning in 2018, and the Company informed all eligible legacy Ecolab and legacy Nalco retirees of the change. As a result of the approval and communication to the beneficiaries, the Ecolab and Nalco plans were re-measured, resulting in a $50 million reduction of postretirement benefit obligations, with a corresponding impact to AOCI of $31 million, net of tax. The remeasurement was completed using discount rates of 3.29% and 3.60%, respectively. Additionally, at the time of this remeasurement, the Nalco U.S. postretirement health care plan was merged with the Ecolab U.S. postretirement health care plan. As a result of these actions, the Company's U.S. postretirement health care costs decreased by $5 million in 2016.

Assumed health care cost trend rates have an effect on the amounts reported for the Company's U.S. postretirement health care benefits plan. A one-percentage point change in the assumed health care cost trend rates would have an immaterial impact on total service and interest costs as well as total postretirement benefit obligation.

Plan Asset Management

The Company's U.S. investment strategy and policies are designed to maximize the possibility of having sufficient funds to meet the long-term liabilities of the pension fund, while achieving a balance between the goals of asset growth of the plan and keeping risk at a reasonable level. Current income is not a key goal of the policy.

The asset allocation position reflects the Company's ability and willingness to accept relatively more short-term variability in the performance of the pension plan portfolio in exchange for the expectation of better long-term returns, lower pension costs and better funded status in the long run. The pension fund is diversified across a number of asset classes and securities. Selected individual portfolios within the asset classes may be undiversified while maintaining the diversified nature of total plan assets. The Company has no significant concentration of risk in its U.S. plan assets.

Assets of funded retirement plans outside the U.S. are managed in each local jurisdiction and asset allocation strategy is set in accordance with local rules, regulations and practice. Therefore, no overall target asset allocation is presented. Although non-U.S. equity securities are all considered international for the Company, some equity securities are considered domestic for the local plan. The funds are invested in a variety of equities, bonds and real estate investments and, in some cases, the assets are managed by insurance companies which may offer a guaranteed rate of return. The Company has no significant concentration of risk in its international plan assets.

The fair value hierarchy is used to categorize investments measured at fair value in one of three levels in the fair value hierarchy. This categorization is based on the observability of the inputs used in valuing the investments. See Note 7 for definitions of these levels.

The fair value of the Company's U.S. plan assets for its defined benefit pension and postretirement health care benefit plans are as follows:

(millions)	Fair Value as of December 31, 2017 Level 1	Level 2	Total	Fair Value as of December 31, 2016 Level 1	Level 2	Total
Cash	$8.0		$8.0	$6.3		$6.3
Equity securities:						
Large cap equity	869.8		869.8	696.0		696.0
Small cap equity	198.4		198.4	179.0		179.0
International equity	340.2		340.2	293.4		293.4
Fixed income:						
Core fixed income	390.0		390.0	351.5		351.5
High-yield bonds	109.9		109.9	107.6		107.6
Emerging markets	42.9		42.9	33.5		33.5
Insurance company accounts		$0.3	0.3	-	$0.3	0.3
Total investments at fair value	1,959.2	0.3	1,959.5	1,667.3	0.3	1,667.6
Investments measured at NAV			274.5			292.1
Total	$1,959.2	$0.3	$2,234.0	$1,667.3	$0.3	$1,959.7

The Company had no level 3 assets as part of its U.S. plan assets as of December 31, 2017 or 2016.

The allocation of the Company's U.S. plan assets for its defined benefit pension and postretirement health care benefit plans are as follows:

Asset Category	Target Asset Allocation Percentage		Percentage of Plan Assets	
December 31 (%)	2017	2016	2017	2016
Cash	- %	- %	- %	- %
Equity securities:				
Large cap equity	34	34	39	36
Small cap equity	9	9	9	9
International equity	15	15	15	15
Fixed income:				
Core fixed income	18	18	18	18
High-yield bonds	5	5	5	5
Emerging markets	2	2	2	2
Other:				
Real estate	6	6	7	7
Private equity	8	6	5	5
Distressed debt	3	-	-	-
Hedge funds	-	5	-	3
Total	100 %	100 %	100 %	100 %

The fair value of the Company's international plan assets for its defined benefit pension plans are as follows:

(millions)	Fair Value as of December 31, 2017 Level 1	Level 2	Total	Fair Value as of December 31, 2016 Level 1	Level 2	Total
Cash	$8.7		$8.7	$5.5		$5.5
Equity securities:						
International equity		442.2	442.2	-	363.1	363.1
Fixed income:			-			
Corporate bonds	8.2	173.0	181.2	6.4	164.6	171.0
Government bonds	12.4	177.6	190.0	9.5	145.6	155.1
Insurance company accounts	-	144.1	144.1		114.0	114.0
Total investments at fair value	29.3	936.9	966.2	21.4	787.3	808.7
Investments measured at NAV			14.9			13.2
Total	$29.3	$936.9	$981.1	$21.4	$787.3	$821.9

The Company had no level 3 assets as part of its international plan assets as of December 31, 2017 or 2016.

The allocation of plan assets of the Company's international plan assets for its defined benefit pension plans are as follows:

Asset Category	Percentage of Plan Assets	
December 31 (%)	2017	2016
Cash	1 %	1 %
Equity securities:		
International equity	45	44
Fixed income:		
Corporate bonds	19	21
Government bonds	19	19
Total fixed income	38	40
Other:		
Insurance contracts	15	14
Real estate	1	1
Total	100 %	100 %

Cash Flows

As of year-end 2017, the Company's estimate of benefits expected to be paid in each of the next five fiscal years and in the aggregate for the five fiscal years thereafter for the Company's pension and postretirement health care benefit plans are as follows:

(millions)	All Plans
2018	$ 186
2019	201
2020	215
2021	225
2022	240
2023 - 2027	1,237

Depending on plan funding levels, the U.S. defined benefit qualified pension plan provides certain terminating participants with an option to receive their pension benefits in the form of lump sum payments.

The Company is currently in compliance with all funding requirements of its U.S. pension and postretirement health care plans. In September 2017, the Company made an $80 million voluntary contribution to its non-contributory qualified U.S. pension plan. In April of 2016, the Company made a $150 million voluntary contribution to its non-contributory qualified U.S. pension plan. The Company is required to fund certain international pension benefit plans in accordance with local legal requirements. The Company estimates contributions to be made to its international plans will approximate $49 million in 2018.

The Company seeks to maintain an asset balance that meets the long-term funding requirements identified by the projections of the pension plan's actuaries while simultaneously satisfying the fiduciary responsibilities prescribed in ERISA. The Company also takes into consideration the tax deductibility of contributions to the benefit plans.

The Company is not aware of any expected refunds of plan assets within the next twelve months from any of its existing U.S. or international pension or postretirement benefit plans.

Savings Plan and ESOP

The Company provides a 401(k) savings plan for the majority of its U.S. employees under the Company's two main 401(k) savings plans, the Ecolab Savings Plan and ESOP for Traditional Benefit Employees (the "Traditional Plan") and the Ecolab Savings Plan and ESOP (the "Ecolab Plan").

Employees under the Traditional Plan are limited to active employees accruing a final average pay or 5% cash balance benefits in the Ecolab Pension Plan. Employee before-tax contributions made under the Traditional Plan of up to 3% of eligible compensation are matched 100% by the Company and employee before-tax contributions over 3% and up to 5% of eligible compensation are matched 50% by the Company.

Employees under the Ecolab Plan are limited to active employees accruing benefits under the 3% cash balance formula of the Ecolab Pension Plan and employees of Nalco eligible for certain legacy final average pay benefits. Employee before-tax contributions made under the Ecolab Plan of up to 4% of eligible compensation are matched 100% by the Company and employee before-tax contributions over 4% and up to 8% of eligible compensation are matched 50% by the Company.

The Company's matching contributions are 100% vested immediately. The Company's matching contribution expense was $82 million, $74 million and $72 million in 2017, 2016 and 2015, respectively.

17. OPERATING SEGMENTS AND GEOGRAPHIC INFORMATION

The Company's organizational structure consists of global business unit and global regional leadership teams. The Company's eleven operating segments (ten following the divestiture of the Equipment Care operating segment in 2017) follow its commercial and product-based activities and are based on engagement in business activities, availability of discrete financial information and review of operating results by the Chief Operating Decision Maker at the identified operating segment level.

Nine of the Company's eleven operating segments have been aggregated into three reportable segments based on similar economic characteristics and future prospects, nature of the products and production processes, end-use markets, channels of distribution and regulatory environment. The Company's reportable segments are Global Industrial, Global Institutional and Global Energy. The Company's two operating segments, including Equipment Care prior to its sale in November 2017, that are primarily fee-for-service businesses have been combined into the Other segment and do not meet the quantitative criteria to be separately reported. The Company provides similar information for the Other segment as compared to its three reportable segments as the Company considers the information regarding its two underlying operating segments as useful in understanding its consolidated results.

The Company's eleven operating segments are aggregated as follows:

Global Industrial

Includes the Water, Food & Beverage, Paper, Life Sciences and Textile Care operating segments. It provides water treatment and process applications, and cleaning and sanitizing solutions primarily to large industrial customers within the manufacturing, food and beverage processing, chemical, mining and primary metals, power generation, pulp and paper, and commercial laundry industries. The underlying operating segments exhibit similar manufacturing processes, distribution methods and economic characteristics.

Global Institutional

Includes the Institutional, Specialty and Healthcare operating segments. It provides specialized cleaning and sanitizing products to the foodservice, hospitality, lodging, healthcare, government and education and retail industries. The underlying operating segments exhibit similar manufacturing processes, distribution methods and economic characteristics.

Global Energy

Includes the Energy operating segment. It serves the process chemicals and water treatment needs of the global petroleum and petrochemical industries in both upstream and downstream applications.

Other

Includes the Pest Elimination operating segment which provides services to detect, eliminate and prevent pests, such as rodents and insects. Prior to the sale in November 2017, the Equipment Care operating segment was also included, which provided kitchen repair and maintenance.

Comparability of Reportable Segments

The Company evaluates the performance of its non-U.S. dollar functional currency international operations based on fixed currency exchange rates, which eliminate the impact of exchange rate fluctuations on its international operations. Fixed currency amounts are updated annually at the beginning of each year based on translation into U.S. dollars at foreign currency exchange rates established by management, with all periods presented using such rates. Fixed currency rates are generally based on existing market rates at the time they are established. The "Fixed Currency Rate Change" column shown in the following table reflects the impact on previously reported values related to fixed currency exchange rates established by management at the beginning of 2017.

Effective in the first quarter of 2017, the Company established the Life Sciences operating segment, to align with the strategy for growth in the pharmaceutical and personal care manufacturing operations. Life Sciences is comprised of operations previously recorded in the Food & Beverage and Healthcare operating segments and has been aggregated into the Global Industrial reportable segment. The Company also made immaterial changes to its reportable segments, including the movement of certain customers and cost allocations between reportable segments. These changes are presented in "Segment Change" column of the table below.

The impact of the preceding changes on previously reported full year 2016 reportable segment net sales and operating income is summarized as follows:

	December 31, 2016			
(millions)	Values at 2016 Rates	Fixed Currency Rate Change	Segment Change	Values at 2017 Rates
Net Sales				
Global Industrial	$4,617.1	$6.9	$63.2	$4,687.2
Global Institutional	4,495.6	7.7	(63.2)	4,440.1
Global Energy	3,035.8	40.0	-	3,075.8
Other	806.5	(4.8)	-	801.7
Subtotal at fixed currency rates	12,955.0	49.8	-	13,004.8
Effect of foreign currency translation	197.8	(49.8)	-	148.0
Consolidated reported GAAP net sales	$13,152.8	$-	$-	$13,152.8
Operating Income				
Global Industrial	$703.0	$(0.9)	$17.9	$720.0
Global Institutional	966.7	3.0	(19.2)	950.5
Global Energy	337.1	7.9	1.7	346.7
Other	148.1	(2.5)	(0.4)	145.2
Corporate	(272.1)	(0.5)	-	(272.6)
Subtotal at fixed currency rates	1,882.8	7.0	-	1,889.8
Effect of foreign currency translation	32.2	(7.0)	-	25.2
Consolidated reported GAAP operating income	$1,915.0	$-	$-	$1,915.0

	December 31, 2015			
(millions)	Values at 2016 Rates	Fixed Currency Rate Change	Segment Change	Values at 2017 Rates
Net Sales				
Global Industrial	$4,485.5	13.2	52.4	4,551.1
Global Institutional	4,210.9	6.1	(52.4)	4,164.6
Global Energy	3,470.8	49.3	-	3,520.1
Other	747.1	(4.4)	-	742.7
Subtotal at fixed currency rates	12,914.3	64.2	-	12,978.5
Effect of foreign currency translation	630.8	(64.2)	-	566.6
Consolidated reported GAAP net sales	$13,545.1	$-	$-	$13,545.1
Operating Income				
Global Industrial	$626.4	$0.7	$11.8	$638.9
Global Institutional	876.6	2.8	(12.3)	867.1
Global Energy	465.5	8.5	1.3	475.3
Other	127.5	(2.1)	(0.8)	124.6
Corporate	(663.8)	(0.6)	-	(664.4)
Subtotal at fixed currency rates	1,432.2	9.3	-	1,441.5
Effect of foreign currency translation	129.1	(9.3)	-	119.8
Consolidated reported GAAP operating income	$1,561.3	$-	$-	$1,561.3

Reportable Segment Information

Financial information for each of the Company's reportable segments is as follows:

	Net Sales			Operating Income (Loss)		
(millions)	2017	2016	2015	2017	2016	2015
Global Industrial	$4,878.5	$4,687.2	$4,551.1	$722.0	$720.0	$638.9
Global Institutional	4,744.9	4,440.1	4,164.6	985.7	950.5	867.1
Global Energy	3,199.3	3,075.8	3,520.1	338.5	346.7	475.3
Other	823.5	801.7	742.7	149.3	145.2	124.6
Corporate	-	-	-	(208.6)	(272.6)	(664.4)
Subtotal at fixed currency	13,646.2	13,004.8	12,978.5	1,986.9	1,889.8	1,441.5
Effect of foreign currency translation	192.1	148.0	566.6	32.9	25.2	119.8
Consolidated	$13,838.3	$13,152.8	$13,545.1	$2,019.8	$1,915.0	$1,561.3

The profitability of the Company's operating segments is evaluated by management based on operating income. The Company has no intersegment revenues.

Consistent with the Company's internal management reporting, Corporate amounts in the table above include intangible asset amortization specifically from the Nalco merger and special (gains) and charges, as discussed in Note 3, that are not allocated to the Company's reportable segments.

The Company has an integrated supply chain function that serves all of its reportable segments. As such, asset and capital expenditure information by reportable segment has not been provided and is not available, since the Company does not produce or utilize such information internally. In addition, although depreciation and amortization expense is a component of each reportable segment's operating results, it is not discretely identifiable.

Sales of warewashing products were approximately 11% of consolidated net sales in 2017 and 2016 and 10% of consolidated net sales in 2015.

The majority of the Company's revenue is driven by the sale of its chemical products, with any corresponding service generally considered incidental to the product sale. The exception to this is the Pest Elimination and Equipment Care operating segments, which are within the Other segment and as previously noted, are primarily fee-for-service businesses. In addition, the Global Industrial, Global Institutional and Global Energy reportable segments derive a portion of revenue directly from service offerings.

Total service revenue at public exchange rates by reportable segment is shown below.

	Service Revenue		
(millions)	2017	2016	2015
Global Industrial	$185.5	$162.7	$162.9
Global Institutional	80.9	72.2	70.5
Global Energy	179.6	186.8	202.8
Other	750.7	711.3	670.6

Geographic Information

Net sales and long-lived assets at public exchange rates by geographic region are as follows:

	Net Sales			Long-Lived Assets, net	
(millions)	2017	2016	2015	2017	2016
United States	$7,324.5	$7,035.5	$7,073.2	$8,853.7	$8,790.8
Europe	2,652.2	2,361.8	2,442.1	2,623.8	1,547.6
Asia Pacific, excluding Greater China	1,184.9	1,159.1	1,131.5	1,022.5	992.8
Latin America	892.8	852.8	1,100.8	605.8	567.7
MEA	655.7	667.4	682.3	310.1	296.8
Canada	644.5	576.9	616.6	649.1	624.8
Greater China	483.7	499.3	498.6	1,301.0	1,230.3
Total	$13,838.3	$13,152.8	$13,545.1	$15,366.0	$14,050.8

Net sales by geographic region were determined based on origin of sale. Geographic data for long-lived assets is based on physical location of those assets. There were no sales from a single foreign country or individual customer that were material to the Company's consolidated net sales.

18. QUARTERLY FINANCIAL DATA (UNAUDITED)

(millions, except per share)	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Year
2017					
Net sales	**$3,161.6**	**$3,462.7**	**$3,563.3**	**$3,650.7**	**$13,838.3**
Operating expenses					
Cost of sales (a)	**1,691.5**	**1,871.6**	**1,891.3**	**1,950.7**	**7,405.1**
Selling, general and administrative expenses	**1,090.6**	**1,115.3**	**1,087.3**	**1,123.9**	**4,417.1**
Special (gains) and charges	**6.2**	**36.8**	**4.9**	**(51.6)**	**(3.7)**
Operating income	**373.3**	**439.0**	**579.8**	**627.7**	**2,019.8**
Interest expense, net (a)	**62.5**	**59.6**	**55.1**	**77.8**	**255.0**
Income before income taxes	**310.8**	**379.4**	**524.7**	**549.9**	**1,764.8**
Provision for income taxes	**54.0**	**81.3**	**128.9**	**(21.8)**	**242.4**
Net income including noncontrolling interest	**256.8**	**298.1**	**395.8**	**571.7**	**1,522.4**
Net income attributable to noncontrolling interest	**3.3**	**1.5**	**3.4**	**5.8**	**14.0**
Net income attributable to Ecolab	**$253.5**	**$296.6**	**$392.4**	**$565.9**	**$1,508.4**
Earnings attributable to Ecolab per common share					
Basic	**$ 0.87**	**$ 1.02**	**$ 1.36**	**$ 1.96**	**$ 5.21**
Diluted	**$ 0.86**	**$ 1.01**	**$ 1.34**	**$ 1.93**	**$ 5.13**
Weighted-average common shares outstanding					
Basic	**290.6**	**289.8**	**289.0**	**289.1**	**289.6**
Diluted	**295.0**	**294.1**	**293.4**	**293.6**	**294.0**
2016					
Net sales	$3,097.4	$3,317.2	$3,386.1	$3,352.1	$13,152.8
Operating expenses					
Cost of sales (a)	1,631.4	1,785.2	1,737.2	1,745.1	6,898.9
Selling, general and administrative expenses	1,088.2	1,093.3	1,071.6	1,046.3	4,299.4
Special (gains) and charges	6.3	26.2	3.2	3.8	39.5
Operating income	371.5	412.5	574.1	556.9	1,915.0
Interest expense, net	66.1	65.3	64.9	68.3	264.6
Income before income taxes	305.4	347.2	509.2	488.6	1,650.4
Provision for income taxes	73.4	83.6	129.7	116.6	403.3
Net income including noncontrolling interest	232.0	263.6	379.5	372.0	1,247.1
Net income (loss) attributable to noncontrolling interest	1.2	5.2	5.4	5.7	17.5
Net income attributable to Ecolab	$230.8	$258.4	$374.1	$366.3	$1,229.6
Earnings attributable to Ecolab per common share					
Basic	$ 0.78	$ 0.88	$ 1.28	$ 1.26	$ 4.20
Diluted	$ 0.77	$ 0.87	$ 1.27	$ 1.24	$ 4.14
Weighted-average common shares outstanding					
Basic	294.4	292.4	291.6	291.7	292.5
Diluted	298.3	296.5	295.7	295.5	296.7

Per share amounts do not necessarily sum due to changes in the calculation of shares outstanding for each discrete period and rounding.

(a) Cost of sales includes special charges of $1.5, $24.4, $0.3, and $17.8 in Q1, Q2, Q3 and Q4 of 2017, respectively and $61.9 and $4.1 in Q2 and Q4 of 2016, respectively. Net interest expense includes special charges of $21.9 in Q4 of 2017.

Item 9. Changes in and Disagreements With Accountants on Accounting and Financial Disclosure .

None.

Item 9A. Controls and Procedures .

Disclosure Controls and Procedures

As of December 31, 2017, we carried out an evaluation, under the supervision and with the participation of our management, including our Chairman of the Board and Chief Executive Officer and our Chief Financial Officer, of the effectiveness of the design and operation of our disclosure controls and procedures (as such term is defined in Rule 13a-15(e) under the Securities Exchange Act of 1934 as amended). Based upon that evaluation, our Chairman of the Board and Chief Executive Officer and our Chief Financial Officer concluded that our disclosure controls and procedures are effective.

Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. Under the supervision and with the participation of our management, including our Chairman of the Board and Chief Executive Officer and our Chief Financial Officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting based on the 2013 framework in *Internal Control – Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on our evaluation under this framework, our management concluded that our internal control over financial reporting was effective as of December 31, 2017.

The Company's independent registered public accounting firm, PricewaterhouseCoopers LLP, has audited the effectiveness of the Company's internal control over financial reporting as of December 31, 2017. Their report, and our management reports, can be found in Item 8 of Part II of this Form 10-K.

During the period October 1 - December 31, 2017 there were no changes in our internal control over financial reporting that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

We are implementing an enterprise resource planning ("ERP") system upgrade, which is expected to occur in phases over the next several years beginning in 2018. This upgrade, which includes supply chain and certain finance functions, is expected to improve the efficiency of certain financial and related transactional processes. The upgrade of the ERP system will affect the processes that constitute our internal control over financial reporting and will require testing for effectiveness.

Item 9B. Other Information.

None.

PART III

Item 10. Director s, Executive Officers and Corporate Governance .

Information about our directors is incorporated by reference from the discussion under the heading "Proposal 1: Election of Directors" located in the Proxy Statement. Information about compliance with Section 16(a) of the Securities Exchange Act of 1934, as amended, is incorporated by reference from the discussion under the heading "Section 16(a) Beneficial Ownership Reporting Compliance" located in the Proxy Statement. Information about our Audit Committee, including the members of the Committee, and our Audit Committee financial experts, is incorporated by reference from the discussion under the heading "Corporate Governance," and sub-headings "Board Committees" and "Audit Committee," located in the Proxy Statement. Information about our Code of Conduct is incorporated by reference from the discussion under the heading "Corporate Governance Materials and Code of Conduct" located in the Proxy Statement. Information regarding our executive officers is presented under the heading "Executive Officers of the Registrant" in Part I, Item 1 of this Form 10-K, and is incorporated herein by reference.

Item 11. Executive Compensation .

Information appearing under the following headings of the Proxy Statement is incorporated herein by reference:

- Director Compensation for 2017
- Compensation Risk Analysis
- Compensation Committee Interlocks and Insider Participation
- Compensation Committee Report
- Compensation Discussion and Analysis
- Summary Compensation Table for 2017
- Grants of Plan-Based Awards for 2017
- Outstanding Equity Awards at Fiscal Year-End for 2017
- Option Exercises and Stock Vested for 2017
- Pension Benefits for 2017
- Non-Qualified Deferred Compensation for 2017
- Potential Payments Upon Termination or Change in Control
- Pay Ratio Disclosure

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters .

Information appearing under the heading entitled "Security Ownership" located in the Proxy Statement is incorporated herein by reference.

A total of 1,210,751 shares of Common Stock held by our directors and executive officers, some of whom may be deemed to be "affiliates" of the Company, have been excluded from the computation of market value of our Common Stock on the cover page of this Form 10-K. This total represents that portion of the shares reported as beneficially owned by our directors and executive officers as of June 30, 2017 which are actually issued and outstanding.

Equity Compensation Plan Information

Plan Category	(a) Number of securities to be issued upon exercise of outstanding options, warrants and rights	(b) Weighted average exercise price of outstanding options, warrants and rights	(c) Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a))
Equity compensation plans approved by security holders	13,078,614 (1)	$ 96.31 (1)	11,685,090
Equity compensation plans not approved by security holders	153,603 (2)	55.60 (2)	-
Total	13,232,217	$ 95.76	11,685,090

(1) Includes 239,966 Common Stock equivalents representing deferred compensation stock units earned by non-employee directors under our 2001 Non-Employee Director Stock Option and Deferred Compensation Plan, 1,362,836 Common Stock equivalents under our 2010 Stock Incentive Plan representing performance-based restricted stock units payable to employees, and 249,402 Common Stock equivalents under our 2010 Stock Incentive Plan representing restricted stock units payable to employees. All of the Common Stock equivalents described in this footnote (1) are not included in the calculation of weighted average exercise price

of outstanding options, warrants and rights in column (b) of this table. The reported amount additionally includes 60,809 shares of Common Stock subject to stock options assumed by us in connection with the Nalco merger. Such options, which have a weighted-average exercise price of $29.25, are included in the calculation of weighted average exercise price of outstanding options, warrants and rights in column (b) of this table.

(2) The reported amount represents shares of our Common Stock which were formerly reserved for future issuance under the Amended and Restated Nalco Holding Company 2004 Stock Incentive Plan (the “rollover shares”) and granted to legacy Nalco associates on December 1, 2011, under the Ecolab Inc. 2010 Stock Incentive Plan in the form of stock options. These rollover shares are deemed exempt from shareholder approval under Rule 303A.08 of the New York Stock Exchange in accordance with our notice to the New York Stock Exchange dated December 16, 2011. The Nalco plan was amended to prohibit future grants.

Item 13. Certain Relationships and Related Transactions, and Director Independence.

Information appearing under the headings entitled “Director Independence Standards and Determinations” and “Related Person Transactions” located in the Proxy Statement is incorporated herein by reference.

Item 14. Principal Accounting Fees and Services.

Information appearing under the heading entitled “Audit Fees” located in the Proxy Statement is incorporated herein by reference.

PART IV

Item 15. Exhibit s, Financial Statement Schedules .

The following information required under this item is filed as part of this report:

(a)(1) Financial Statements.

Exhibit No.:	Document:	Method of Filing:
(a)(2)	Financial Statement Schedules.	
	All financial statement schedules are omitted because they are not applicable or the required information is shown in the consolidated financial statements or the accompanying notes to the consolidated financial statements. The separate financial statements and summarized financial information of subsidiaries not consolidated and of fifty percent or less owned persons have been omitted because they do not satisfy the requirements for inclusion in this Form 10-K.	
(a)(3)	The documents below are filed as exhibits to this Report. We will, upon request and payment of a fee not exceeding the rate at which copies are available from the Securities and Exchange Commission, furnish copies of any of the following exhibits to stockholders.	
(2.1)	Agreement and Plan of Merger, dated July 19, 2011, among Ecolab Inc., Sustainability Partners Corporation and Nalco Holding Company.	Incorporated by reference to Exhibit (2.1) of our Form 8-K, dated July 19, 2011. (File No. 001-9328)
(2.2)	Agreement and Plan of Merger, dated October 11, 2012, among Ecolab Inc., OFC Technologies Corp. and Permian Mud Service, Inc.	Incorporated by reference to Exhibit (2.1) of our Form 8-K, dated October 12, 2012. (File No. 001-9328)
(2.3)	First Amendment dated November 28, 2012, to Agreement and Plan of Merger dated October 11, 2012, among Ecolab Inc., OFC Technologies Corp. and Permian Mud Service, Inc.	Incorporated by reference to Exhibit (2.3) of our Form 10-K Annual Report for the year ended December 31, 2012. (File No. 001-9328)
(2.4)	Second Amendment dated November 30, 2012, to Agreement and Plan of Merger dated October 11, 2012, among Ecolab Inc., OFC Technologies Corp. and Permian Mud Service, Inc.	Incorporated by reference to Exhibit (2.1) of our Form 8-K, dated November 30, 2012. (File No. 001-9328)

Exhibit No.:	Document:	Method of Filing:
(2.5)	Third Amendment dated December 28, 2012, to Agreement and Plan of Merger dated October 11, 2012, among Ecolab Inc., OFC Technologies Corp. and Permian Mud Services, Inc.	Incorporated by reference to Exhibit (2.4) of our Form 8-K, dated April 10, 2013. (File No. 001-9328)
(2.6)	Fourth Amendment dated April 10, 2013, to Agreement and Plan of Merger dated October 11, 2012, among Ecolab Inc., OFC Technologies Corp. and Permian Mud Services, Inc.	Incorporated by reference to Exhibit (2.5) of our Form 8-K, dated April 10, 2013. (File No. 001-9328)
(3.1)	Restated Certificate of Incorporation of Ecolab Inc., dated January 2, 2013.	Incorporated by reference to Exhibit (3.2) of our Form 8-K, dated January 2, 2013. (File No. 001-9328)
(3.2)	By-Laws, as amended through December 3, 2015.	Incorporated by reference to Exhibit (3.1) of our Form 8-K, dated December 3, 2015. (File No. 001-9328)
(4.1)	Common Stock.	See Exhibits (3.1) and (3.2)
(4.2)	Form of Common Stock Certificate effective October 2, 2017	Incorporated by reference to Exhibit (4.1) of our Form 10-Q Quarterly Report for the quarter ended September 30, 2017. (File No. 001-9328)
(4.3)	Amended and Restated Indenture, dated January 9, 2001, between Ecolab Inc. and The Bank of New York Trust Company, N.A. (as successor in interest to J.P. Morgan Trust Company, N.A. and Bank One, N.A.), as Trustee.	Incorporated by reference to Exhibit (4)(A) of our Form 8-K, dated January 23, 2001. (File No. 001-9328)
(4.4)	Second Supplemental Indenture, dated December 8, 2011, between Ecolab Inc., Wells Fargo Bank, National Association, as Trustee and the Bank of New York Mellon Trust Company, N.A. (formerly known as The Bank of New York Trust Company, N.A., as successor in interest to J.P. Morgan Trust Company, N.A. and Bank One, N.A.), as original trustee.	Incorporated by reference to Exhibit (4.2) of our Form 8-K, dated December 5, 2011. (File No. 001-9328)
(4.5)	Forms of 4.350% Notes due 2021 and 5.500% Notes due 2041.	Included in Exhibit (4.4) above.
(4.6)	Indenture, dated January 12, 2015, between Ecolab Inc. and Wells Fargo Bank, National Association, as Trustee.	Incorporated by reference to Exhibit 4.1 of our Form 8-K, dated January 15, 2015. (File No. 001-9328)
(4.7)	First Supplemental Indenture, dated January 15, 2015, between Ecolab Inc. and Wells Fargo Bank, National Association, as Trustee.	Incorporated by reference to Exhibit 4.2 of our Form 8-K, dated January 15, 2015. (File No. 001-9328)
(4.8)	Form of 2.250% Notes due 2020.	Included in Exhibit (4.7) above.
(4.9)	Second Supplemental Indenture, dated July 8, 2015, by and among Ecolab Inc., Wells Fargo Bank, National Association, as Trustee, Elavon Financial Services Limited, UK Branch, as paying agent, and Elavon Financial Services Limited, as transfer agent and registrar.	Incorporated by reference to Exhibit (4.2) of our Form 8-K, dated July 8, 2015. (File No. 001-9328)
(4.10)	Form of 2.625% Euro Notes due 2025.	Included in Exhibit (4.9) above.
(4.11)	Third Supplemental Indenture, dated January 14, 2016, between Ecolab Inc. and Wells Fargo Bank, National Association, as Trustee.	Incorporated by reference to Exhibit (4.2) of our Form 8-K, dated January 11, 2016. (File No. 001-9328)
(4.12)	Forms of 2.000% Notes due 2019 and 3.250% Notes due 2023.	Included in Exhibit (4.11) above.

Exhibit No.:	Document:	Method of Filing:
(4.13)	Fourth Supplemental Indenture, dated October 18, 2016, between Ecolab Inc. and Wells Fargo Bank, National Association, as Trustee.	Incorporated by reference to Exhibit (4.2) of our Form 8-K, dated October 13, 2016. (File No. 001-9328)
(4.14)	Forms of 2.700% Notes due 2026 and 3.700% Notes due 2046.	Included in Exhibit (4.13) above.
(4.15)	Fifth Supplemental Indenture, dated December 8, 2016, by and among Ecolab Inc., Wells Fargo Bank, National Association, as Trustee, Elavon Financial Services DAC, UK Branch, as paying agent, and Elavon Financial Services DAC, as transfer agent and registrar.	Incorporated by reference to Exhibit (4.2) of our Form 8-K, dated December 1, 2016. (File No. 001-9328)
(4.16)	Form of 1.000% Euro Notes due 2024.	Included in Exhibit (4.15) above.
(4.17)	Sixth Supplemental Indenture, dated August 10, 2017, between the Company and Wells Fargo Bank, National Association, as Trustee.	Incorporated by reference to Exhibit (4.2) of our Form 8-K, dated August 10, 2017. (File No. 001-9328)
(4.18)	Form of 2.375% Notes due 2022.	Included in Exhibit (4.17) above.
(4.19)	Seventh Supplemental Indenture, dated November 27, 2017, between the Company and Wells Fargo Bank, National Association, as Trustee.	Incorporated by reference to Exhibit (4.2) of our Form 8-K, dated November 30, 2017. (File No. 001-9328)
(4.20)	Form of 3.250% Notes due 2027.	Included in Exhibit (4.19) above.
(4.21)	Form of 3.950% Notes due 2047.	Included in Exhibit (4.19) above.
(4.22)	Registration Rights Agreement, dated November 27, 2017, by and among Ecolab Inc., Citigroup Global Markets Inc., Credit Suisse Securities (USA) LLC, J.P. Morgan Securities LLC, Merrill Lynch, Pierce, Fenner & Smith Incorporated and MUFG Securities Americas Inc.	Incorporated by reference to Exhibit (4.5) of our Form 8-K, dated November 30, 2017. (File No. 001-9328)
	Copies of other constituent instruments defining the rights of holders of our long-term debt are not filed herewith, pursuant to Section (b)(4)(iii) of Item 601 of Regulation S-K, because the aggregate amount of securities authorized under each of such instruments is less than 10% of our total assets on a consolidated basis. We will, upon request by the Securities and Exchange Commission, furnish to the Commission a copy of each such instrument.	
(10.1)(i)	Second Amended and Restated $2.0 billion 5-Year Revolving Credit Facility, dated November 28, 2017, among Ecolab Inc., the lenders party thereto, the issuing banks party thereto, Bank of America, N.A., as administrative agent and swing line bank, and Citibank, N.A., JPMorgan Chase Bank, N.A. and The Bank of Tokyo-Mitsubishi UFJ, Ltd., as co-syndication agents.	Incorporated by reference to Exhibit (10.1) of our Form 8-K, dated November 30, 2017. (File No. 001-9328)
(10.2)	Note Purchase Agreement, dated October 27, 2011, by and among Ecolab Inc. and the Purchasers party thereto.	Incorporated by reference to Exhibit (10.1) of our Form 8-K, dated October 27, 2011. (File No. 001-9328)

Exhibit No.:		Document:		Method of Filing:
(10.3)		Documents comprising global Commercial Paper Programs.		
		(i)	U.S. $2,000,000,000 Euro-Commercial Paper Programme.	
			(a) Amended and Restated Dealer Agreement, dated 9 June 2017, between Ecolab Inc., Ecolab Lux 1 S.À R.L., Ecolab Lux 2 S.À R.L., Ecolab NL 10 B.V. and Ecolab NL 11 B.V. (as Issuers), Ecolab Inc. (as Guarantor in respect of the notes issued by Ecolab Lux 1 S.À R.L., Ecolab Lux 2 S.À R.L. and Ecolab NL 10 B.V. and Ecolab NL 11 B.V.), Credit Suisse Securities (Europe) Limited (as Arranger), and Citibank Europe plc, UK Branch and Credit Suisse Securities (Europe) Limited (as Dealers).	Incorporated by reference to Exhibit (10.1)(a) of our Form 10-Q for the quarter ended June 30, 2017. (File No. 001-9328)
			(b) Amended and Restated Note Agency Agreement, dated 9 June 2017, between Ecolab Inc., Ecolab Lux 1 S.À R.L., Ecolab Lux 2 S.À R.L., Ecolab NL 10 B.V. Ecolab NL 11 B.V. (as Issuers), Ecolab Inc. (as Guarantor in respect of the notes issued by Ecolab Lux 1 S.À R.L., Ecolab Lux 2 S.À R.L., Ecolab NL 10 B.V. and Ecolab NL 11 B.V.), and Citibank, N.A., London Branch (as Issue and Paying Agent).	Incorporated by reference to Exhibit (10.1)(b) of our Form 10-Q for the quarter ended June 30, 2017. (File No. 001-9328)
			(c) Deed of Covenant made on 9 June 2017 by Ecolab Inc., Ecolab Lux 1 S.À R.L., Ecolab Lux 2 S.À R.L., Ecolab NL 10 B.V. and Ecolab NL 11 B.V. (as Issuers)	Incorporated by reference to Exhibit (10.1)(c) of our Form 10-Q for the quarter ended June 30, 2017. (File No. 001-9328)
			(d) Deed of Guarantee made on 9 June 2017 by Ecolab Inc. (in respect of notes issued by Ecolab Lux 1 S.À R.L., Ecolab Lux 2 S.À R.L., Ecolab NL 10 B.V. and Ecolab NL 11 B.V.)	Incorporated by reference to Exhibit (10.1)(d) of our Form 10-Q for the quarter ended June 30, 2017. (File No. 001-9328)
		(ii)	U.S. $2,000,000,000 U.S. Commercial Paper Program.	
			(a) Form of Commercial Paper Dealer Agreement for 4(a)(2) Program, dated September 22, 2014. The dealers for the program are Citigroup Global Markets Inc., Credit Suisse Securities (USA) LLC, J.P. Morgan Securities LLC, Merrill Lynch, Pierce, Fenner & Smith Incorporated, Mizuho Securities USA Inc., and Wells Fargo Securities, LLC.	Incorporated by reference to Exhibit (10.1)(a) of our Form 10-Q for the quarter ended September 30, 2014. (File No. 001-9328)
			(b) Issuing and Paying Agency Agreement, dated September 18, 2017, between Ecolab Inc. and MUFG Union Bank, N.A., as Issuing and Paying Agent.	Incorporated by reference to Exhibit (10.1)(a) of our Form 10-Q for the quarter ended September 30, 2017. (File No. 001-9328)
			(c) Corporate Commercial Paper – Master Note, dated September 18, 2017, together with annex thereto.	Incorporated by reference to Exhibit (10.1)(b) of our Form 10-Q for the quarter ended September 30, 2017. (File No. 001-9328)
(10.4)	†	(i)	Ecolab Inc. 2001 Non-Employee Director Stock Option and Deferred Compensation Plan, as amended and restated, effective as of August 1, 2013.	Incorporated by reference to Exhibit (10.6) of our Form 10-K Annual Report for the year ended December 31, 2013. (File No. 001-9328)
	†	(ii)	Declaration of Amendment, dated May 5, 2016, to Ecolab Inc. 2001 Non-Employee Director Stock Option and Deferred Compensation Plan, as amended and restated, effective as of August 1, 2013.	Incorporated by reference to Exhibit (10.1) of our Form 10-Q for the quarter ended June 30, 2016. (File No. 001-9328)

Exhibit No.:			Document:	Method of Filing:
	†	(iii)	Master Agreement Relating to Periodic Options, as amended, effective as of May 1, 2004.	Incorporated by reference to Exhibit (10)D(ii) of our Form 10-Q for the quarter ended June 30, 2004. (File No. 001-9328)
	†	(iv)	Amendment No. 1 to Master Agreement Relating to Periodic Options, as amended, effective as of May 2, 2008.	Incorporated by reference to Exhibit (10)B of our Form 10-Q for the quarter ended September 30, 2008. (File No. 001-9328)
(10.5)		(i)	Note Purchase Agreement, dated July 26, 2006, by and among Ecolab Inc. and the Purchasers party thereto.	Incorporated by reference to Exhibit (10) of our Form 8-K, dated July 26, 2006. (File No. 001-9328)
		(ii)	First Amendment, dated October 27, 2011, to Note Purchase Agreement, dated July 26, 2006, by and among Ecolab Inc. and the Noteholders party thereto.	Incorporated by reference to Exhibit (10.2) of our Form 8-K, dated October 27, 2011. (File No. 001-9328)
(10.6)	†		Form of Director Indemnification Agreement. Substantially identical agreements are in effect as to each of our directors.	Incorporated by reference to Exhibit (10)I of our Form 10-K Annual Report for the year ended December 31, 2003. (File No. 001-9328)
(10.7)	†	(i)	Ecolab Executive Death Benefits Plan, as amended and restated, effective as of March 1, 1994.	Incorporated by reference to Exhibit (10)H(i) of our Form 10-K Annual Report for the year ended December 31, 2006. See also Exhibit (10.12) hereof. (File No. 001-9328)
	†	(ii)	Amendment No. 1 to Ecolab Executive Death Benefits Plan, effective as of July 1, 1997.	Incorporated by reference to Exhibit (10)H(ii) of our Form 10-K Annual Report for the year ended December 31, 1998. (File No. 001-9328)
	†	(iii)	Second Declaration of Amendment to Ecolab Executive Death Benefits Plan, effective as of March 1, 1998.	Incorporated by reference to Exhibit (10)H(iii) of our Form 10-K Annual Report for the year ended December 31, 1998. (File No. 001-9328)
	†	(iv)	Amendment No. 3 to the Ecolab Executive Death Benefits Plan, effective as of August 12, 2005.	Incorporated by reference to Exhibit (10)B of our Form 8-K, dated December 13, 2005. (File No. 001-9328)
	†	(v)	Amendment No. 4 to the Ecolab Executive Death Benefits Plan, effective as of January 1, 2005.	Incorporated by reference to Exhibit (10)H(v) of our Form 10-K Annual Report for the year ended December 31, 2009. (File No. 001-9328)
	†	(vi)	Amendment No. 5 to the Ecolab Executive Death Benefits Plan, effective as of May 6, 2015.	Incorporated by reference to Exhibit 10.2 of our Form 10-Q for the quarter ended June 30, 2015. (File No. 001-9328)
	†	(vii)	Amendment No. 6 to the Ecolab Executive Death Benefits Plan, effective as of June 23, 2017	Incorporated by reference to Exhibit 10.1(vii) of Ecolab's Form 8-K dated June 23, 2017. (File No. 001-9328)
(10.8)	†	(i)	Ecolab Executive Long-Term Disability Plan, as amended and restated, effective as of January 1, 1994.	Incorporated by reference to Exhibit (10)I of our Form 10-K Annual Report for the year ended December 31, 2004. See also Exhibit (10.12) hereof. (File No. 001-9328).
	†	(ii)	Amendment No. 1 to the Ecolab Executive Long-Term Disability Plan, effective as of August 21, 2015.	Incorporated by reference to Exhibit 10.1 of our Form 10-Q for the quarter ended September 30, 2015. (File No. 001-9328)
(10.9)	†	(i)	Ecolab Supplemental Executive Retirement Plan, as amended and restated, effective as of January 1, 2014.	Incorporated by reference to Exhibit 10.11 of our Form 10-K Annual Report for the year ended December 31, 2013. See also Exhibit (10.12) hereof. (File No. 001-9328).

Exhibit No.:			Document:	Method of Filing:
	†	(ii)	Amendment No. 1 to the Ecolab Supplemental Executive Retirement Plan, effective as of May 6, 2015.	Incorporated by reference to Exhibit 10.1 of our Form 10-Q for the quarter ended June 30, 2015. (File No. 001-9328)
(10.10)	†		Ecolab Mirror Savings Plan, as amended and restated, effective as of January 1, 2014.	Incorporated by reference to Exhibit 10.12 of our Form 10-K Annual Report for the year ended December 31, 2013. See also Exhibit (10.12) hereof. (File No. 001-9328)
(10.11)	†		Ecolab Mirror Pension Plan, as amended and restated, effective as of January 1, 2014.	Incorporated by reference to Exhibit 10.13 of our Form 10-K Annual Report for the year ended December 31, 2013. See also Exhibit (10.12) hereof. (File No. 001-9328).
(10.12)	†	(i)	Ecolab Inc. Administrative Document for Non-Qualified Plans, as amended and restated, effective as of January 1, 2011.	Incorporated by reference to Exhibit (10.16) of our Form 10-K Annual Report for the year ended December 31, 2011. (File No. 001-9328)
	†	(ii)	Amendment No. 1 to the Ecolab Inc. Administrative Document for Non-Qualified Plans, effective as of January 1, 2013.	Incorporated by reference to Exhibit (10.14)(II) of our Form 10-K Annual Report for the year ended December 31, 2013. (File No. 001-9328)
(10.13)	†		Ecolab Inc. Management Performance Incentive Plan, as amended and restated on February 27, 2014.	Incorporated by reference to Exhibit (10.1) of our Form 8-K, dated May 9, 2014. (File No. 001-9328)
(10.14)	†	(i)	Ecolab Inc. Change in Control Severance Compensation Policy, as amended and restated, effective as of February 26, 2010.	Incorporated by reference to Exhibit (10) of our Form 8-K, dated February 26, 2010. (File No. 001-9328)
	†	(ii)	Amendment No. 1 to Ecolab Inc. Change-in-Control Severance Policy, as amended and restated, effective as of February 26, 2010.	Incorporated by reference to Exhibit (10.18)(ii) of our Form 10-K Annual Report for the year ended December 31, 2011. (File No. 001-9328)
(10.15)	†		Description of Ecolab Management Incentive Plan.	Incorporated by reference to Exhibit (10.16) of our Form 10-K Annual Report for the year ended December 31, 2015. (File No. 001-9328)
(10.16)	†	(i)	Ecolab Inc. 2010 Stock Incentive Plan, as amended and restated, effective as of May 2, 2013.	Incorporated by reference to Exhibit (10.1) of our Form 8-K, dated May 2, 2013. (File No. 001-9328)
	†	(ii)	Sample form of Non-Statutory Stock Option Agreement under the Ecolab Inc. 2010 Stock Incentive Plan, adopted May 6, 2010.	Incorporated by reference to Exhibit (10)B of our Form 8-K, dated May 6, 2010. (File No. 001-9328)
	†	(iii)	Sample form of Restricted Stock Award Agreement under the Ecolab Inc. 2010 Stock Incentive Plan, adopted May 6, 2010.	Incorporated by reference to Exhibit (10)C of our Form 8-K, dated May 6, 2010. (File No. 001-9328)
	†	(iv)	Sample form of Performance-Based Restricted Stock Award Agreement under the Ecolab Inc. 2010 Stock Incentive Plan, adopted May 6, 2010.	Incorporated by reference to Exhibit (10)D of our Form 8-K, dated May 6, 2010. (File No. 001-9328)
	†	(v)	Sample form of Restricted Stock Unit Award Agreement under the Ecolab Inc. 2010 Stock Incentive Plan, adopted August 4, 2010.	Incorporated by reference to Exhibit (10)A of our Form 10-Q for the quarter ended September 30, 2010. (File No. 001-9328)
	†	(vi)	Sample form of Performance-Based Restricted Stock Award Agreement under the Ecolab Inc. 2010 Stock Incentive Plan, adopted December 2, 2015.	Incorporated by reference to Exhibit (10.17(vi)) of our Form 10-K Annual Report for the year ended December 31, 2015. (File No. 001-9328)
	†	(vii)	Sample form of Performance-Based Restricted Stock Award Agreement under the Ecolab Inc. 2010 Stock Incentive Plan, adopted December 7, 2016.	Incorporated by reference to Exhibit (10.16)(vii) on our Form 10-K Annual Report for the year ended December 31, 2016. (File No. 001-9328)

Exhibit No.:		Document:	Method of Filing:
	†	(viii) Sample form of Performance-Based Restricted Stock Award Agreement under the Ecolab Inc. 2010 Stock Incentive Plan, adopted December 6, 2017.	Filed herewith electronically.
(10.17)	†	Policy on Reimbursement of Incentive Payments, adopted December 4, 2008.	Incorporated by reference to Exhibit (10)W of our Form 10-K Annual Report for the year ended December 31, 2008. (File No. 001-9328)
(10.18)	†	Second Amended and Restated Nalco Holding Company 2004 Stock Incentive Plan, effective as of December 1, 2011.	Incorporated by reference to Exhibit (4.3) of our Post-Effective Amendment No. 1 on Form S-8 to Form S-4 Registration Statement dated December 2, 2011. (File No. 001-9328)
(10.19)	†	Form of Nalco Company Death Benefit Agreement and Addendum to Death Benefit Agreement.	Incorporated by reference from Exhibit (99.2) on Form 8-K of Nalco Holding Company filed on May 11, 2005. (File No. 001-32342)
(14.1)		Ecolab Code of Conduct, as amended November 26, 2012.	Incorporated by reference to Exhibit (14.1) of our Form 10-K Annual Report for the year ended December 31, 2012. (File No. 001-9328)
(21.1)		List of Subsidiaries.	Filed herewith electronically.
(23.1)		Consent of Independent Registered Public Accounting Firm.	Filed herewith electronically.
(24.1)		Powers of Attorney.	Filed herewith electronically.
(31.1)		Rule 13a-14(a) CEO Certification.	Filed herewith electronically.
(31.2)		Rule 13a-14(a) CFO Certification.	Filed herewith electronically.
(32.1)		Section 1350 CEO and CFO Certifications.	Filed herewith electronically.
(101.1)		Interactive Data File.	Filed herewith electronically.

† This exhibit is an executive compensation plan or arrangement.

Item 16. Form 10-K Summary .

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, Ecolab Inc. has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized, on the 23 rd day of February, 2018.

ECOLAB INC.
(Registrant)

By: /s/ Douglas M. Baker, Jr.
Douglas M. Baker, Jr.
Chairman of the Board
and Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of Ecolab Inc. and in the capacities indicated, on the 23 rd day of February, 2018.

/s/ Douglas M. Baker, Jr. Douglas M. Baker, Jr.	Chairman of the Board and Chief Executive Officer (Principal Executive Officer and Director)
/s/ Daniel J. Schmechel Daniel J. Schmechel	Chief Financial Officer and Treasurer (Principal Financial Officer)
/s/ Bruno Lavandier Bruno Lavandier	Senior Vice President and Corporate Controller (Principal Accounting Officer)
/s/ Michael C. McCormick Michael C. McCormick	Directors

as attorney-in-fact for:
Barbara J. Beck, Les S. Biller, Carl M. Casale, Stephen I. Chazen, Jeffrey M. Ettinger, Arthur J. Higgins, Michael Larson, David W. MacLennan, Tracy B. McKibben, Victoria J. Reich, Suzanne M. Vautrinot and John J. Zillmer

Exhibit (10.16(viii))

PERFORMANCE-BASED
RESTRICTED STOCK UNIT AWARD AGREEMENT

THIS AGREEMENT is entered into and effective as of [●] (the "Date of Grant"), by and between Ecolab Inc. (the "Company") and [●] (the "Grantee").

A. The Company has adopted the Ecolab Inc. 2010 Stock Incentive Plan, as amended and restated effective May 2, 2013 (the "Plan"), authorizing the Board of Directors of the Company, or a committee as provided for in the Plan (the Board or such a committee to be referred to as the "Committee"), to grant restricted Stock Unit Awards to certain employees of the Company and its Subsidiaries.

B. The Company desires to give the Grantee an incentive to advance the interests of the Company by granting to the Grantee an award of restricted stock units pursuant to the Plan.

Accordingly, the parties agree as follows:

ARTICLE 1. GRANT OF AWARD .

The Company hereby grants to the Grantee a performance-based restricted Stock Unit Award (the "Award") consisting of [●] units (the "Award Units"), each of which is a bookkeeping entry representing the right to receive one share of the Company's common stock, par value $1.00 per share (the "Common Stock"). The Award and Award Units are subject to the terms, conditions, restrictions and risk of forfeiture set forth in this Agreement and in the Plan.

ARTICLE 2. VESTING OF AWARD UNITS .

2.1 Vesting Date and Conditions . Subject to Article 5 below, some or all of the Award Units will vest and become non-forfeitable ("Vested") on December 31, [●] (the "Vesting Date"), provided that (a) the Committee has certified that the Company has achieved a level of Average Annual Return on Invested Capital (as defined below) of at least 8 percent for the three (3) year period from January 1, [●] to December 31, [●] (the "Performance Period"), and (b) the Grantee remains in the continuous employ of or service with the Company or any Subsidiary until the Vesting Date. The number of Award Units that will Vest on the Vesting Date will be determined in accordance with Section 2.2 below.

2.2 Determining Number of Vested Units. The following chart sets forth the percentage of the Award Units (or of a portion of the Award Units as provided in Section 5.1 of this Agreement) that will vest on the Vesting Date based upon the Company's level of achievement of Average Annual Return on Invested Capital for the Performance Period:

Average Annual Return on Invested Capital Level	**Vested Award Unit Percentage**
Threshold Level — [●] %	[●] %
Maximum Level — [●] %	[●] %

The actual percentage of Award Units that will Vest based upon the Company's achievement of Average Annual Return on Invested Capital between the Threshold Level and Maximum Level will be interpolated on a straight line basis, with the corresponding number of Vested Award Units resulting from such determination rounded up to the next whole Award Unit. If the Average Annual Return on Invested Capital for the Performance Period is below the Threshold Level, no Award Units will Vest. Any Award Units that do not Vest on the Vesting Date will be forfeited.

2.3 Committee Certification . The Committee shall certify the level of average annual Return on Invested Capital for the Performance Period and the percentage of Award Units that Vest as provided in Section 2.2 above no later than March 1, [●] .

2.4 Definitions and Calculations . For purposes of this Agreement, the following amounts and terms shall be calculated and defined as follows:

(a) "Average Annual Return on Invested Capital" shall be calculated by dividing (i) the average of the Company's Net Operating Profit After Taxes (as defined below) for each of the three fiscal years during the Performance Period, by (ii) the average of the Company's Invested Capital (as defined below) as of the last day of the fiscal quarter immediately preceding the Performance Period and the last day of each fiscal quarter during the Performance Period.

(b) "Net Operating Profit After Taxes" is defined as the Company's operating income multiplied by 1 minus the Company's effective tax rate, each as reported in the Company's consolidated financial statements for each fiscal year during the Performance Period, adjusted to eliminate (i) the after-tax effect of additional depreciation and amortization expense resulting from fair value adjustments to assets acquired as part of the Company's acquisitions of Nalco Holding Company (the "Nalco acquisition") and Permian Mud Service, Inc., the parent company of Champion Technologies, Inc. and Corsicana Technologies, Inc. (the "Champion acquisition") and the after-tax effect of special gains and charges related to the Nalco acquisition and the Champion acquisition of the types described in materials presented to the Committee on the Date of Grant; (ii) the after-tax effects of any acquisition occurring during the Performance Period that was approved by the Board; and (iii) (A) the cumulative effects of accounting or tax changes, (B) gains and losses from discontinued operations, (C) the cumulative effect of events occurring during the Performance Period that are unusual in nature or occur infrequently or both, and (D) charges for restructurings, each as defined by generally accepted accounting principles and as identified in the Company's financial statements (including accompanying notes), management's discussion and analysis or other filings with the Securities and Exchange Commission by the Company.

(c) "Invested Capital" is defined as the Company's (i) total assets less cash and cash equivalents, minus (ii) total liabilities less short-term and long-term debt, each as reported by the Company as of the end of the fiscal quarters described in Section 2.4(a) and adjusted to eliminate (A) the goodwill, fair value adjustments to inventory, intangible assets and property, plant and equipment, and deferred tax liabilities arising from such fair value adjustments associated with the Nalco acquisition and the Champion acquisition, and (B) the impact of the same factors identified in clauses (ii) and (iii) of Section 2.4(b).

2.5 Committee Discretion. The Committee may adjust the calculation of Average Annual Return on Invested Capital applicable to the Award Units under the circumstances, for the purpose and to the extent contemplated by Section 3.2(c) of the Plan. Further, the actual number of Award Units that become Vested based upon achieving the specified level of Average Annual Return on Invested Capital during the Performance Period may be adjusted (but only downward if the Grantee is a Covered Employee and this Award is intended to be Performance-Based Compensation subject to Section 17 of the Plan) by the Committee in its sole and absolute discretion based on such factors as the Committee determines to be appropriate and/or advisable.

ARTICLE 3. SETTLEMENT OF VESTED AWARD UNITS.

Except as may otherwise be provided in Section 5.2 below, Vested Award Units will be paid to the Grantee by no later than March 15, [●] . Each Vested Award Unit will be paid to the Grantee in one share of Common Stock, provided that the Company will have no obligation to issue shares of Common Stock pursuant to this Agreement unless and until the Grantee has satisfied any applicable tax obligations pursuant to Article 9 below and such issuance otherwise complies with all applicable law. Prior to the time the Vested Award Units are settled, the Grantee will have no rights other than those of a general creditor of the Company. The Award Units represent an unfunded and unsecured obligation of the Company.

ARTICLE 4. GRANT RESTRICTIONS.

3.1 Transferability. Any attempt to transfer, assign or encumber the Award Units other than in accordance with this Agreement and the Plan will be null and void, and will result in the immediate termination and forfeiture of the Award and all Award Units that have not yet Vested.

3.2 Dividends and Other Distributions. Subject to Article 6 of this Agreement, the Grantee will have no right to receive dividends, dividend equivalents or other distributions with respect to Award Units.

ARTICLE 5. TERMINATION OF EMPLOYMENT OR OTHER SERVICE; CHANGE IN CONTROL.

3.1 Termination of Employment or Other Service. This Award is considered a Stock Unit Award subject to a service-based vesting condition and to the achievement of a specified Performance Criterion as a condition to vesting for purposes of Section 12 of the Plan. Except as otherwise provided in this Section 5.1, the effect of the termination of the Grantee's employment or other service with the Company and all Subsidiaries prior to the Vesting Date of this Award will be as provided in Sections 12.1(c), 12.2(c), 12.3(b) and 12.5 of the Plan. If the Grantee's employment by or other service with the Company and all Subsidiaries is terminated by the Company or any Subsidiary without Cause prior to the Vesting Date, then (i) for purposes of Section 2.1(b) of this Agreement, the Grantee will be deemed to have been in the continuous employ of or service with the Company or any Subsidiary until the Vesting Date with respect to one-third of the Award Units if such termination occurs during the second year of the Performance Period and with respect to two-thirds of the Award Units if the such termination occurs during the third year of the Performance Period, and (ii) for purposes of determining the number of Vested Award Units on the Vesting Date under Section 2.2 of this Agreement, the Vested Award Unit Percentage determined in accordance with Section 2.2 will be applied to the number of Award Units as to which the service-based vesting condition is deemed satisfied in accordance with clause (i) of this sentence, rather than to the total number of Award Units.

3.2 Change in Control. If a Change in Control occurs prior to the Vesting Date, the effect on this Award shall be as provided in Section 14.2 of the Plan. If vesting of Award Units should be accelerated in accordance with Section 14.2 of the Plan, Vested Unit Awards will be settled and paid to the Grantee no later than two and one-half months after the end of the Grantee's taxable year in which the Award Units became Vested.

ARTICLE 6. ADJUSTMENTS.

The number and kind of securities subject to this Award will be subject to adjustment under the circumstances and to the extent specified in Section 4.3 of the Plan.

ARTICLE 7. RIGHTS AS A STOCKHOLDER.

The Grantee will have no rights as a stockholder with respect to any of the Award Units until the Award Units are settled following vesting and the Grantee becomes the holder of record of shares of Common Stock.

ARTICLE 8. EMPLOYMENT OR SERVICE.

Nothing in this Agreement will be construed to (a) limit in any way the right of the Company to terminate the employment or service of the Grantee at any time, or (b) be evidence of any agreement or understanding, express or implied, that the Company will retain the Grantee in any particular position at any particular rate of compensation or for any particular period of time.

ARTICLE 9. WITHHOLDING TAXES.

By accepting this Award, the Grantee (i) acknowledges his or her obligation to pay any federal, foreign, state and local withholding or employment-related taxes attributable to this Award as provided in Section 13 of the Plan, and (ii) consents and directs the Company or its third party administrator to withhold the number of shares of Common Stock issuable upon the vesting of some or all of the Award Units as the Company, in its sole discretion, deems necessary to satisfy such withholding obligations. For purposes of satisfying the Grantee's withholding and employment-related tax obligations, shares withheld by the Company will be valued at their Fair Market Value on the date of settlement.

ARTICLE 10. PERFORMANCE-BASED COMPENSATION.

Any payment of Common Stock received for the Vested Award Units is intended to qualify as "performance-based compensation" for purposes of Section 162(m) of the Internal Revenue Code, and no action will be taken which would cause such payment to fail to satisfy the requirements of such exemption.

ARTICLE 11. AUTHORIZATION TO RELEASE AND TRANSFER NECESSARY PERSONAL INFORMATION.

The Grantee hereby explicitly and unambiguously consents to the collection, use and transfer, in electronic or other form, of the Grantee's personal data by and among, as applicable, the Company and its Subsidiaries for the exclusive purpose of implementing, administering and managing the Grantee's participation in the Plan. The Grantee understands that the Company may hold certain personal information about the Grantee, including, but not limited to, the Grantee's name, home address and telephone number, date of birth, social security number (or any other social or national identification number), salary, nationality, job title, number of Award Units and/or shares of Common Stock held and the details of all Award Units or any other entitlement to shares of Common Stock awarded, cancelled, vested, unvested or outstanding for the purpose of implementing, administering and managing the Grantee's participation in the Plan (the "Data"). The Grantee understands that the Data may be transferred to the Company or to any third parties assisting in the implementation, administration and management of the Plan, that these recipients may be located in the Grantee's country or elsewhere, and that any recipient's country (e.g., the United States) may have different data privacy laws and protections than the Grantee's country. The Grantee understands that he or she may request a list with the names and addresses of any potential recipients of the Data by contacting his or her local human resources representative or the Company's stock plan administrator. The Grantee authorizes the recipients to receive, possess, use, retain and transfer the Data, in electronic or other form, for the sole purpose of implementing, administering and managing the Grantee's participation in the Plan, including any requisite transfer of such Data to a broker or other third party assisting with the administration of Award Units under the Plan or with whom shares of Common Stock acquired pursuant to the vesting of the Award Units or cash from the sale of such shares may be deposited. Furthermore, the Grantee acknowledges and understands that the transfer of the Data to the Company or to any third parties is necessary for the Grantee's participation in the Plan. The Grantee understands that the Grantee may, at any time, view the Data, request additional information about the storage and processing of the Data, require any necessary amendments to the Data or refuse or withdraw the consents herein by contacting the Grantee's local human resources representative or the Company's stock plan administrator in writing. The Grantee further acknowledges that withdrawal of consent may affect his or her ability to vest in or realize benefits from the Award Units, and the Grantee's ability to participate in the Plan. For more information on the consequences of refusal to consent or withdrawal of consent, the Grantee understands that he or she may contact his or her local human resources representative or the Company's stock plan administrator.

ARTICLE 12. SUBJECT TO PLAN.

12.1 Terms of Plan Prevail. The Award and the Award Units granted pursuant to this Agreement have been granted under, and are subject to the terms of, the Plan. The terms of the Plan are incorporated by reference in this Agreement in their entirety, and the Grantee acknowledges having received a copy of the Plan. The provisions of this Agreement will be interpreted as to be consistent with the Plan, and any ambiguities in this Agreement will be interpreted by reference to the Plan. In the event that any provision in this Agreement is inconsistent with the terms of the Plan, the terms of the Plan will prevail. References in this Agreement to specific Sections of the Plan refer to those Sections of the Plan as in effect on the Date of Grant.

12.2 Definitions. Unless otherwise defined in this Agreement, the terms capitalized in this Agreement have the same meanings as given to such terms in the Plan.

ARTICLE 13. MISCELLANEOUS.

13.1 Binding Effect. This Agreement will be binding upon the heirs, executors, administrators and successors of the parties hereto.

13.2 Governing Law. This Agreement and all rights and obligations under this Agreement will be construed in accordance with the Plan and governed by the laws of the State of Minnesota without regard to conflicts of law provisions. Any legal proceeding related to this Agreement will be brought in an appropriate Minnesota court, and the parties to this Agreement consent to the exclusive jurisdiction of the court for this purpose.

13.3 Entire Agreement. This Agreement and the Plan set forth the entire agreement and understanding of the parties hereto with respect to the grant, vesting and payment of this Award and the administration of the Plan and supersede all prior agreements, arrangements, plans and understandings relating to the grant, vesting and payment of this Award and the administration of the Plan.

13.4 Amendment and Waiver. Other than as provided in the Plan, this Agreement may be amended, waived, modified or canceled only by a written instrument executed by the parties hereto or, in the case of a waiver, by the party waiving compliance.

13.5 Captions. The Article, Section and paragraph captions in this Agreement are for convenience of reference only, do not constitute part of this Agreement and are not to be deemed to limit or otherwise affect any of the provisions of this Agreement.

13.6 Electronic Delivery and Execution. The Grantee hereby consents and agrees to electronic delivery of any documents that the Company may elect to deliver (including, but not limited to, plan documents, prospectus and prospectus supplements, grant or award notifications and agreements, account statements, annual and quarterly reports, and all other forms of communications) in connection with this and any other Incentive Award made or offered under the Plan. The Grantee understands that, unless revoked by giving written notice to the Company pursuant to the Plan, this consent will be effective for the duration of the Agreement. The Grantee also understands that the Grantee will have the right at any time to request that the Company deliver written copies of any and all materials referred to above. The Grantee hereby consents to any and all procedures the Company has established or may establish for an electronic signature system for delivery and acceptance of any such documents that the Company may elect to deliver, and agrees that the Grantee's electronic signature is the same as, and will have the same force and effect as, the Grantee's manual signature. The Grantee consents and agrees that any such procedures and delivery may be effected by a third party engaged by the Company to provide administrative services related to the Plan.

13.7 Address for Notice. All notices to the Company shall be in writing and sent to the Company's General Counsel at the Company's corporate headquarters. Notices to the Grantee shall be addressed to the Grantee at the address as from time to time reflected in the Company's or Subsidiary's employment records as the Grantee's address.

13.8 Severability. In the event that any provision in this Agreement shall be held invalid or unenforceable, such provision shall be severable from, and such invalidity or unenforceability shall not be construed to have any effect on, the remaining provisions of this Agreement.

13.9 Appendix . Notwithstanding any provision of this Agreement to the contrary, this grant of Award Units and the shares of Common Stock acquired under the Plan shall be subject to any and all special terms and provisions, if any, as set forth in the Appendix for the Grantee's country of residence.

13.10 Counterparts . For the convenience of the parties hereto, this Agreement may be executed in any number of counterparts, each such counterpart to be deemed an original instrument, and all such counterparts together to constitute the same agreement.

The parties to this Agreement have executed this Agreement effective the day and year first above written.

Exhibit (21.1)

SUBSIDIARIES OF ECOLAB INC.

Entity Name	State or Other Jurisdiction of Incorporation
NLC Process And Water Services SARL	Algeria
Ecolab (Antigua) Ltd.	Antigua & Barbuda
Anios America S.A.	Argentina
Champion Technologies de Argentina S.R.L.	Argentina
Ecolab Argentina S.R.L.	Argentina
Nalco Argentina S.R.L.	Argentina
Ecolab (Aruba) N.V.	Aruba
Champion Technologies Pty. Ltd.	Australia
Ecolab (Fiji) Pty Limited	Australia
Ecolab AU2 Pty Ltd	Australia
Ecolab Pty Ltd.	Australia
Nalco Australia PTY. LTD.	Australia
Ecolab AT 2 GmbH	Austria
Ecolab GmbH	Austria
Nalco Holdings G.m.b.H.	Austria
Nalco Osterreich Ges m.b.H.	Austria
Nalco Azerbaijan LLC	Azerbaijan
Ecolab Limited	Bahamas
Ecolab Bahrain S.P.C.	Bahrain
Ecolab (Barbados) Limited	Barbados
Ecolab B.V.B.A./S.P.R.L.	Belgium
Ecolab Production Belgium B.V.B.A.	Belgium
Kay BVBA	Belgium
Nalco Belgium BVBA	Belgium
Ecolab BM 1 Limited	Bermuda
Adecom Quimica LTDA	Brazil
Champion Technologies Do Brasil Servicos E Produtos Quimicos Ltda.	Brazil
Ecolab Quimica Ltda.	Brazil
Endoclear Equipamentos Médicos Hospitalares Ltda.	Brazil
Ecolab EOOD	Bulgaria
Ecolab CDN 2 Co.	Canada
Ecolab CDN 4 ULC	Canada
Ecolab Co.	Canada
Nalco Canada ULC	Canada
Nalco CDN 2 Co.	Canada
Nalco Ultrafab ULC	Canada
Les Produits Chimiques ERPAC Inc.	Canada
Ecolab S.A.	Chile
Nalco Industrial Services Chile Limitada	Chile
Ecolab (China) Investment Co., Ltd	China
Ecolab (GZ) Chemicals Limited	China
Ecolab (Taicang) Technology Co., Ltd.	China
Ecolab Chemicals Limited	China
Changzhou Jiayou Chemical Co., Ltd.	China
Changzhou Jiayou Xinye Trading Co., Ltd.	China
Changzhou Jianghai Changjia Transportation Co., Ltd.	China
Guangzhou Green Harbour Environmental Operation Ltd.	China
Guangzhou Green Harbour Termite Control Ltd.	China
Jianghai Environmental Protection Co., Ltd.	China
Nalco (China) Environmental Solution Co. Ltd.	China

Entity Name	State or Other Jurisdiction of Incorporation
Nalco (Shanghai) Trading Co. Ltd.	China
Nalco Industrial Services (Nanjing) Co., Ltd.	China
Nalco Industrial Services (Suzhou) Co., Ltd.	China
Soluscope International Trading (Shanghai) Co., Ltd.	China
Ecolab Colombia S. A.	Colombia
Nalco De Colombia LTDA	Colombia
Ecolab SRL	Costa Rica
Ecolab d.o.o.	Croatia
Ecolab Hygiene s.r.o.	Czech Republic
Nalco Czechia s.r.o.	Czech Republic
Calgon LLC	Delaware
Chamtech, L.L.C.	Delaware
E&M Bio-Chemicals, LLC	Delaware
Ecolab AP Holdings LLC	Delaware
Ecolab Holdings (Europe) LLC	Delaware
Ecolab Holdings Inc.	Delaware
Ecolab Israel Holdings LLC	Delaware
Ecolab Lux Partner LLC	Delaware
Ecolab Manufacturing Inc.	Delaware
Ecolab MT Holdings LLC	Delaware
Ecolab U.S. 2 Inc.	Delaware
Ecolab U.S. 3 LLC	Delaware
Ecolab U.S. 4 LLC	Delaware
Ecolab U.S. 6 Inc.	Delaware
Ecolab U.S. 7 LLC	Delaware
Ecolab US 1 GP	Delaware
Ecolab USA Inc.	Delaware
FPS Region 3, LLC	Delaware
GCS Service, Inc.	Delaware
Microtek Medical Inc.	Delaware
Nalco Cal Water, LLC	Delaware
Nalco Contract Operations, LLC	Delaware
Nalco China Holdings LLC	Delaware
Nalco Company LLC ([1])	Delaware
Nalco Crossbow Water LLC	Delaware
Nalco Delaware Company	Delaware
Nalco Energy Services Equatorial Guinea LLC	Delaware
Nalco Energy Services Middle East Holdings, Inc.	Delaware
Nalco Environmental Solutions LLC	Delaware
Nalco European Holding LLC	Delaware
Nalco Fab-Tech LLC	Delaware
Nalco Global Holdings LLC	Delaware
Nalco Holding Company	Delaware
Nalco Industrial Outsourcing Company	Delaware
Nalco International Holdings LLC	Delaware
Nalco Iraq Holding LLC	Delaware
Nalco PWS, INC.	Delaware
Nalco Texas Leasing LLC	Delaware
Nalco Tiorco Middle East Holdings, LLC	Delaware
Nalco Two, INC.	Delaware
Nalco U.S. Holdings LLC	Delaware

([1])This subsidiary also conducts business under the assumed names of NALCO Champion – An Ecolab Company and NALCO Water, An Ecolab Company

Entity Name	State or Other Jurisdiction of Incorporation
Nalco US 1 LLC	Delaware
Nalco US I GP	Delaware
Nalco U.S. 2 Inc.	Delaware
Nalco Worldwide Holdings LLC	Delaware
NALTECH, INC.	Delaware
NDC LLC	Delaware
ONES West Africa LLC	Delaware
Quantum Technical Services, LLC	Delaware
Res-Kem General Water LLC	Delaware
RES-KEM LLC	Delaware
Royal Pest Solutions Inc.	Delaware
Wabasha Leasing LLC	Delaware
Ecolab ApS	Denmark
Nalco Danmark APS	Denmark
Microtek Dominicana S.A.	Dominican Republic
Champion Technologies del Ecuador CIA LTDA. CHAMPIONTECH.	Ecuador
Ecolab Ecuador	Ecuador
Nalco Egypt Trading	Egypt
Nalco Egypt, LTD.	Egypt
Ecolab, S.A. de C.V.	El Salvador
Nalco Champion EG S.A.R.L.	Equatorial Guinea
Nalco Finland Manufacturing OY	Finland
Nalco Finland OY	Finland
Oy Ecolab AB	Finland
Service Tampa, LLC	Florida
Anios Diffusion SAS	France
DMD SAS	France
Ecolab FR 1 SAS	France
Ecolab Pest France SAS	France
Ecolab Production France SAS	France
Ecolab SAS	France
Ecolab SNC	France
Hydenet SAS	France
Laboratoires Anios	France
Nalco France	France
Nalco France SNC	France
Soluscope SAS	France
Nalco Champion Gabon SARL	Gabon
Microtek Medical Holdings Inc.	Georgia
AK Kraus und Hiller Schädlingsbekämpfung GmbH	Germany
Ecolab DE 1 GmbH	Germany
Ecolab Deutschland GmbH	Germany
Ecolab Engineering GmbH	Germany
Ecolab Export GmbH	Germany
Nalco Deutschland GMBH	Germany
Nalco Deutschland Manufacturing GMBH UND CO. KG	Germany
Nalco Grundbesitz GmbH & Co. KG	Germany
Nalco Manufacturing Beteiligungs GMBH	Germany
Nalco Real Estate GmbH	Germany
Nalco Champion Ghana Ltd	Ghana
Nalco Energy Services (Ghana) Limited	Ghana
Ecolab A.E.B.E.	Greece
Ecolab (Guam) LLC	Guam
Ecolab, Sociedad Anonima	Guatemala

Entity Name	State or Other Jurisdiction of Incorporation
Quimicas Ecolab S.A. de C.V.	Honduras
Anios Diffusion Representative Office (Hong Kong)	Hong Kong
Ecolab HK 1 Limited	Hong Kong
Ecolab HK 2 Limited	Hong Kong
Ecolab Limited	Hong Kong
Ecolab Name Holding Limited	Hong Kong
Ecolab Water Holding Limited	Hong Kong
Green Harbour Mainland Holdings Ltd	Hong Kong
Nalco Hong Kong Limited	Hong Kong
Ecolab Hygiene Kft.	Hungary
Nalco Hungary Industrial Commercial LLC	Hungary
Ecolab Food Safety & Hygiene Solutions Private Limited	India
Nalco Water India Limited	India
P.T. Champion Kurnia Djaja Technologies	Indonesia
P.T. Ecolab International Indonesia	Indonesia
P.T. Nalco Champion Indonesia	Indonesia
Ecolab (Holdings) Limited	Ireland
Ecolab Finance Company Designated Activity Company	Ireland
Ecolab IE 1 Designated Activity Company	Ireland
Ecolab Limited	Ireland
Kilco Chemicals (Ireland) Designated Activity Company	Ireland
Ecolab JVZ Limited	Israel
Nalco Israel Industrial Services LTD	Israel
Ecolab Holding Italy S.r.l.	Italy
Ecolab Production Italy Srl	Italy
Ecolab Srl	Italy
Immobiliare R.E.O.P.A. SRL	Italy
Microtek Italy S.r.l.	Italy
Nalco Italiana Holdings S.R.L.	Italy
Nalco Italiana Manufacturing S.R.L.	Italy
Nalco Italiana SrL	Italy
Nuova Farmec S.r.l.	Italy
Ecolab Limited	Jamaica
Ecolab G.K.	Japan
Katayama Nalco INC.	Japan
Nalco Japan G.K.	Japan
Nalco Gulf Limited	Jersey
Ecolab East Africa (Kenya) Limited	Kenya
Ecolab Korea Ltd.	Republic of Korea
Nalco Korea Limited	Republic of Korea
Ecolab, SIA	Latvia
Nalco Libya	Libya
Food Protection Services, L.L.C.	Louisiana
Research Fumigation Company LLC	Louisiana
Ecolab LUX & Co Holdings S.C.A.	Luxembourg
Ecolab LUX 1 Sarl	Luxembourg
Ecolab LUX 2 Sarl	Luxembourg
Ecolab LUX 3 Sarl	Luxembourg
Ecolab LUX 4 Sarl	Luxembourg
Ecolab LUX 7 Sarl	Luxembourg
Ecolab Lux 9 S.a.r.l.	Luxembourg
Ecolab Lux 10 Sarl	Luxembourg
Ecolab Lux 11 Sarl	Luxembourg
Ecolab Lux 12 Sarl	Luxembourg

Entity Name	State or Other Jurisdiction of Incorporation
Ecolab LUX Sarl	Luxembourg
Nalco Luxembourg Holdings SARL	Luxembourg
Nalco Worldwide Holdings S.a.r.l./B.V.	Luxembourg
Ecolab-Importacao E. Exportacao Limitada	Macau
Chemasia Industries SDN. BHD.	Malaysia
CSC Kemico (South East Asia) SDN BHD.	Malaysia
Ecolab Sdn Bhd	Malaysia
Nalco Industrial Services Malaysia SDN. BHD	Malaysia
Ecolab MT Limited	Malta
Microtek Medical Malta Holding Limited	Malta
Microtek Medical Malta Limited	Malta
Champion Technologies Limited	Mauritius
Abednego de Mexico S. de R.L. de C.V.	Mexico
Ecolab Holdings Mexico, S. de R. L. de C. V.	Mexico
Ecolab, S. de R.L. de C.V.	Mexico
Nalco De Mexico, S. de R. L. de C.V.	Mexico
Quimiproductos, S. de R.L. de C.V.	Mexico
Abednego Environmental Services, LLC	Michigan
Abednego Mexico Holdings, LLC	Michigan
Nalco Gulf Response Corp.	Michigan
Ecolab Foundation	Minnesota
Ecolab Maroc Société A Responsabilité Limitée D'associé Unique	Morocco
Champion Technologies B.V.	Netherlands
Champion Technologies Russia and Caspian B.V.	Netherlands
Chemical Innovations NL B.V.	Netherlands
Ecolab B.V.	Netherlands
Ecolab NL 10 B.V.	Netherlands
Ecolab NL 11 B.V.	Netherlands
Ecolab NL 13 B.V.	Netherlands
Ecolab NL 15 BV	Netherlands
Ecolab NL 16 B.V.	Netherlands
Ecolab NL 17 C.V.	Netherlands
Ecolab NL 3 BV	Netherlands
Ecolab NL 4 BV	Netherlands
Ecolab Production Netherlands B.V.	Netherlands
Ecolabone B.V.	Netherlands
Ecolabtwo B.V.	Netherlands
International Water Consultant B.V.	Netherlands
Microtek Medical B.V.	Netherlands
Microtek Medical Holding B.V.	Netherlands
Nalco Dutch Holdings B.V.	Netherlands
Nalco Europe B.V.	Netherlands
Nalco Global Holdings B.V.	Netherlands
Nalco Holding B.V.	Netherlands
Nalco International Holdings B.V.	Netherlands
Nalco Netherlands BV	Netherlands
Nalco Overseas Holding B.V.	Netherlands
Nalco Russian Holding B.V.	Netherlands
Nalco Universal Holdings BV	Netherlands
Nalco Venezuela Holding B.V.	Netherlands
OWT Oil-Water Treatment Services B.V.	Netherlands
Cascade Water Services, Inc.	New York
Nalco Wastewater Contract Operations, Inc.	New York
Ecolab New Zealand	New Zealand

Entity Name	State or Other Jurisdiction of Incorporation
Ecolab y Compañia Colectiva de Responsabilidad Limitada	Nicaragua
Champion Technologies (Nig) Limited	Nigeria
Nalco Associate Investment Co. LTD	Nigeria
Nalco Energy Services Nigeria Limited	Nigeria
Kay Chemical International, Inc.	North Carolina
Mobotec AB, LLC	North Carolina
Ecolab a.s.	Norway
Nalco Norge AS	Norway
Nalco Tiorco Middle East LLC	Oman
Nalco Pakistan (Private) Limited	Pakistan
Ecolab S.A.	Panama
Ecolab PNG Limited	Papua New Guinea
Nanospecialties, LLC	Pennsylvania
Ecolab Perú Holdings S.R.L.	Peru
Ecolab Philippines Inc.	Philippines
Nalco Philippines Inc.	Philippines
Ecolab Production Poland sp. z o.o.	Poland
Ecolab Services Poland Sp. z o o	Poland
Ecolab Sp. z o o	Poland
Nalco Polska Sp. z o. o.	Poland
Nalco Portuguesa (Quimica Industrial) Ltd.	Portugal
Nalco Osterreich Gesellschaft M.B.H. Belgrade, Republic of Serbia	Republic of Serbia
Ecolab s.r.l.	Romania
Service Puerto Rico 4725, LLC	Puerto Rico
Champion Technologies OOO	Russian Federation
Chemoil Service OOO	Russian Federation
Ecolab Services	Russian Federation
Master Chemicals OOO	Russian Federation
Nalco Company OOO	Russian Federation
Nalco ZAO	Russian Federation
Nalco-Element	Russian Federation
OOO Kogalym Chemicals Plan	Russian Federation
Promchimservice Limited Liability Company	Russian Federation
ZAO Ecolab	Russian Federation
Ecolab (St. Lucia) Limited	Saint Lucia
Champion Arabia Ltd.	Saudi Arabia
Nalco Saudi Co. Ltd.	Saudi Arabia
Adam Investment Company Limited	Scotland
R P Adam Limited	Scotland
Ecolab Hygiene d.o.o.	Serbia
CTI Chemicals Asia Pacific Pte. Ltd.	Singapore
Ecolab Pte. Ltd.	Singapore
Ecolab Asia Pacific Pte. Ltd.	Singapore
Nalco Asia Holding Company PTE. LTD.	Singapore
Ecolab s.r.o.	Slovakia
Ecolab d.o.o.	Slovenia
Ecolab (Proprietary) Limited	South Africa
Nalco Africa (PTY.) LTD.	South Africa
Derypol SA	Spain
Ecolab Hispano-Portuguesa S.L.	Spain
Ecolab Spain Services S.L.U.	Spain
Hicopla SL	Spain
Instrunet Hospital SLU	Spain
Nalco Espanola Manufacturing, S.L.U.	Spain

Entity Name	State or Other Jurisdiction of Incorporation
Nalco Española, S.L.	Spain
Ecolab AB	Sweden
Nalco AB	Sweden
Ecolab (Schweiz) GmbH	Switzerland
Ecolab CH 1 GmbH	Switzerland
Ecolab CH 2 GmbH	Switzerland
Ecolab CH 3 GmbH	Switzerland
Ecolab Europe GmbH	Switzerland
Nalco Schweiz GmbH (Nalco Switzerland LLC)	Switzerland
USF Healthcare SA	Switzerland
Ecolab Ltd.	Taiwan
Nalco Taiwan Co., Ltd.	Taiwan
Ecolab East Africa (Tanzania) Limited	Tanzania
Champion ES Holdings Inc.	Texas
Champion Vehicle Leasing LLC	Texas
Fresno Energy LLC	Texas
Ecolab Limited	Thailand
Nalco Industrial Services (Thailand) Co. Ltd.	Thailand
Ecolab (Trinidad and Tobago)Unlimited	Trinidad And Tobago
Deren Ilac Sanayi ve Diş Ticaret Anonim Şirketi	Turkey
Ecolab Temizleme Sistemleri Limited Sirketi	Turkey
Nalco Anadolu Kimya Sanayi ve Ticaret Limited Sirketi	Turkey
Oksa Kimya Sanayi A.S.	Turkey
Ecolab East Africa (Uganda) Limited	Uganda
Ecolab LLC	Ukraine
Champion Technologies Middle East FZCO	United Arab Emirates
Ecolab Emirates General Trading LLC	United Arab Emirates
Ecolab Gulf FZE	United Arab Emirates
Calgon Europe Limited	United Kingdom
Champion Technologies Limited	United Kingdom
Ecolab (U.K.) Holdings Limited	United Kingdom
Ecolab Limited	United Kingdom
Enviroflo Engineering Limited	United Kingdom
Houseman Limited	United Kingdom
Hydrosan Limited	United Kingdom
LHS (UK) Limited	United Kingdom
London & General Packaging Ltd	United Kingdom
Microtek Medical Europe Limited	United Kingdom
Midland Research Laboratories UK Limited	United Kingdom
Nalco Acquisition One	United Kingdom
Nalco Acquisition Two Limited	United Kingdom
Nalco Energy Services Limited	United Kingdom
Nalco Energy Services Marketing Limited	United Kingdom
Nalco Holdings UK LIMITED	United Kingdom
Nalco Investments U.K. LIMITED	United Kingdom
Nalco Limited	United Kingdom
Nalco Manufacturing Ltd.	United Kingdom
Nalco North Africa Limited	United Kingdom
Nalco Services, Ltd.	United Kingdom
NALFLOC LIMITED	United Kingdom
Shield Holdings Limited	United Kingdom
Shield Medicare Limited	United Kingdom
Shield Salvage Associates Limited (UK)	United Kingdom
Ecolab S.R.L.	Uruguay

Entity Name	State or Other Jurisdiction of Incorporation
Champion Tecnologias, C.C.A.	Venezuela
Ecolab S.A.	Venezuela
Nalco Venezuela S. C. A.	Venezuela
Ecolab Vietnam Company Limited	Vietnam

EXHIBIT (23.1)

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-8 (Registration Nos. 2-90702; 33-18202; 33-55986; 33-56101; 333-95043; 333-109890; 33-34000; 33-56151; 333-18627; 333-109891; 33-39228; 33-56125; 333-70835; 33-60266; 333-95041; 333-40239; 333-95037; 333-50969; 333-58360; 333-97927; 333-115567; 333-129427; 333-129428; 333-140988; 333-115568; 333-132139; 333-147148; 333-163837; 333-163838; 333-165130; 333-165132; 333-166646; 333-174028; 333-176601; 333-178300; 333-178302; 333-184650; 333-190317; 333-199729; 333-199730; and 333-199732) and Form S-3 (Registration No. 333-221305) of Ecolab Inc. of our report dated February 23, 2018 relating to the consolidated financial statements and the effectiveness of internal control over financial reporting, which appears in this Form 10-K.

/s/ PricewaterhouseCoopers LLP
PricewaterhouseCoopers LLP
Minneapolis, Minnesota
February 23, 2018

EXHIBIT (24.1)

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS , that the undersigned, a director of Ecolab Inc., a Delaware corporation, does hereby make, nominate and appoint DOUGLAS M. BAKER, JR., MICHAEL C. MCCORMICK and THEODORE D. HERZOG, and each of them, to be my attorney-in-fact, with full power and authority to sign his name to the Annual Report on Form 10-K of Ecolab Inc. for the fiscal year ended December 31, 2017, and all amendments thereto, provided that the Annual Report and any amendments thereto, in final form, be approved by said attorney-in-fact, and his name, when thus signed, shall have the same force and effect as though I had manually signed said document.

IN WITNESS WHEREOF , I have hereunto affixed my signature this 23 rd day of February, 2018.

/s/Barbara J. Beck
Barbara J. Beck

/s/Les S. Biller
Les S. Biller

/s/Carl M. Casale
Carl M. Casale

/s/Stephen I. Chazen
Stephen I. Chazen

/s/Jeffrey M. Ettinger
Jeffrey M. Ettinger

/s/Arthur J. Higgins
Arthur J. Higgins

/s/Michael Larson
Michael Larson

/s/David W. MacLennan
David W. MacLennan

/s/Tracy B. McKibben
Tracy B. McKibben

/s/Victoria J. Reich
Victoria J. Reich

/s/ Suzanne M. Vautrinot
Suzanne M. Vautrinot

/s/John J. Zillmer
John J. Zillmer

EXHIBIT (31.1)

CERTIFICATION

I, Douglas M. Baker, Jr., certify that:

1. I have reviewed this annual report on Form 10-K of Ecolab Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 23, 2018

/s/ Douglas M. Baker, Jr.
Douglas M. Baker, Jr.
Chairman of the Board and
Chief Executive Officer

EXHIBIT (31.2)

CERTIFICATION

I, Daniel J. Schmechel, certify that:

1. I have reviewed this annual report on Form 10-K of Ecolab Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant’s other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant’s internal control over financial reporting that occurred during the registrant’s most recent fiscal quarter (the registrant’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant’s internal control over financial reporting; and

5. The registrant’s other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant’s auditors and the audit committee of the registrant’s board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant’s ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant’s internal control over financial reporting.

Date: February 23, 2018

/s/ Daniel J. Schmechel
Daniel J. Schmechel
Chief Financial Officer and Treasurer

EXHIBIT (32.1)

SECTION 1350 CERTIFICATIONS

Pursuant to 18 U.S.C. Section 1350, each of the undersigned officers of Ecolab Inc. does hereby certify that:

(a) the Annual Report on Form 10-K of Ecolab Inc. for the year ended December 31, 2017 (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(b) information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of Ecolab Inc.

Dated: February 23, 2018	/s/Douglas M. Baker, Jr. Douglas M. Baker, Jr. Chairman of the Board and Chief Executive Officer
Dated: February 23, 2018	/s/Daniel J. Schmechel Daniel J. Schmechel Chief Financial Officer and Treasurer