ECOLAB

CUSTOMER FOCUSED. SOLUTION DRIVEN.

ANNUAL REPORT 2016

OUR VALUE PROPOSITION IS STRONG FOR CUSTOMERS AND OUR SHAREHOLDERS

ECOLAB IS EVERYWHERE IT MATTERS™, BECAUSE CLEAN WATER, SAFE FOOD, ABUNDANT ENERGY AND HEALTHY ENVIRONMENTS MATTER EVERYWHERE

A trusted partner at more than 1 million customer locations, Ecolab Inc. is the global leader in water, hygiene and energy technologies and services that protect people and vital resources. Ecolab's 48,000 associates work to deliver comprehensive solutions, expertise 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.

From restaurants and hotels to refineries and manufacturing facilities, Ecolab's more than 25,000 sales-and-service associates, the industry's largest and best-trained direct sales-and-service force, help customers manage their cleaning, sanitizing and water and energy management challenges. Many of the world's most recognizable brands rely on Ecolab to help ensure operational efficiencies, product integrity and brand reputation.

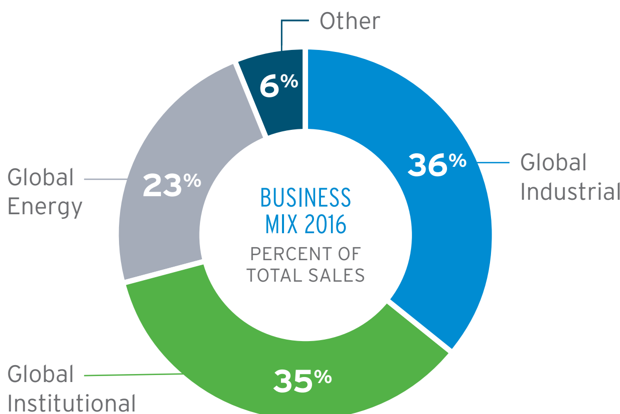
Ecolab is headquartered in St. Paul, Minn., and its common stock is listed and traded under the symbol ECL on the New York Stock Exchange. For more company information, visit **www.ecolab.com** or call **1.800.2.ECOLAB**. Follow us on Twitter @ecolab, Facebook at facebook.com/ecolab or LinkedIn at linkedin.com/company/ecolab.

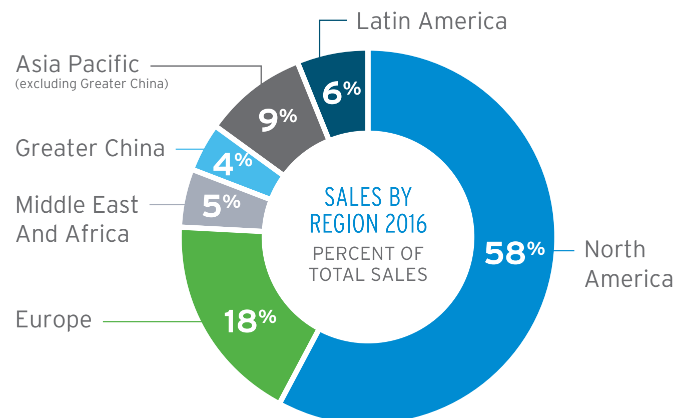
FORWARD-LOOKING STATEMENTS AND RISK FACTORS

We refer readers to the company's disclosure entitled "Forward-Looking Statements and Risk Factors," which begins on page 14 of the Form 10-K.

ECOLAB STOCK PERFORMANCE

		HIGH	LOW
2016	4Q	**$122.28**	**$110.65**
	3Q	**124.60**	**116.66**
	2Q	**121.81**	**109.83**
	1Q	**113.69**	**98.62**
2015	4Q	$122.48	$109.64
	3Q	117.69	103.09
	2Q	118.27	110.03
	1Q	117.00	97.78
2014	4Q	$115.39	$101.26
	3Q	118.46	107.31
	2Q	111.57	101.82
	1Q	111.83	97.65



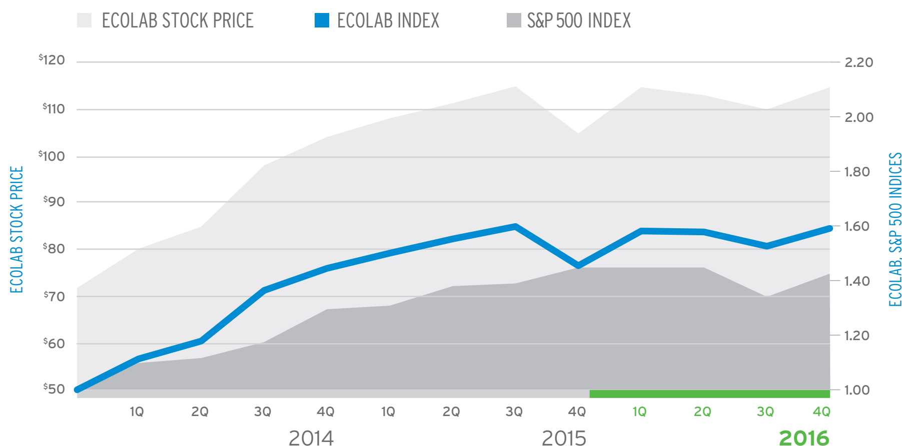


SUMMARY

MILLIONS, EXCEPT PER SHARE

	2016	2015	2014	Percent Change 2016	Percent Change 2015
Net Sales	**$13,152.8**	$13,545.1	$14,280.5	**(3)%**	(5)%
Net Income Attributable to Ecolab	**1,229.6**	1,002.1	1,202.8	**23**	(17)
Percent of Sales	**9.3%**	7.4%	8.4%		
Diluted Net Income Attributable to Ecolab per Common Share	**4.14**	3.32	3.93	**25**	(16)
Adjusted Diluted Net Income Attributable to Ecolab per Common Share (non-GAAP measure)	**4.37**	4.37	4.18	**-**	5
Diluted Weighted-Average Common Shares Outstanding	**296.7**	301.4	305.9	**(2)**	(1)
Cash Dividends Declared per Common Share	**1.420**	1.340	1.155	**6**	16
Cash Provided by Operating Activities	**1,939.7**	1,999.8	1,815.6	**(3)**	10
Capital Expenditures	**707.4**	771.0	748.7	**(8)**	3
Ecolab Shareholders' Equity	**6,901.1**	6,909.9	7,315.9	**-**	(6)
Return on Beginning Equity	**17.9%**	13.8%	16.5%		
Total Debt	**6,687.0**	6,465.5	6,548.2	**3**	(1)
Total Debt to Capitalization	**49.0%**	48.1%	47.0%		
Total Assets	**$18,330.2**	$18,641.7	$19,427.4	**(2)**	(4)

ECOLAB STOCK PERFORMANCE AND COMPARISON

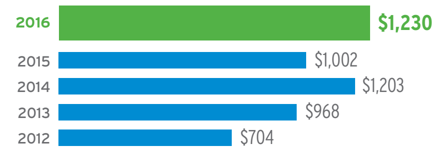


NET SALES

MILLIONS

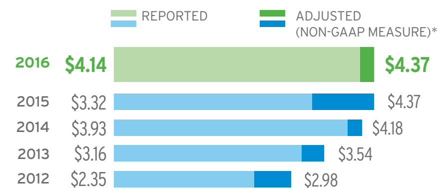
NET INCOME ATTRIBUTABLE TO ECOLAB

MILLIONS



DILUTED NET INCOME ATTRIBUTABLE TO ECOLAB PER SHARE

DOLLARS



DIVIDENDS DECLARED PER SHARE

DOLLARS

*This Annual Report includes certain Non-GAAP financial measures. We refer readers to the company's disclosure entitled "Non-GAAP Financial Measures," which begins on page 44 of the Form 10-K.

A LETTER FROM ECOLAB'S CHAIRMAN AND CHIEF EXECUTIVE OFFICER

WELL-POSITIONED FOR FUTURE GROWTH

2016 was a challenging year. The Ecolab team performed well, but our financial results were negatively impacted by continued energy and foreign exchange market headwinds. In the end, our adjusted EPS, excluding special gains and charges, was flat, with reported EPS up 25 percent compared to 2015.

While our adjusted EPS results were unsatisfying, there were a number of significant accomplishments during the year: record new business in our Institutional, Industrial and Other segments; clear stabilization in our Energy business; and record cash flow from operations. Most importantly, our results included continued significant year-over-year investments in innovation, digital technology capabilities and talent systems that will position us well as we move into 2017 and beyond.

OUR CORPORATE ACCOUNTS TEAMS DROVE SUCCESSFUL NEW BUSINESS STRATEGIES, AND WE OUTPERFORMED OUR MARKETS AND KEY GLOBAL COMPETITORS.

Our continued investments are a strong indication of our confidence in the future. Our clean water, safe food, abundant energy and healthy environments positioning remains as relevant as ever. Our ability to make a difference for our customers has never been stronger. And our commitment to deliver for our customers, our team and our shareholders remains absolute.

STRONG EXECUTION

We worked aggressively to earn new business across all of our segments. Our corporate accounts teams drove successful new business strategies, and we outperformed our markets and key global competitors. We also delivered margin improvement through product innovation and cost efficiencies.

Our Global Institutional, Global Industrial and Other segments showed good fixed currency sales and earnings results as the need for our sanitation and water-saving technologies continued to increase. Our Global Energy segment remained solidly profitable, improving its market position, outperforming the industry and stabilizing with second-half sales equal to first-half, but delivering 40 percent more income.

Innovation remained a core focus for us in 2016, and we delivered our third consecutive innovation pipeline greater than $1 billion. These solutions will help our customers improve operations, product quality, safety, sustainability and bottom line; and help ensure that we continue to lead in the marketplace.

INVESTMENTS FOR GROWTH

In addition to our strong execution during the year, we continued to invest in our long-term success. We acquired the assets of UltraClenz, a developer of electronic hand hygiene compliance monitoring systems and dispensers. We also announced our intent to acquire Anios, a leading European healthcare and hygiene business. This acquisition closed in February 2017, and will improve our scale and coverage for hospitals and healthcare facilities in Europe and provide better international distribution. In October, we divested the restroom cleaning business acquired through our acquisition of the U.S. operations of Swisher Hygiene Inc., solidifying our focus on the core capabilities we gained through this transaction.

WE ARE IN A GREAT POSITION TO HELP SOCIETY AND OUR CUSTOMERS ADDRESS THEIR LARGE AND GROWING CHALLENGES.

We also continued to strengthen our long-term growth drivers, including our customer, field and infrastructure technology. We partnered with Microsoft to expand our existing enterprise digital capabilities and enhance the connectivity and analytical capabilities of our solutions, enabling our field teams to more quickly analyze and adjust system operations, and reinforce our value to customers.

RIGHT STRATEGY FOR THE FUTURE

As the world continues to evolve and grow, so will we. We remain confident in our clean water, safe food, abundant energy and healthy environments positioning. The world's population and middle class will continue to grow, increasing demand for food and energy. Food and energy are the two largest consumers of fresh water, putting additional stress on an already problematic fresh water supply situation. Additionally, the population in key developed markets is becoming older, driving increased demand in healthcare. We are in a great position to help society and our customers address their large and growing challenges.

WE ENTER 2017 CONFIDENT IN OUR BUSINESS MODEL, OUR POSITION, OUR PEOPLE AND OUR PROSPECTS FOR IMPROVED GROWTH.

While we believe we are well positioned, we also believe we need to continue to improve, particularly in leveraging digital technology to enhance our ability to predict our customers' needs before they become problems and further enable our teams to drive value within our customers' operations. We start from a position of strength as we already gather information in more than a half million customer sites globally.

We also know that we must continue to be a company where great people want to join, grow, prosper and stay. Great people have worked to get Ecolab to where we are today, and talent will remain a significant focus for us as we continue to grow.

Simultaneously, we continue to build our core technology strengths through continued research and development, and field technology and financial system investments.

Most importantly, we know that keeping our focus on our customers, their needs and their well-being is the most critical thing we must do. Throughout the world, our more than 25,000 sales-and-service associates are working on-site at more than 1 million customer locations, supporting more effective and efficient operations. We are helping our customers improve food safety, prevent infection and reduce water and energy use, enabling them to meet their own business and sustainability goals.

CONFIDENT IN OUR FUTURE

We enter 2017 confident in our business model, our position, our people and our prospects for improved growth. We have a strong team, excellent market positions and a commitment to win.

While we believe global economic growth will remain sluggish during the year, we expect the energy market to stabilize and currency exchange challenges to moderate. Against this backdrop, we will continue to deliver value for our customers and our shareholders.

In 2017, we will drive performance through new solutions and services to better serve our customers, maintain a sharp focus on sales execution and, along with pricing and cost efficiencies, improve our margins. We are committed to delivering improved growth and shareholder returns this year, and we will build on 2016's investments to help ensure strong growth in the years ahead.

We are excited about our future. I am confident in our business and our ability to help make the world cleaner, safer and healthier.

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

SOLID PERFORMANCE AGAINST A CHALLENGING MACRO ENVIRONMENT

The Ecolab team delivered a solid performance in 2016 despite continued global economic and currency headwinds.

We worked aggressively through 2016's challenging environment, where lackluster global economies, unfavorable foreign currency translation and depressed energy market activity presented multiple headwinds to our growth. By once again focusing on driving superior results for customers at the lowest total operating cost to them, we outperformed our markets while improving our margins through product innovation and cost efficiency. We also continued to make significant investments in our long-term growth drivers, including our customer, field and infrastructure technology, as well as in our talent management systems.

We enter 2017 confident in our position, our team and our prospects for improved growth. Our opportunities remain robust, and our capacity to capture them is stronger than ever. We expect 2017 to show better growth as we build on 2016's investments and the work we have done to position ourselves for outperformance across our businesses.

NET SALES
$13.2 BILLION

Reported net sales decreased 3 percent to $13.2 billion in 2016. When measured in fixed currency rates, 2016 sales were flat compared to 2015 sales.

OPERATING INCOME
$1.9 BILLION

Reported operating income was $1.9 billion in 2016, an increase of 23 percent. Excluding special gains and charges and when measured in fixed currency rates, 2016 adjusted fixed currency operating income increased 3 percent over 2015 operating income.

DILUTED EARNINGS
$4.14 PER SHARE

Reported diluted earnings per share (EPS) were $4.14, an increase of 25 percent from 2015's reported EPS of $3.32. Amounts for both 2016 and 2015 include special gains and charges and discrete tax items. Excluding these items, adjusted diluted EPS was flat at $4.37 in 2016 compared to adjusted diluted EPS of $4.37 in 2015.

CASH FLOW FROM OPERATIONS
$1.9 BILLION

Cash flow from operations was $1.9 billion. Total debt to total capitalization ratio was 49 percent, with our net debt equal to 2.3 times our EBITDA (earnings before interest, taxes, depreciation and amortization). Our net debt was equal to 2.2 times our adjusted EBITDA. Our debt rating remained within the investment grade categories of the major rating agencies during 2016.

QUARTERLY CASH DIVIDEND RATE
$1.48 PER COMMON SHARE

We increased our quarterly cash dividend rate, raising it 6 percent in December 2016 to an indicated annual payout of $1.48 per common share. This represents Ecolab's 25th consecutive annual dividend rate increase. We have paid a cash dividend for 80 consecutive years.

SHARE PRICE
$117.22

Our share price rose in 2016, increasing 2 percent compared with a 10 percent increase by the S&P 500 index. Our share performance has exceeded the S&P 500 in 21 of the past 26 years, rising 4,311 percent compared with the S&P 500's 578 percent increase.

UNMATCHED COMBINATION OF TECHNOLOGY AND SERVICE

OUR GOAL IS TO BE OUR CUSTOMERS' MOST VALUED PARTNER

Our customer relationships are built on two solid cornerstones: continuous customer-centric innovation and personalized service.

Through millions of customer visits across a range of industries and our real-time monitoring and data analytics capabilities, we gain first-hand insight into the operational and sustainability challenges businesses face – insight that guides our innovation process. We use this information to help ensure our technologies, programs and solutions effectively meet the needs of our customers and address emerging issues.

Ecolab's 1,600 scientists, engineers and technical specialists throughout the world develop the industry's most innovative solutions to improve operational efficiency, product quality and safety while reducing water and energy use and waste. They do this by drawing upon deep expertise in critical core technologies, including antimicrobials, dispensing and monitoring, packaging engineering, personal and environmental hygiene, polymers, surfactants, solid chemistry and water management solutions.

Our commitment to developing new solutions to solve complex customer challenges is unwavering; we forecast the 2016 innovation pipeline to deliver more than $1 billion in total annual revenue in five years.

RESEARCH, DEVELOPMENT & ENGINEERING STATS:

1,600
SCIENTISTS, ENGINEERS AND TECHNICAL SPECIALISTS

19
GLOBAL TECHNOLOGY CENTERS

MORE THAN
7,700
PATENTS

WE FORECAST THE 2016 INNOVATION PIPELINE TO DELIVER MORE THAN
$1 BILLION
IN TOTAL ANNUAL REVENUE IN FIVE YEARS

Ecolab's 25,000 sales-and-service associates comprise the industry's largest and best-trained direct sales-and-service force. Each day, our experts are on-site at more than 1 million customer locations around the world – restaurants, hotels, hospitals, food and beverage processors, manufacturing plants, refineries and other businesses – to review operations and processes, discuss problems and concerns, analyze data, ensure the effectiveness of our solutions, share best practices and solve operational challenges.

Each visit provides us with a deeper look into our customers' operations – the basis for actionable recommendations to keep food safe, reduce water and energy use, improve operational efficiency, achieve sustainability goals, enhance guest and employee satisfaction, promote safety and protect brand reputation.

Ecolab's combination of innovative technology and industry-leading service provides us with an advantage that no competitor can match.

SALES-AND-SERVICE STATS:

SALES-AND-SERVICE ASSOCIATES
25,000

CUSTOMER LOCATIONS
MORE THAN
1 MILLION

COUNTRIES
MORE THAN
170

CUSTOMER SERVICE AND TECHNICAL SUPPORT
24/7

SOLVING CUSTOMER CHALLENGES WITH GLOBAL IMPACT

Through our innovative solutions, expertise and work at more than 1 million customer locations throughout the world, we are in a unique position to help address the global trends that are shaping the future of business and society.

By 2030, continued population growth, growing affluence, changing diets and other dynamics throughout the world will require an estimated 40 percent more water, 35 percent more food and 30 percent more energy to meet demand. The increasing pressure on the world's natural resources is creating new and increasingly complex challenges for businesses.

We are delivering expertise and solutions to help our customers effectively solve their operating and sustainability challenges, and meet the growing global demand for clean water, safe food, abundant energy and healthy environments.

Ecolab helps manage **1.1 trillion gallons** of water annually, enough to supply the daily needs of **64 million people**.

1.1 TRILLION GALLONS OF WATER

Ecolab helps ensure the quality and safety of **27 percent** of the world's **processed food** at **5,000 food and beverage plants** around the world **every year**.

27% OF WORLD'S PROCESSED FOOD

Ecolab helps ensure that **42 percent** of **global processed milk** is processed hygienically.

42% OF GLOBAL PROCESSED MILK

Each year, Ecolab helps support clean kitchens, serving **45 billion restaurant meals**.

45 BILLION RESTAURANT MEALS

Each year, Ecolab helps generate **22 percent** of the world's **fossil-fueled electrical power** and **40 percent** of its **nuclear power**, reducing environmental impact.

22% FOSSIL-FUELED ELECTRICAL POWER

40% NUCLEAR POWER

Across market sectors, Ecolab's hand hygiene solutions help clean **31 billion hands per year**.

31 BILLION CLEAN HANDS

Each year, Ecolab helps clean more than **1 billion hotel rooms**.

1 BILLION HOTEL ROOMS

Ecolab helps increase hotel guest satisfaction by helping clean **113 million loads of linens per year**, providing clean sheets and towels for **1.1 billion guests**.

113 MILLION LOADS OF LINEN

AWARDS AND RECOGNITION

Reflecting our focus on, and significant investments in, the key drivers for our customers' success – and our own – Ecolab is often recognized for its leadership, innovation, corporate social responsibility and commitment to sustainability. In 2016, Ecolab received recognition from several leading organizations, including:

2016 WORLD'S MOST ADMIRED COMPANIES

Ecolab was named to Fortune's 2016 list of the World's Most Admired Companies, ranking first in the chemicals industry for social responsibility, quality of management and long-term investment value.

2016 WORLD'S MOST ETHICAL COMPANIES

For the 10th consecutive year, Ecolab was named to Ethisphere Institute's list of the World's Most Ethical Companies.

2016 BEST CORPORATE CITIZENS

Corporate Responsibility Magazine ranked Ecolab fifth on its 2016 list of Best Corporate Citizens.

2016 BEST COMPANIES FOR LEADERS

For the fourth consecutive year, Chief Executive magazine ranked Ecolab as one of the 40 Best Companies for Leaders, ranking 16th on the 2016 list.

2016 WORLD'S GREENEST COMPANIES

Newsweek ranked Ecolab sixth on the U.S. 500 List and 13th on the Global 500 List of the World's Greenest Companies.

2016 DOW JONES SUSTAINABILITY INDEX

Ecolab was named to the 2016 Dow Jones Sustainability North America Index, which is based on an analysis of corporate economic, environmental and social performance.

2016 GLOBAL 100 MOST SUSTAINABLE COMPANIES

Ecolab was named to Corporate Knights' 2016 Global 100 Index of the Most Sustainable Companies.

2016 MAPLECROFT CLIMATE INNOVATION INDEXES

Ecolab ranked 43rd on Maplecroft's 2016 Climate Innovation Indexes, which identify companies best positioned to innovate and manage climate-related opportunities and risks.

2016 FTSE4GOOD INDEX

Ecolab was again named to the FTSE4Good Index for meeting its globally recognized corporate social responsibility standards.

2016 U.S. EPA SAFER CHOICE PARTNER OF THE YEAR

The U.S. Environmental Protection Agency named Ecolab the 2016 Safer Choice Partner of the Year within the Innovators category for developing an innovative disinfectant system, the Water Risk Monetizer and for improving product review processes.

2016 BEST PLACES TO WORK FOR LGBT EQUALITY

Ecolab received a perfect score in the 2016 Corporate Equality Index, a national report on corporate policies and practices related to LGBT workplace equality.

REPORTING SEGMENTS

Ecolab's "Circle the Customer — Circle the Globe" strategy provides an array of innovative programs, products and services to meet the specific operational and sustainability needs of customers throughout the world. Through this strategy and our varied solution and service mix, one customer may utilize the offerings of several of our reportable segments.

GLOBAL INDUSTRIAL

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. Operating segments within the Global Industrial reportable segment include Water, Food & Beverage, Paper and Textile Care.

The Water operating segment provides water treatment products and programs to a wide range of industries for cooling water, boiler water, process water and wastewater applications. Food & Beverage provides cleaners, sanitizers, antimicrobial solutions, lubricants, cleaning systems, dispensers and chemical injectors and animal health products to dairy plants, dairy farms, breweries, soft-drink bottling plants and meat, poultry and other food processors. Paper provides water and process applications for the pulp and paper industries, and Textile Care provides wash process solutions for large-scale commercial operations including uniform and linen rental, hospitality and healthcare laundries.

GLOBAL INSTITUTIONAL

Provides specialized cleaning and sanitizing products to the foodservice, hospitality, lodging, healthcare, government, education and retail industries. Operating segments within the Global Institutional segment include Institutional, Specialty and Healthcare. The Institutional operating segment provides specialized cleaners, sanitizers and equipment for warewashing, on-premise laundries and general food safety and housekeeping functions for restaurants, lodging and long-term care providers. Specialty supplies cleaning and sanitizing products to quick service restaurants and food retailers. Healthcare provides infection prevention and other offerings to acute care hospitals and surgery centers.

GLOBAL ENERGY

Operating under the Nalco Champion name, Global Energy serves the process chemical and water treatment needs of the global petroleum and petrochemical industries in both upstream and downstream applications. Global Energy is divided into an upstream group composed of the Wellchem and oilfield chemicals businesses, and downstream group comprising the refinery and petrochemical processing businesses. Global Energy provides a full range of process and water treatment offerings to enhance customers' production, asset integrity, recovery rates and environmental compliance. Nalco Champion customers comprise nearly all of the supermajor, major, independent and national oil companies.

OTHER

Provides pest elimination and kitchen equipment repair and maintenance through the Pest Elimination and Equipment Care operating segments. Pest Elimination provides services designed to detect, eliminate and prevent pests in restaurants, food and beverage processing plants, educational and healthcare facilities, hotels, quick service restaurant and grocery operations and other customers. Equipment Care provides equipment repair, maintenance and preventive maintenance services for the U.S. commercial foodservice industry.

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

(Mark One)

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

For the Fiscal Year Ended December 31, 2016 **Commission File No. 1-9328**

OR

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

For the transition period from to

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

Delaware	**41-0231510**
(State or other jurisdiction of incorporation or organization)	(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, or a smaller reporting Company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting 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 ☐

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, 2016: $34,464,699,245 (see Item 12, under Part III hereof), based on a closing price of registrant's Common Stock of $118.60 per share.

The number of shares of registrant's Common Stock, par value $1.00 per share, outstanding as of January 31, 2017: 291,718,512 shares.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's Proxy Statement for the Annual Meeting of Stockholders to be held May 4, 2017 and to be filed within 120 days after the registrant's fiscal year ended December 31, 2016 (hereinafter referred to as "Proxy Statement") are incorporated by reference into Part III.

ECOLAB INC.
FORM 10-K
For the Year Ended December 31, 2016

TABLE OF CONTENTS

		Beginning Page
PART I		
Item 1.	Business.	3
Item 1A.	Risk Factors.	15
Item 1B.	Unresolved Staff Comments.	20
Item 2.	Properties.	20
Item 3.	Legal Proceedings.	21
Item 4.	Mine Safety Disclosures.	21
PART II		
Item 5.	Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities.	22
Item 6.	Selected Financial Data.	23
Item 7.	Management's Discussion and Analysis of Financial Condition and Results of Operations.	24
Item 7A.	Quantitative and Qualitative Disclosures about Market Risk.	45
Item 8.	Financial Statements and Supplementary Data.	46
Item 9.	Changes in and Disagreements With Accountants on Accounting and Financial Disclosure.	92
Item 9A.	Controls and Procedures.	92
Item 9B.	Other Information.	92
PART III		
Item 10.	Directors, Executive Officers of the Registrant and Corporate Governance.	93
Item 11.	Executive Compensation.	93
Item 12.	Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.	93
Item 13.	Certain Relationships and Related Transactions, and Director Independence.	94
Item 14.	Principal Accounting Fees and Services.	94
PART IV		
Item 15.	Exhibits, Financial Statement Schedules.	95
Item 16.	Form 10-K Summary.	100

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” or “Nalco Company” 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.

Item 1(a) 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 2016, we continued to invest in and build our business, including the July 2016 acquisition of a 33% minority investment in Aquatech International LLC (“Aquatech”). Based in Canonsburg, PA, Aquatech is a global leader in the design and engineering of complex and comprehensive water treatment solutions that improve water quality and reduce net water usage. On February 1, 2017, we acquired 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. See Part II, Item 8, Note 4 of this Form 10-K for additional information about these acquisitions.

Item 1(b) Financial Information About Operating Segments.

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.

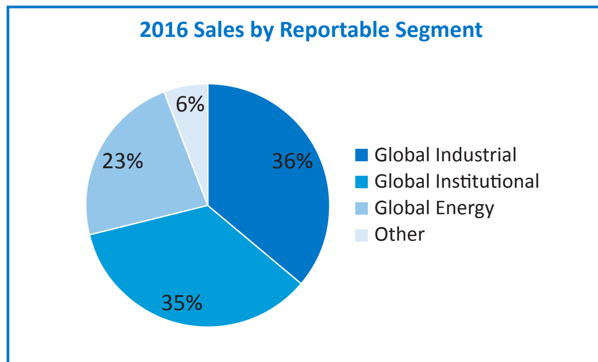
Item 1(c) Narrative Description of Business.

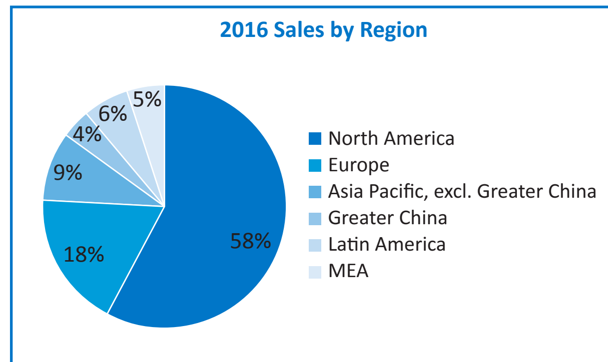
General

With 2016 sales of $13.2 billion, we are the global leader in water, hygiene and energy technologies and services that protect people and vital resources. We deliver comprehensive programs 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, pest elimination services, and equipment maintenance and repair 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 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 reportable 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, 2016, which are located in Item 8 of Part II of this Form 10-K. Eight of our ten operating segments 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 two underlying operating segments as useful in understanding our consolidated results.





Global Industrial

This reportable segment consists of the Water, Food & Beverage, Paper 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, and commercial laundry industries. The underlying operating segments exhibit similar manufacturing processes, distribution methods and economic characteristics. Descriptions of the four 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, we serve customers in aerospace, chemical, pharmaceutical, mining and primary metals, power, food and beverage and medium and light manufacturing, as well as institutional clients such as hospitals, universities, commercial buildings and hotels.

Water provides water treatment products and programs for cooling water, boiler water, process water and waste 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. 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 wastewater products and programs focus on improving overall plant economics, addressing compliance issues, optimizing equipment efficiency and improving operator capabilities and effectiveness.

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 at the beginning of the food chain 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 on farms are sold through dealers and independent, third-party distributors, while products for use in processing facilities are sold primarily by our corporate account and field sales employees.

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 the same types of products and programs for water treatment and wastewater treatment as those offered by Water. Also, Paper offers two specialty programs—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.

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 supplier 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 "Kay" and "Ecolab" 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 grown 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" and "Microtek" 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. 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.

Our upstream and downstream applications consist of the following:

- *Well Stimulation and Completion*: Our WellChem business supplies chemicals for the drilling, cementing, fracturing and acidizing phases of well drilling and stimulation. Our integrated approach to product development combines marketing and research efforts supported with process simulation, pilot production and full-scale manufacturing and logistics capabilities.

- *Oilfield Applications*: Our Oilfield Chemicals business provides solutions to the oil and gas production sector. We have expertise in crude oil and natural gas production, pipeline gathering/transmission systems, gas processing, heavy oil and bitumen upgrading and enhanced oil recovery. Our priority is to safely manage the critical challenges facing today's oil and gas producers throughout the lifecycle of their assets. Starting with the design/capital investment phase through asset decommission, a lifecycle approach to chemical solutions and offerings helps our customers minimize risk, achieve their production targets and maximize profitability.

- *Custom Equipment and Facilities:* Our FabTech business designs, fabricates and commissions custom, high-quality oil and gas equipment for a range of applications. Our UltraFab business designs, fabricates and commissions compact, modular, and custom-engineered H_2S mitigation systems that help to ensure optimized and effective treatment.

- *Downstream Applications:* Our customized process and water treatment programs are delivered by onsite technical experts serving the petroleum refining, petrochemical and fuels industry. We are focused on providing improved system reliability, reduced total cost of operations, environmental compliance, sustainability in the form of energy and water savings and reduced carbon emissions. Our process programs mitigate fouling, desalting, corrosion, foaming and the effects of heavy metals. We provide total water and wastewater management solutions specific to customers' refining and chemical processing needs including boiler treatment, cooling water treatment and wastewater treatment. We also offer an entire line of fuel additives including corrosion inhibitors, fuel stabilizers, pour point depressants, cetane improvers, detergents and antioxidants for home heating oil and premium diesel and gasoline packages.

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 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

Equipment Care provides equipment repair, maintenance and preventive maintenance services for the commercial food service industry. Repair services are offered for in-warranty repair, acting as the manufacturer's authorized service agent, as well as after-warranty repair. In addition, Equipment Care operates as a parts distributor to repair service companies and end-use customers. The Equipment Care business operates solely in the United States.

We believe that Equipment Care is a leading provider of equipment maintenance and repair programs to the commercial food service industry in the United States locations in which we compete.

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, (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 47,565 employees as of December 31, 2016.

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 2016 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 two of the last three years. Sales of warewashing products were approximately 11% and 10% of consolidated net sales in 2016 and 2015, respectively.

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 Company 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. At times, technology has also been licensed from third parties to develop offerings.

We believe that 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 2016, 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 Angola Prestação de Serviços, Limitada	Angola	Global Energy
Nalco Saudi Co. Ltd.	Saudi Arabia	Global Energy, Global Industrial
RauanNalco LLP	Kazakhstan	Global Energy
Emirates National Chemical Company LLC	United Arab Emirates	Global Energy
Malaysian Energy Chemical & Services Sdn. Bhd.	Malaysia	Global Energy
Nalco Champion Dai-ichi India Private Limited	India	Global Energy
Nalco Champion EG Sarl	Equatorial Guinea	Global Energy
AGS Champion LLP	Kazakhstan	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
Kogalym Chemicals Plant LLC	Russia	Global Energy
CJSC Nalco Element JV	Russia	Global Energy
Century LLC	United States	Global Institutional

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. The California Safer Consumer Products Act regulations became effective in 2013 and focus on ingredients in consumer products that have the potential for widespread public exposure. 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 more 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 upcoming 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 planning 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., June 2017 is the final deadline for Canada and Australia). 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.

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: Capital Expenditures: 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 $60 million in 2016 and $55 million in 2015. Approximately $90 million has been budgeted globally for projects in 2017. The increase in 2017 over 2016 is due to continued spending on process safety and compliance matters throughout the Company, including facilities acquired in connection with the Champion transaction.

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 1.0 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 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 24 sites in the United States. Additionally, we have similar liability at six 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. Unasserted claims are not reflected in the accrual. 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.

As previously reported, the Texas Commission on Environmental Quality ("TCEQ") issued a Notice of Enforcement and Notice of Violation related to Ecolab's facility in Fresno, TX on August 29, 2014, alleging violations of the facility's air permits and various state and federal air laws. On June 24, 2015, the TCEQ issued a draft consent decree to Ecolab for certain violations, with the TCEQ ultimately seeking an administrative penalty of approximately $850,000. The company signed an Agreed Order with the TCEQ on May 2, 2016 to pay this penalty, which is subject to approval by the TCEQ, and simultaneously paid the first installment of approximately $425,000. The final installment will be paid upon approval of the Agreed Order by the TCEQ.

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 $9.0 million in 2016 and $6.5 million in 2015. Our worldwide accruals at December 31, 2016 for probable future remediation expenditures, excluding potential insurance reimbursements, totaled approximately $22 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 $535,000 during the subsidiary's fiscal year ended November 30, 2016, and additional sales of such products totaling $571,000 during December 2016, 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 $117,180 and $351,192, 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.

Item 1(d) Financial Information About Geographic Areas.

The financial information about geographic areas 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.

Item 1(e) Available Information.

Our Internet address is www.ecolab.com. Copies of our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to these reports, are available free of charge on our website www.ecolab.com/investor as soon as reasonably practicable after such material is filed with, or furnished to, the Securities and Exchange Commission.

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 of the Registrant.

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 except as otherwise noted, 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, 2012
Douglas M. Baker, Jr.	58	Chairman of the Board and Chief Executive Officer	Jan. 2012 – Present
Christophe Beck	49	Executive Vice President and President – Global Water & Process Services	May 2015 - Present
		Executive Vice President and President – Regions	Oct. 2012 – May 2015
		Executive Vice President – Global Integration	Jan. 2012 – Sep. 2012
Larry L. Berger	56	Executive Vice President and Chief Technical Officer	Jan. 2012 – Present
Alex N. Blanco	56	Executive Vice President and Chief Supply Chain Officer	Jan. 2013 – Present [1]
Thomas W. Handley	62	President and Chief Operating Officer	Sep. 2012 – Present
		Senior Executive Vice President and President – Global Food & Beverage and Asia Pacific Latin America	Jan. 2012 – Aug. 2012
Michael A. Hickey	55	Executive Vice President and President – Global Institutional	Oct. 2012 – Present
		Executive Vice President and President – Institutional	Jan. 2012 – Sep. 2012
Bryan L. Hughes	48	Senior Vice President and Corporate Controller	May 2014 - Present
		Vice President-Finance, Global Institutional	Jan. 2012 – Apr. 2014
Roberto Inchaustegui	61	Executive Vice President and President – Global Services and Specialty	Sep. 2012 - Present
		Executive Vice President and President – Global Specialty	Jan. 2012 – Sep. 2012

Name	Age	Office	Positions Held Since Jan. 1, 2012
Laurie M. Marsh	53	Executive Vice President – Human Resources	Nov. 2013 – Present
		Vice President – Total Rewards and HR Service Delivery & Technology	Jan. 2012 – Oct.2013
Timothy P. Mulhere	54	Executive Vice President and President – Regions	May 2015 – Present
		Executive Vice President and President – Global Water and Process Services	Oct. 2012 – May 2015
		Executive Vice President and President – Global Healthcare	Feb. 2012 – Sep. 2012
		Senior Vice President and General Manager – Food & Beverage North America	Jan. 2012 – Jan. 2012
Daniel J. Schmechel	57	Chief Financial Officer and Treasurer	Jan. 2017 – Present
		Chief Financial Officer	Oct. 2012 – Dec. 2016
		Senior Vice President – Services and Systems	Jun. 2012 – Sep. 2012
		Senior Vice President and Chief Transformation Officer – EMEA	Jan. 2012 – May 2012
James J. Seifert	60	Executive Vice President, General Counsel and Secretary	Jan. 2012 – Present
Stephen M. Taylor	55	Executive Vice President and President – Nalco Champion	Apr. 2013 – Present
		Executive Vice President and President – Global Energy Services	Oct. 2012 – March 2013
		Executive Vice President – Energy Services	Jan. 2012 – Sep. 2012
Jill S. Wyant	45	Executive Vice President and President – Global Food & Beverage, Healthcare and Life Sciences	May 2016 – Present
		Executive Vice President and President – Global Food & Beverage	Oct. 2012 – April 2016
		Senior Vice President and General Manager – North America and Latin America	Jan. 2012 – Sep. 2012

1. Prior to joining Ecolab in 2013, Mr. Blanco was employed by Procter & Gamble Co., for 30 years, most recently as Vice President, Product Supply Global Beauty Sector.

Forward-Looking Statements

This Form 10-K, including the MD&A within Part II, Item 7, contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. The following factors, among others, could cause actual results and future events to differ materially from those set forth or contemplated in the forward-looking statements:

- amount, funding and timing of cash expenditures relating to our restructuring and other initiatives
- capital investments and strategic business acquisitions
- share repurchases
- payments under operating leases
- borrowing capacity
- global market risk
- impact of oil price fluctuations, comparative performance and prospects of businesses in our Global Energy segment
- targeted credit rating metrics
- long-term potential of our business
- impact of changes in exchange rates and interest rates
- losses due to concentration of credit risk
- recognition of share-based compensation expense
- future benefit plan payments
- amortization expense
- customer retention rate
- bad debt experiences and customer credit worthiness
- disputes, claims and litigation
- environmental contingencies
- returns on pension plan assets
- funding of cash requirements, future cash flow and uses for cash
- dividends
- debt repayments
- contributions to pension and postretirement healthcare plans
- liquidity requirements and borrowing methods
- impact of credit rating downgrade
- impact of new accounting pronouncements
- tax deductibility of goodwill
- non-performance of counterparties

- income taxes, including valuation allowances, loss carryforwards, unrecognized tax benefits and uncertain tax positions
- market position
- doing business in Iran
- impact from Brexit

Without limiting the foregoing, words or phrases such as “will likely result,” “are expected to,” “will continue,” “is anticipated,” “we believe,” “we expect,” “estimate,” “project” (including the negative or variations thereof) 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 2008 and 2009, the global economy experienced considerable disruption and volatility, and the disruption was particularly acute in the global credit markets. 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.

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.

If we are unsuccessful in executing on key business initiatives, our business could be adversely affected.

We continue to make investments and execute business initiatives to develop business systems and optimize our business structure as part of our ongoing efforts to improve our efficiency and returns. In particular, we continue to invest in our information technology systems to integrate and streamline our processes and to improve our competitiveness. These initiatives involve complex business process

design and a breakdown in certain of these processes could result in business disruption. Additionally, we may undertake in the future business manufacturing initiatives similar to the substantially completed Energy Restructuring Plan and Combined Restructuring Plan discussed under Note 3, entitled “Special Gains and Charges” of this Form 10-K. 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 breakdown, malicious intrusion and random attack. Recent acquisitions, including the Nalco and Champion transactions, have resulted in further de-centralization of systems and additional complexity in our systems infrastructure. Likewise, data privacy 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 breakdowns, 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.

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 2016, 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 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.

We are a defendant in several wage hour lawsuits claiming violations of the Fair Labor Standards Act (“FLSA”) or a similar state law, certain of which have either been certified for class treatment or are seeking such certification. While one of the lawsuits has been tentatively settled, there can be no assurance that pending or future wage hour lawsuits can be successfully defended or settled.

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.

All but one of these cases have been 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”). The remaining case was Franks v. Sea Tow of South Miss, Inc., et al, Cause No. A2402-10-228 (Circuit Court of Harrison County Mississippi). The Franks case was dismissed in May 2014.

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 remain pending against other defendants, the Court’s decision is 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 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. 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 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.

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. 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 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 results can 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 can 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.

We have substantial indebtedness which will impact our financial flexibility.

As of December 31, 2016, we had net debt (total debt minus cash and cash equivalents) of $6.4 billion. Our substantial indebtedness may adversely affect our business, consolidated results of operations and financial position, including in the following respects:

- requiring us to dedicate a substantial portion of our cash flows to debt service obligations, thereby potentially reducing the availability of cash flows to pay cash dividends and to fund working capital, capital expenditures, acquisitions, investments and other general operating requirements and opportunities;
- limiting our ability to obtain additional financing to fund our working capital requirements, capital expenditures, acquisitions, investments, debt service obligations and other general operating requirements;
- placing us at a relative competitive disadvantage compared to competitors that have less debt;
- limiting flexibility to plan for, or react to, changes in the businesses and industries in which we operate, which may adversely affect our operating results and ability to meet our debt service obligations; and
- increasing our vulnerability to adverse general economic and industry conditions.

In addition, as of December 31, 2016 approximately $1.5 billion of our debt is floating rate debt. A one percentage point increase in the average interest rate on our floating rate debt would increase future interest expense by approximately $11 million per year. Accordingly, a significant spike in interest rates would adversely affect our consolidated results of operations and cash flows.

If we incur additional indebtedness, the risks related to our substantial indebtedness may intensify.

We enter into multi-year contracts with customers that can 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.

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 the Company change its assertion regarding the permanent reinvestment of the undistributed earnings of international affiliates, a deferred tax liability may need to be established.

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 potential reforms under the President Trump administration, and elsewhere, such as interpretations as to the legality of tax advantages granted under the European Union state aid rules. We are also 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.

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.

Ecolab expects 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, 2016, we had goodwill of $6.4 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. Properties.

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 the Pest Elimination and Equipment Care purchase 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. 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
Sugar Land, TX USA	350,000	Global Energy, Global Industrial	Owned
South Beloit, IL USA	313,000	Global Institutional, Global Industrial, Other	Owned
Chalons, FRANCE	280,000	Global Institutional, Global Industrial	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
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	Leased
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
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, Ontario, 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
Jacksonville, FL USA	127,000	Global Institutional	Owned
Rozzano, ITALY	126,000	Global Institutional, Global Industrial	Owned
City of Industry, CA USA	125,000	Global Institutional, Global Industrial	Owned
Garyville, LA USA	122,000	Global Energy, Global Industrial	Owned
Mississauga, 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

Location	Approximate Size (Sq. Ft.)	Segment	Majority Owned or Leased
Hamilton, NEW ZEALAND	96,000	Global Institutional, Global Industrial	Owned
Calgary, Alberta, CANADA	94,000	Global Energy	Owned
Kwinana, AUSTRALIA	87,000	Global Institutional, Global Industrial	Owned
Revesby, AUSTRALIA	87,000	Global Institutional, Global Industrial	Owned
Yangsan, KOREA	85,000	Global Energy, Global Industrial	Owned
Cisterna, ITALY	80,000	Global Industrial	Owned
Rovigo, ITALY	77,000	Global Institutional	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

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 2016 Ecolab's corporate headquarters was comprised of three adjacent multi-storied buildings located in downtown St. Paul, Minnesota. The main 19-story building was constructed to our specifications and is leased through June 30, 2018. The second building is leased through 2019. The Company intends to vacate the current leased buildings in 2018. The third building is owned. Ecolab acquired the 17-story North Tower from The Travelers Indemnity Company in downtown St. Paul, Minnesota on August 4, 2015. This building became the corporate headquarters in 2017. 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 segment 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, the Company acquired the beneficial interest in the trust owning these facilities during 2015. Our Energy operating segment maintains administrative and research facilities in Sugar Land, Texas and additional research facilities in Fresno, Texas. In December 2013, we announced the construction of a new 133,000 square-foot headquarters building adjacent to the existing Sugar Land operations which was completed in early 2016 and renovation of the existing 45,000 square-foot research facilities in Sugar Land.

Significant regional administrative and/or research facilities are located in Leiden, Netherlands, Campinas, Brazil, and Pune, India, which we own, and in 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. Legal 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."

Other environmental-related legal proceedings are discussed at Part I, Item 1(c) above, under the heading "Environmental and Regulatory Considerations" and is incorporated herein by reference.

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." The 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 2016 and 2015 were as follows:

	2016		2015	
Quarter	High	Low	High	Low
First	**$ 113.69**	**$ 98.62**	$ 117.00	$ 97.78
Second	**121.81**	**109.83**	118.27	110.03
Third	**124.60**	**116.66**	117.69	103.09
Fourth	**122.28**	**110.65**	122.48	109.64

Holders

On January 31, 2017, we had 6,762 holders of record of our Common Stock.

Dividends

We have paid Common Stock dividends for 80 consecutive years. Cash dividends of $0.33 per share were declared in February, May and August 2015. Cash dividends of $0.35 per share were declared in December 2015, and February, May and August 2016. A dividend of $0.37 per share was declared in December 2016.

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, 2016	2,451	$ 115.2107	-	16,772,526
November 1-30, 2016	-	-	-	16,772,526
December 1-31, 2016	13,365	117.6511	-	16,772,526
Total	15,816	117.2730	-	16,772,526

(1) Includes 15,816 shares reacquired from employees and/or directors to satisfy the exercise price of stock options or shares surrendered to satisfy minimum 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	2016	2015	2014	2013	2012
OPERATIONS					
Net sales	**$ 13,152.8**	$ 13,545.1	$ 14,280.5	$ 13,253.4	$ 11,838.7
Cost of sales (including special (gains) and charges (1))	**6,898.9**	7,223.5	7,679.1	7,161.2	6,385.4
Selling, general and administrative expenses	**4,299.4**	4,345.5	4,577.6	4,360.3	4,018.3
Special (gains) and charges	**39.5**	414.8	68.8	171.3	145.7
Operating income	**1,915.0**	1,561.3	1,955.0	1,560.6	1,289.3
Interest expense, net (including special (gains) and charges (1))	**264.6**	243.6	256.6	262.3	276.7
Income before income taxes	**1,650.4**	1,317.7	1,698.4	1,298.3	1,012.6
Provision for income taxes	**403.3**	300.5	476.2	324.7	311.3
Net income including noncontrolling interest	**1,247.1**	1,017.2	1,222.2	973.6	701.3
Net income (loss) attributable to noncontrolling interest (including special (gains) and charges (1))	**17.5**	15.1	19.4	5.8	(2.3)
Net income attributable to Ecolab	**$ 1,229.6**	$ 1,002.1	$ 1,202.8	$ 967.8	$ 703.6
Diluted earnings per share, as reported (GAAP)	**$ 4.14**	$ 3.32	$ 3.93	$ 3.16	$ 2.35
Diluted earnings per share, as adjusted (Non-GAAP) (2)	**$ 4.37**	$ 4.37	$ 4.18	$ 3.54	$ 2.98
Weighted-average common shares outstanding - basic	**292.5**	296.4	300.1	299.9	292.5
Weighted-average common shares outstanding - diluted	**296.7**	301.4	305.9	305.9	298.9
SELECTED INCOME STATEMENT RATIOS					
Gross margin	**47.5 %**	46.7 %	46.2 %	46.0 %	46.1 %
Selling, general and administrative expenses	**32.7**	32.1	32.1	32.9	33.9
Operating income	**14.6**	11.5	13.7	11.8	10.9
Income before income taxes	**12.5**	9.7	11.9	9.8	8.6
Net income attributable to Ecolab	**9.3**	7.4	8.4	7.3	5.9
Effective income tax rate	**24.4 %**	22.8 %	28.0 %	25.0 %	30.7 %
FINANCIAL POSITION					
Current assets (3)	**$ 4,279.4**	$ 4,447.5	$ 4,853.0	$ 4,698.4	$ 4,892.0
Property, plant and equipment, net	**3,365.0**	3,228.3	3,050.6	2,882.0	2,409.1
Goodwill, intangible and other assets (4)	**10,685.8**	10,965.9	11,523.8	12,027.4	10,234.5
Total assets	**$ 18,330.2**	$ 18,641.7	$ 19,427.4	$ 19,607.8	$ 17,535.6
Current liabilities (3) (4)	**$ 3,019.4**	$ 4,764.4	$ 4,367.9	$ 3,487.5	$ 3,052.4
Long-term debt (4)	**6,145.7**	4,260.2	4,843.4	6,016.0	5,699.7
Postretirement health care and pension benefits	**1,019.2**	1,117.1	1,188.5	795.6	1,220.5
Other liabilities	**1,175.0**	1,519.6	1,645.5	1,899.3	1,402.9
Total liabilities	**11,359.3**	11,661.3	12,045.3	12,198.4	11,375.5
Ecolab shareholders' equity	**6,901.1**	6,909.9	7,315.9	7,344.3	6,077.0
Noncontrolling interest	**69.8**	70.5	66.2	65.1	83.1
Total equity	**6,970.9**	6,980.4	7,382.1	7,409.4	6,160.1
Total liabilities and equity	**$ 18,330.2**	$ 18,641.7	$ 19,427.4	$ 19,607.8	$ 17,535.6
SELECTED CASH FLOW INFORMATION					
Cash provided by operating activities	**$ 1,939.7**	$ 1,999.8	$ 1,815.6	$ 1,559.8	$ 1,203.0
Cash used for investing activities	**(829.5)**	(915.8)	(848.3)	(2,078.7)	(487.9)
Cash used for financing activities	**(868.2)**	(1,150.9)	(1,071.0)	(292.6)	(1,393.6)
Depreciation and amortization	**850.7**	859.5	872.0	816.2	714.5
Capital expenditures	**707.4**	771.0	748.7	625.1	574.5
Cash dividends declared per common share	**1.420**	1.340	1.155	0.965	0.830
SELECTED FINANCIAL MEASURES/OTHER					
Total debt	**$ 6,687.0**	$ 6,465.5	$ 6,548.2	$ 6,875.8	$ 6,505.2
Total debt to capitalization	**49.0 %**	48.1 %	47.0 %	48.1 %	51.4 %
Book value per common share	**$ 23.65**	$ 23.35	$ 24.40	$ 24.39	$ 20.62
Return on beginning equity	**17.9 %**	13.8 %	16.5 %	15.8 %	12.2 %
Dividends per share/diluted earnings per common share	**34.3 %**	40.4 %	29.4 %	30.5 %	35.3 %
Net interest coverage	**7.2**	6.4	7.6	5.9	4.7
Year end market capitalization	**$ 34,207.7**	$ 33,852.7	$ 31,340.6	$ 31,399.4	$ 21,190.5
Annual common stock price range	**$ 124.60 - 98.62**	$ 122.48 - 97.78	$ 118.46 - 97.65	$ 108.34 - 71.99	$ 72.79 - 57.44
Number of employees	**47,565**	47,145	47,430	45,415	40,860

(1) Cost of sales includes special charges of $66.0 in 2016, $80.6 in 2015, $14.3 in 2014, $43.2 in 2013 and $93.9 in 2012; Net interest expense includes special charges of $2.5 in 2013 and $19.3 in 2012; Net income (loss) attributable to non-controlling interest includes special charges of $12.8 in 2015, $0.5 in 2013 and $4.5 in 2012.
(2) Amounts exclude the impact of special (gains) and charges and discrete tax items.
(3) During 2015, the Company changed its accounting policy for presenting derivatives subject to master netting agreements with the same counterparties, resulting in a reduction in its December 31, 2014 current assets and current liabilities.
(4) During 2015, the Company adopted the accounting guidance related to simplifying the presentation of debt issue costs, resulting in reductions to other assets, current liabilities and long-term debt across the 2012 to 2014 years presented.

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 both 2015 and 2014 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 and 2014 reporting years 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 continued to work aggressively through 2016's difficult environment, where lackluster global economies, significantly unfavorable foreign currency translation and continued depressed energy market activity presented multiple headwinds to our growth. We once again delivered superior results for customers at the lowest total operating cost to them, while also working aggressively to deliver margin improvement. We also continued to make significant investments in our customer, field and infrastructure technology as well as in our talent management systems, all key areas that will be critical to our long-term success.

In this environment, our Global Institutional, Global Industrial and Other segments continued to show good fixed currency sales and earnings results. However, these were offset by a decline in the Global Energy segment, coupled with significantly unfavorable currency translation due to the strong dollar appreciation relative to other currencies. We worked aggressively to offset these headwinds, while making progress in our work to strengthen our businesses and position them for better growth in 2017.

Sales

Reported sales declined 3% to $13.2 billion in 2016 from $13.5 billion in 2015. Sales were negatively impacted by unfavorable foreign currency exchange rates compared to the prior year. When measured in fixed rates of foreign currency exchange, fixed currency sales were flat 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 30 and the "Sales by Reportable Segment" table on page 36 for reconciliation information.

Gross Margin

Our reported gross margin was 47.5% of sales for 2016, which compared to our 2015 reported gross margin of 46.7%. Excluding the impact of special (gains) and charges included in cost of sales from both 2016 and 2015, our adjusted gross margin was 48.0% in 2016 and 47.3% in 2015. 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 30 for reconciliation information.

Operating Income

Reported operating income increased 23% to $1.9 billion in 2016, compared to $1.6 billion in 2015. Adjusted operating income, excluding the impact of special (gains) and charges, decreased 2% in 2016. When measured in fixed rates of foreign currency exchange, adjusted fixed currency operating income increased 3%. 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 34 and Operating Income by Reportable Segment table on page 36 for reconciliation information.

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

Reported diluted EPS increased 25% to $4.14 in 2016 compared to $3.32 in 2015. Special (gains) and charges had an impact on both years, driven primarily by Energy related charges in 2016 and Venezuelan related actions, restructuring charges and other gains and charges in both 2016 and 2015. Also in 2015, special (gains) and charges included acquisition and integration related costs that were completed during the fourth quarter of 2015. Adjusted diluted EPS, which exclude the impact of special (gains) and charges and discrete tax items from both 2016 and 2015 were flat at $4.37 in both 2016 and 2015. 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 35 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 that 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 2.3 and 2.6 for 2016 and 2015, respectively. Our net debt to adjusted EBITDA, defined as the sum of EBITDA and special (gains) and charges impacting EBITDA, was 2.2 for both 2016 and 2015. We view these ratios as important indicators of the operational and financial health of our organization. See 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 40 for reconciliation information.

Cash Flow

Cash flow from operating activities was $1.9 billion in 2016 compared to $2.0 billion in 2015. 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 6% in December 2016 to an indicated annual rate of $1.48 per share. The increase represents our 25th consecutive annual dividend rate increase and the 80th 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.

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 that 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 $68 million and $75 million, as of December 31, 2016 and 2015, respectively. These amounts include our allowance for sales returns and credits of $14 million and $15 million as of December 31, 2016 and 2015, respectively. Our bad debt expense as a percent of reported net sales was 0.2% in 2016, 2015 and 2014. We believe that 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 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 and 2014, 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 2016, our weighted-average discount rate decreased to 4.27% from 4.51% at year-end 2015. In determining our U.S. postretirement health care obligation for 2016, our weighted-average discount rate decreased to 4.14% from 4.38% at year-end 2015.

- 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 2015, 2016 and 2017 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 2015 and 2016 U.S. pension expenses was 4.32% and for 2017 it is 4.03%. For postretirement benefit measurement purposes as of December 31, 2016, the annual rates of increase in the per capita cost of covered health care were assumed to be 6.75% for pre-65 costs and 7.25% for post-65 costs. The rates are assumed to decrease each year until they reach 5% in 2023 and remain at those levels thereafter.

- In determining our U.S. pension and U.S. postretirement health care obligation for 2016, we utilized the most recent mortality table, MP-2016 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 increased to $533 million as of December 31, 2016 from $513 million as of December 31, 2015 (both before tax), primarily due to current 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, 2016, on the December 31, 2016 funded status and 2017 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 2017 Expense
Discount rate	-0.25 pts	$ 65.7	$ 5.5
Expected return on assets	-0.25 pts	N/A	4.8

	Effect on U.S. Postretirement Health Care Benefits Plans		
(millions)	Assumption Change	Increase in Recorded Obligation	Higher 2017 Expense
Discount rate	-0.25 pts	$ 5.1	$ 0.5
Expected return on assets	-0.25 pts	N/A	0.0

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. Restructuring charges were substantially completed within our two active plans (Combined and Energy) during the fourth quarter of 2015. Our restructuring liability balance was $40 million and $90 million as of December 31, 2016 and 2015, respectively.

For additional information on our current 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.

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. During interim periods, 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.

During the first quarter of 2016 we early-adopted the accounting guidance that requires all deferred tax assets and liabilities to be classified as noncurrent on the Consolidated Balance Sheet, using the prospective application method. Periods prior to the first quarter of 2016 have not been retrospectively adjusted for adoption of this guidance.

U.S. deferred income taxes are not 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. It is impractical to determine the amount of incremental taxes on an ongoing basis that might arise if all undistributed earnings were distributed.

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 2012. The IRS has completed examinations of our U.S. federal income tax returns (Champion) through 2011 and tax year 2012 is closed by statute of limitations. Our U.S. federal income tax returns for the years 2013 and 2014 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 that our tax returns properly reflect the tax consequences of our operations, and that 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 $76 million and $75 million as of December 31, 2016 and 2015, respectively.

For additional information on income taxes and adoption of new accounting guidance related to classification of deferred tax assets and liabilities on the Consolidated Balance Sheet, see Note 12 and Note 2, respectively.

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 $6.4 billion and $6.5 billion as of December 31, 2016 and 2015, 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 $6.4 billion and $6.5 billion as of December 31, 2016 and 2015, 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 ten operating segments.

For our 2016 impairment assessment, we completed our assessment for goodwill impairment across our ten 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 2016 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. No events during the second half of 2016 indicated a need to update our conclusions reached during the second quarter of 2016.

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, 2016 and 2015. 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 2016. Based on this testing, no adjustment to the carrying value was necessary. Additionally, no events during the second half of 2016 indicated a need to update our conclusions reached during the second quarter of 2016.

RESULTS OF OPERATIONS

Net Sales

				Percent Change	
(millions)	**2016**	2015	2014	**2016**	2015
Reported GAAP net sales	**$ 13,152.8**	$ 13,545.1	$ 14,280.5	**(3)%**	(5)%
Effect of foreign currency translation	**(197.8)**	(630.8)	(1,514.8)		
Non-GAAP fixed currency sales	**$ 12,955.0**	$ 12,914.3	$ 12,765.7	**0 %**	1 %

As shown in the table above, foreign currency exchange negatively impacted sales growth during both 2016 and 2015 reporting years. The percentage components of the year-over-year sales change are shown below:

(percent)	**2016**	2015
Volume	**(1)%**	0%
Price changes	**0**	0
Acquisition adjusted fixed currency sales change	**(1)**	0
Acquisitions & divestitures	**1**	1
Fixed currency sales change	**0**	1
Foreign currency translation	**(3)**	(6)
Reported GAAP net sales change	**(3)%**	(5)%

Cost of Sales ("COS") and Gross Profit Margin ("Gross Margin")

	2016		2015		2014	
(millions/percent)	COS	Gross Margin	COS	Gross Margin	COS	Gross Margin
Reported GAAP COS and gross margin	**$ 6,898.9**	**47.5 %**	$ 7,223.5	46.7 %	$ 7,679.1	46.2 %
Special (gains) and charges	**66.0**	**0.5**	80.6	0.6	14.3	0.1
Non-GAAP adjusted COS and gross margin	**$ 6,832.9**	**48.0 %**	$ 7,142.9	47.3 %	$ 7,664.8	46.3 %

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 47.5%, 46.7% and 46.2% for 2016, 2015 and 2014, respectively. Our 2016, 2015 and 2014 reported gross margins were negatively impacted by special (gains) and charges of $66.0 million, $80.6 million and $14.3 million, respectively. Special (gains) and charges items impacting COS are shown within the special (gains) and charges table on page 31.

Excluding the impact of special (gains) and charges, our 2016 adjusted gross margin was 48.0% compared against a 2015 adjusted gross margin of 47.3%. 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.

Excluding the impact of special (gains) and charges, our adjusted gross margin was 47.3% and 46.3% for 2015 and 2014, respectively. The increase was due primarily to delivered product cost savings and synergies.

Selling, General and Administrative Expenses ("SG&A")

(percent)	2016	2015	2014
SG&A Ratio	32.7 %	32.1 %	32.1 %

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.

The consistent SG&A ratio comparing 2015 against 2014 resulted from the impact of net synergies and cost savings actions which were offset by investments in the business.

Special (Gains) and Charges

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

(millions)	2016	2015	2014
Cost of sales			
Restructuring activities	$ (0.4)	$ 16.5	$ 13.9
Inventory costs	(6.2)	(14.5)	-
Inventory reserves	-	20.6	-
Energy related charges	62.6	-	-
Fixed asset impairment and other inventory charges	10.0	24.7	0.4
Venezuela related activities	-	33.3	-
Subtotal	66.0	80.6	14.3
Special (gains) and charges			
Restructuring activities	(8.7)	83.8	69.2
Champion and Nalco integration costs	-	18.7	28.4
Energy related charges	14.2	-	-
Venezuela related activities	(7.8)	256.0	-
Other	41.8	56.3	(28.8)
Subtotal	39.5	414.8	68.8
Operating income subtotal	105.5	495.4	83.1
Net income attributable to noncontrolling interest			
Restructuring activities	-	(1.7)	-
Venezuela related activities	-	(11.1)	-
Subtotal	-	(12.8)	-
Total special (gains) and charges	$ 105.5	$ 482.6	$ 83.1

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.

Energy Restructuring Plan

In April 2013, following the completion of the Champion transaction, we commenced plans to undertake restructuring and other cost-saving actions to realize our acquisition-related cost synergies as well as streamline and strengthen our position in the global energy market (the "Energy Restructuring Plan"). Actions associated with the acquisition to improve the effectiveness and efficiency of the business included a reduction of the combined business's global workforce. Actions also included leveraging and simplifying our global supply chain, including the reduction of plant, distribution center and redundant facility locations and product line optimization.

Restructuring charges within the Energy Restructuring Plan were substantially completed during the fourth quarter of 2015 with certain immaterial actions continuing into 2016. Cumulative restructuring charges of $89 million ($60 million after tax and net of the impact from noncontrolling interest), are materially consistent with our initial expectation of $80 million ($55 million after tax).

We recorded restructuring charges of $4.5 million ($2.6 million after tax) or $0.01 per diluted share, $47.2 million ($33.0 million after tax) or $0.10 per diluted share and $9.5 million ($6.4 million after tax) or $0.02 per diluted share during 2016, 2015 and 2014, respectively. As a result of the ownership structure of certain entities holding Energy Restructuring charges, we reflected $1.7 million of the 2015 charges as a component of net income (loss) attributable to noncontrolling interest on the Consolidated Statement of Income.

Net cash payments under the Energy Restructuring Plan were $14.4 million during 2016 and $42.5 million from 2013 through 2015. The majority of cash payments under this plan are related to severance, with the current accrual expected to be paid over a period of a few months to several quarters. We anticipate the remaining cash expenditures will be funded from operating activities.

During 2016 the Energy Restructuring Plan achieved approximately $25 million of incremental savings as compared to 2015. Cumulative cost savings from this plan, along with synergies achieved in connection with the acquisition, were approximately $150 million through 2016 and are materially consistent with our original expectations.

Combined Restructuring Plan

In February 2011, we commenced a comprehensive plan to substantially improve the efficiency and effectiveness of our European business, as well as undertake certain restructuring activities outside of Europe, historically referred to as the “2011 Restructuring Plan”. Additionally, in January 2012, following the merger with Nalco, we formally commenced plans to undertake restructuring actions related to the reduction of our global workforce and optimization of our supply chain and office facilities, including planned reductions of plant and distribution center locations, historically referred to as the “Merger Restructuring Plan”. During the first quarter of 2013, we determined that the objectives of the plans discussed above were aligned, and consequently, the previously separate restructuring plans were combined into one plan.

The combined restructuring plan (the “Combined Plan”) combines opportunities and initiatives from both plans and continues to follow the original format of the Merger Restructuring Plan by focusing on global actions related to optimization of the supply chain and office facilities, including reductions of the global workforce, plant and distribution center locations.

Restructuring charges within the Combined Plan were substantially completed during the fourth quarter of 2015, with certain immaterial actions continuing into 2016. Cumulative restructuring charges of $391 million ($297 million after tax), are materially consistent with our initial expectation of $400 million ($300 million after tax).

We recorded net gains of $13.6 million ($13.4 million after tax) or $0.05 per diluted share during 2016 primarily related to gains on the sale of certain facilities related to previous restructuring initiatives. We recorded net charges of $53.0 million ($44.2 million after tax) or $0.15 per diluted share and $73.5 million ($58.5 million after tax) or $0.19 per diluted share during 2015 and 2014, respectively.

Net cash payments under the Combined Plan were $14.9 million during 2016 and $303.1 million from 2011 through 2015. The majority of cash payments under the Combined Plan are related to severance, with the current accrual expected to be paid over a period of a few months to several quarters. We anticipate the remaining cash expenditures will continue to be funded from operating activities.

During 2016, the Combined Plan achieved approximately $25 million of incremental savings as compared to 2015. Cumulative cost savings from this plan, along with annual cost saving and synergies, were approximately $420 million through 2016 and are materially consistent with our original expectations.

Non-Restructuring Special (Gains) and Charges

Energy related charges

Oil industry activity remained depressed during 2016 when compared with 2014 levels, resulting from continued excess oil supply pressures, which have negatively impacted exploration and production investments in the energy industry, particularly in North America. During the second and fourth quarters of 2016, 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.

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 2016, we had $7.4 million of corresponding severance remaining to be paid, which is expected to be paid within the next twelve months and be funded from operating activities.

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. We used the cost method of accounting for the investment in our Venezuelan subsidiaries throughout 2016 as the conditions within Venezuela driving this decision remained in place during 2016. 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). As a result of the ownership structure of our Food & Beverage and Institutional operations in Venezuela, 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.

During 2016, we recorded a gain of $7.8 million ($4.9 million after tax) or $0.02 per diluted share resulting from U.S. dollar cash recoveries of intercompany receivables written off at the time of deconsolidation.

Venezuela related 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.

Fixed asset impairment and other inventory charges

During 2015, we recorded a 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. The impaired facility is a specialized facility used for dry polymer production. Due to market contraction in the oil and the mining industries, and the aggressive competitive pricing environment for dry polymers, the facility has not reached production volumes to recover the value of the underlying fixed assets.

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 is 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 inventory reserve

During 2015, we improved and standardized estimates related to our inventory reserves and product costing, resulting in a net pre-tax charge of approximately $6 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.

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

Champion and Nalco integration costs

Integration related special charges for the Champion acquisition and Nalco merger were completed during the fourth quarter of 2015, and we did not incur any special charges related to such transactions during 2016. As 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 and $28.4 million ($19.8 million after tax) or $0.06 per diluted share, during 2015 and 2014, respectively. Champion and Nalco integration charges have been included as a component of special (gains) and charges on the Consolidated Statement of Income.

Other special (gains) and charges

During 2016, we recorded charges of $41.8 million ($26.4 million after tax) or $0.09 per diluted share, primarily consisting of litigation related charges.

During 2015, we recorded a net charge of $56.3 million ($34.5 million after tax), or $0.11 per diluted share, primarily made up of litigation related charges and 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.

During 2014, we recorded a special gain of $28.4 million ($23.3 million after tax), or $0.08 per diluted share, as a result of a favorable licensing settlement and other settlement gains, the consolidation of the Emirates National Chemicals Company LLC ("Emochem") entity and removal of the corresponding equity method investment and the disposition of a business.

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

Operating Income and Operating Income Margin

(millions)	2016	2015	2014	Percent Change 2016	Percent Change 2015
Reported GAAP operating income	**$ 1,915.0**	$ 1,561.3	$ 1,955.0	**23 %**	(20)%
Special (gains) and charges	**105.5**	495.4	83.1		
Non-GAAP adjusted operating income	**2,020.5**	2,056.7	2,038.1	**(2)**	1
Effect of foreign currency translation	**(32.2)**	(129.1)	(251.3)		
Non-GAAP adjusted fixed currency operating income	**$ 1,988.3**	$ 1,927.6	$ 1,786.8	**3 %**	8 %

(percent)	2016	2015	2014
Reported GAAP operating income margin	**14.6 %**	11.5 %	13.7 %
Non-GAAP adjusted operating income margin	**15.4 %**	15.2 %	14.3 %
Non-GAAP adjusted fixed currency operating income margin	**15.3 %**	14.9 %	14.0 %

Our reported operating income increased 23% when comparing 2016 to 2015 and decreased 20% when comparing 2015 to 2014. Our reported operating income for 2016, 2015 and 2014 was impacted by special (gains) and charges. Excluding the impact of special (gains) and charges from all three years, 2016 adjusted operating income decreased 2% when compared to 2015 adjusted operating income and 2015 adjusted operating income increased 1% when compared to 2014 adjusted operating income.

As shown in the previous table, foreign currency translation had a negative impact on adjusted operating income growth for both 2016 and 2015, as adjusted fixed currency operating income increased 3% for 2016 and 8% for 2015. Acquisitions and divestitures negatively impacted our 2016 adjusted fixed currency operating income growth rates by approximately 1 percentage point. In 2015, acquisitions and divestitures added 1 percentage point to fixed currency operating income growth.

As addressed further in the "Segment Performance" section of this MD&A, comparisons across 2014 to 2016 were impacted by growth in Global Industrial, Global Institutional and Other offset by the continued challenges within Global Energy.

Interest Expense, Net

Reported net interest expense totaled $264.6 million, $243.6 million and $256.6 million during 2016, 2015 and 2014, respectively. The increase in 2016 net interest expense compared to 2015 net interest expense was driven primarily by higher weighted average interest rates on outstanding debt. The decrease in 2015 net interest expense compared to 2014 net interest expense was driven primarily by lower weighted average interest rates on outstanding debt.

Provision for Income Taxes

The following table provides a summary of our tax rate:

(percent)	2016	2015	2014
Reported GAAP tax rate	**24.4 %**	22.8 %	28.0 %
Tax rate impact of:			
Special gains and charges	**1.0**	(0.4)	(0.1)
Discrete tax items	**(0.2)**	3.5	(0.7)
Non-GAAP adjusted tax rate	**25.2 %**	25.9 %	27.2 %

Our reported tax rate for 2016, 2015 and 2014 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 overall non-GAAP adjusted 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.

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. Our 2014 reported tax rate includes $21.6 million of net tax benefits on special gains and charges and net expense of $13.2 million associated with discrete tax items. The corresponding impact of these items on the reported tax rate is shown in the table above.

During 2016, we recognized net expenses related to discrete tax items of $3.9 million. The net expenses 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 non-U.S. 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.

Net expenses related to discrete tax items in 2014 were driven primarily by an update to non-current tax liabilities for certain global tax audits, an adjustment related to the re-characterization of intercompany payments between our U.S. and foreign affiliates, the remeasurement of certain deferred tax assets and liabilities resulting from changes in our deferred state tax rate, recognizing adjustments from filing our 2013 U.S. federal and state tax returns, net changes of valuation allowances based on the realizability of foreign deferred tax assets and the impact from other foreign country audit settlements.

The decrease in our adjusted tax rate from 2014 to 2016 was impacted by global tax planning projects, as well as favorable geographic income mix. Future comparability of our adjusted tax rate may be impacted by various factors, including but not limited to, U.S. domestic tax reform proposals, further tax planning projects and geographic income mix.

Net Income Attributable to Ecolab

				Percent Change	
(millions)	**2016**	2015	2014	**2016**	2015
Reported GAAP net income attributable to Ecolab	**$ 1,229.6**	$ 1,002.1	$ 1,202.8	**23 %**	(17)%
Adjustments:					
Special (gains) and charges, after tax	**62.4**	376.9	61.5		
Discrete tax net expense (benefit)	**3.9**	(63.3)	13.2		
Non-GAAP adjusted net income attributable to Ecolab	**$ 1,295.9**	$ 1,315.7	$ 1,277.5	**(2)%**	3 %

Diluted EPS

				Percent Change	
(dollars)	**2016**	2015	2014	**2016**	2015
Reported GAAP diluted EPS	**$ 4.14**	$ 3.32	$ 3.93	**25 %**	(16)%
Adjustments:					
Special (gains) and charges	**0.21**	1.25	0.20		
Discrete tax net expense (benefit)	**0.01**	(0.21)	0.04		
Non-GAAP adjusted diluted EPS	**$ 4.37**	$ 4.37	$ 4.18	**0 %**	5 %

Per share amounts do not necessarily sum due to rounding.

Currency translation had a significant unfavorable impact on reported and adjusted diluted EPS comparability across 2014 to 2016, with headwinds of approximately $0.31 per share for 2016 compared to 2015 and approximately $0.30 per share for 2015 compared to 2014.

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 2016. 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 both 2015 and 2014 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 2016, 2015 and 2014 for our reportable segments are shown in the following tables.

Net Sales

				Percent Change	
(millions)	**2016**	2015	2014	**2016**	2015
Global Industrial	**$ 4,617.1**	$ 4,485.5	$ 4,261.9	**3 %**	5 %
Global Institutional	**4,495.6**	4,210.9	3,982.8	**7**	6
Global Energy	**3,035.8**	3,470.8	3,815.8	**(13)**	(9)
Other	**806.5**	747.1	705.2	**8**	6
Subtotal at fixed currency	**12,955.0**	12,914.3	12,765.7	**0**	1
Effect of foreign currency translation	**197.8**	630.8	1,514.8		
Total reported net sales	**$ 13,152.8**	$ 13,545.1	$ 14,280.5	**(3)%**	(5)%

Operating Income

				Percent Change	
(millions)	**2016**	2015	2014	**2016**	2015
Global Industrial	**$ 703.0**	$ 626.4	$ 538.8	**12 %**	16 %
Global Institutional	**966.7**	876.6	772.6	**10**	13
Global Energy	**337.1**	465.5	534.8	**(28)**	(13)
Other	**148.1**	127.5	109.9	**16**	16
Corporate	**(272.1)**	(663.8)	(252.4)		
Subtotal at fixed currency	**1,882.8**	1,432.2	1,703.7	**31**	(16)
Effect of foreign currency translation	**32.2**	129.1	251.3		
Total reported operating income	**$ 1,915.0**	$ 1,561.3	$ 1,955.0	**23 %**	(20)%

Global Industrial

	2016	2015	2014
Sales at fixed currency (millions)	**$ 4,617.1**	$ 4,485.5	$ 4,261.9
Sales at public currency (millions)	**4,709.8**	4,726.9	4,907.6
Volume	**2 %**	2 %	
Price changes	**1 %**	1 %	
Acquisition adjusted fixed currency sales change	**2 %**	3 %	
Acquisitions and divestitures	**1 %**	2 %	
Fixed currency sales change	**3 %**	5 %	
Foreign currency translation	**(3)%**	(9)%	
Public currency sales change	**(0)%**	(4)%	
Operating income at fixed currency (millions)	**$ 703.0**	$ 626.4	$ 538.8
Operating income at public currency (millions)	**719.9**	673.0	643.1
Fixed currency operating income change	**12 %**	16 %	
Fixed currency operating income margin	**15.2 %**	14.0 %	12.6 %
Acquisition adjusted fixed currency operating income change	**12 %**	14 %	
Acquisition adjusted fixed currency operating income margin	**15.4 %**	14.1 %	12.8 %
Public currency operating income change	**7 %**	5 %	

Amounts do not necessarily sum due to rounding.

Net Sales

Fixed currency sales growth for Global Industrial in both 2016 and 2015 was driven by volume gains and pricing. At a regional level, the 2016 sales increase was impacted by good growth in Latin America and moderate growth in Middle East/Africa ("MEA") and Europe. Regional results for 2015 were impacted by strong growth in Latin America and MEA, moderate growth in Europe and modest gains in North America.

At an operating segment level, ***Water*** 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. Fixed currency sales increased 6% in 2015, (increase of 3% acquisition adjusted) with good growth in the light and heavy industries, which offset slower sales in mining. ***Food & Beverage*** fixed currency sales increased 3% in 2016, benefiting from corporate account and share gains, which more than offset generally flat industry trends. Sales in the beverage and food markets showed good growth, with slower sales in the dairy and agri markets. Fixed currency sales increased 6% in 2015, (increase of 4% acquisition adjusted). Growth was led by the beverage and brewing market, with modest gains in the dairy and food markets. ***Paper*** fixed currency sales increased 2% in 2016, helped by strong sales efforts and business wins. Market conditions in Asia Pacific, including Greater China, have remained challenging. Fixed currency sales increased 2% in 2015 impacted by new account gains and continued technology penetration. ***Textile Care*** fixed currency sales increased 4% in 2016, benefiting from new customer accounts in Europe. Fixed currency sales increased 5% in 2015, impacted by new accounts and customer penetration within North America and Europe.

Operating Income

Fixed currency operating income and fixed currency operating income margins for Global Industrial increased in both 2016 and 2015. Acquisitions negatively impacted fixed currency operating income growth and fixed currency operating income margins.

Acquisition adjusted fixed currency operating income margins increased 1.3 percentage points in both 2016 and 2015, benefiting from favorable impact of sales volume gains, product mix changes and pricing gains, which added approximately 1.3 and 1.2 percentage points in 2016 and 2015, respectively. Acquisition adjusted fixed currency operating income margins were also impacted by cost savings initiatives and lower delivered product costs, offset by investments in the business.

Global Institutional

	2016	2015	2014
Sales at fixed currency (millions)	$ 4,495.6	$ 4,210.9	$ 3,982.8
Sales at public currency (millions)	4,540.3	4,307.6	4,310.5
Volume	3 %	4 %	
Price changes	2 %	1 %	
Acquisition adjusted fixed currency sales change	5 %	5 %	
Acquisitions and divestitures	2 %	1 %	
Fixed currency sales change	7 %	6 %	
Foreign currency translation	(1)%	(6)%	
Public currency sales change	5 %	(0)%	
Operating income at fixed currency (millions)	$ 966.7	$ 876.6	$ 772.6
Operating income at public currency (millions)	972.7	889.2	820.6
Fixed currency operating income change	10 %	13 %	
Fixed currency operating income margin	21.5 %	20.8 %	19.4 %
Acquisition adjusted fixed currency operating income change	12 %	14 %	
Acquisition adjusted fixed currency operating income margin	22.3 %	21.0 %	19.4 %
Public currency operating income change	9 %	8 %	

Amounts do not necessarily sum due to rounding.

Net Sales

Fixed currency sales growth for Global Institutional in both 2016 and 2015 benefited from volume increases and pricing gains. At a regional level, the 2016 sales increase was led by good growth in North America, Latin America and Asia Pacific. The 2015 sales increase was led by strong growth in Asia Pacific and MEA, good growth in North America and Latin America, and modest gains in Europe.

At an operating segment level, ***Institutional*** 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.

Global lodging demand showed marginal growth while restaurant foot traffic data remains soft. Fixed currency sales increased 7% (increase of 6% acquisition adjusted) in 2015, as sales initiatives, new accounts and globalization of our leading technologies drove growth. ***Specialty*** 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. Fixed currency sales increased 7% in 2015. Quick service sales were solid, benefiting from new accounts and new product penetration; our food retail business showed good sales growth. ***Healthcare*** 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. Fixed currency sales increased 2% in 2015, benefiting from new account growth, customer penetration and product introductions.

Operating Income

Fixed currency operating income and fixed currency operating income margins increased for Global Institutional in both 2016 and 2015. Acquisitions negatively impacted fixed currency operating income growth and fixed currency operating income margins.

Acquisition adjusted fixed currency operating income margins increased 1.3 and 1.6 percentage points in 2016 and 2015, respectively. The favorable impact of pricing gains, product mix changes and sales volume increases added approximately 1.9 and 2.3 percentage points in both 2016 and 2015, respectively, partially offset by investments in the business. Delivered product cost savings in 2015 also impacted comparisons.

Global Energy

	2016	2015	2014
Sales at fixed currency (millions)	$ 3,035.8	$ 3,470.8	$ 3,815.8
Sales at public currency (millions)	3,092.9	3,747.2	4,310.6
Volume	(10)%	(8)%	
Price changes	(3)%	(2)%	
Acquisition adjusted fixed currency sales change	(13)%	(10)%	
Acquisitions and divestitures	0 %	1 %	
Fixed currency sales change	(13)%	(9)%	
Foreign currency translation	(5)%	(4)%	
Public currency sales change	(17)%	(13)%	
Operating income at fixed currency (millions)	$ 337.1	$ 465.5	$ 534.8
Operating income at public currency (millions)	348.4	538.0	638.4
Fixed currency operating income change	(28)%	(13)%	
Fixed currency operating income margin	11.1 %	13.4 %	14.0 %
Acquisition adjusted fixed currency operating income change	(28)%	(14)%	
Acquisition adjusted fixed currency operating income margin	10.8 %	13.2 %	13.9 %
Public currency operating income change	(35)%	(16)%	

Amounts do not necessarily sum due to rounding.

Net Sales

Fixed currency sales for Global Energy were negatively impacted by volume reductions and lower pricing for both 2016 and 2015. Across both comparable periods, 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 and grew modestly in 2015. Market challenges in North America drove the reductions from a regional perspective in both 2016 and 2015.

Operating Income

Fixed currency operating income for Global Energy decreased during both 2016 and 2015. Fixed currency operating income margins also decreased during both comparable periods. Acquisitions had a minimal impact on the fixed currency operating income and fixed currency operating income margins during both 2016 and 2015.

Acquisition adjusted fixed currency operating income margins for our Global Energy segment decreased 2.4 and 0.7 percentage points in 2016 and 2015, respectively. Reductions in sales volume, product mix changes and lower pricing contributed approximately 5.7 and 3.5 percentage points to the decline in 2016 and 2015, respectively, and which offset the benefit of lower delivered product costs, synergies and other cost reduction actions.

Other

	2016	2015	2014
Sales at fixed currency (millions)	**$ 806.5**	$ 747.1	$ 705.2
Sales at public currency (millions)	**809.8**	763.4	751.8
Volume	**6 %**	4 %	
Price changes	**2 %**	2 %	
Acquisition adjusted fixed currency sales change	**8 %**	7 %	
Acquisitions and divestitures	**(0)%**	(1)%	
Fixed currency sales change	**8 %**	6 %	
Foreign currency translation	**(2)%**	(4)%	
Public currency sales change	**6 %**	2 %	
Operating income at fixed currency (millions)	**$ 148.1**	$ 127.5	$ 109.9
Operating income at public currency (millions)	**148.0**	129.3	116.3
Fixed currency operating income change	**16 %**	16 %	
Fixed currency operating income margin	**18.4 %**	17.1 %	15.6 %
Acquisition adjusted fixed currency operating income change	**16 %**	16 %	
Acquisition adjusted fixed currency operating income margin	**18.4 %**	17.1 %	15.6 %
Public currency operating income change	**14 %**	11 %	

Amounts do not necessarily sum due to rounding.

Net Sales

Fixed currency sales growth for Other in both 2016 and 2015 was driven by volume increases and pricing gains. At a regional level, the 2016 sales increase was led by good growth in Asia Pacific, Latin America, North America and MEA. The 2015 sales increase was led by good growth in Latin America, North America and Asia Pacific, with moderate gains in Europe.

At an operating segment level, ***Pest Elimination*** fixed currency sales increased 8% in 2016, impacted by continued gains in the foodservice market, benefiting from customer penetration and new service offerings. Fixed currency sales increased 7% in 2015, impacted by gains in the foodservice market. ***Equipment Care*** fixed currency sales increased 7% in 2016, driven by continued increases in both service and parts sales, benefiting from new customer additions. Fixed currency sales increased 7% in 2015, driven by increases in both service and parts sales.

Operating Income

Fixed currency operating income growth and the corresponding operating margin for our Other segment increased in both 2016 and 2015.

Fixed currency operating income and fixed currency operating income margins for our Other segment increased 1.3 and 1.5 percentage points in 2016 and 2015, respectively. The favorable impact of pricing gains, product mix changes and sales volume increases added approximately 2.4 and 2.7 percentage points for 2016 and 2015, respectively 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 36 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 31.

FINANCIAL POSITION, CASH FLOW AND LIQUIDITY

Financial Position

Total assets were $18.3 billion as of December 31, 2016, compared to total assets of $18.6 billion as of December 31, 2015. The decrease in assets was driven primarily by the negative impact of foreign currency exchange rates on the value of our foreign assets translated into U.S. dollars as of year end 2016 and 2015, the impact of adopting the accounting guidance related to the presentation of deferred tax assets and liabilities, as discussed in Note 2, and the impact of intangible asset amortization.

Total liabilities were $11.4 billion as of December 31, 2016, compared to total liabilities of $11.7 billion as of December 31, 2015. Total debt was $6.7 billion as of December 31, 2016 and $6.5 billion as of December 31, 2015. 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.

	2016	2015	2014
(ratio)			
Net debt to EBITDA	2.3	2.6	2.2
Net debt to adjusted EBITDA	2.2	2.2	2.2
(millions)			
Total debt	$ 6,687.0	$ 6,465.5	$ 6,548.2
Cash	327.4	92.8	209.6
Net debt	$ 6,359.6	$ 6,372.7	$ 6,338.6
Net income including non-controlling interest	$ 1,247.1	$ 1,017.2	$ 1,222.2
Provision for income taxes	403.3	300.5	476.2
Interest expense, net	264.6	243.6	256.6
Depreciation	561.0	559.5	558.1
Amortization	289.7	300.0	313.9
EBITDA	2,765.7	2,420.8	2,827.0
Special (gains) and charges impacting EBITDA	105.5	495.4	83.1
Adjusted EBITDA	$ 2,871.2	$ 2,916.2	$ 2,910.1

Cash Flows

Operating Activities

				Dollar Change	
(millions)	2016	2015	2014	2016	2015
Cash provided by operating activities	$ 1,939.7	$ 1,999.8	$ 1,815.6	$ (60.1)	$ 184.2

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

Comparability of cash generated from operating activities across 2014 to 2016 was impacted by fluctuations in accounts receivable, inventories and accounts payable ("working capital"), the combination of which increased $35 million, $119 million and $212 million in 2016, 2015 and 2014 respectively. The cash flow impact across the three years from accounts receivable was driven by changes in sales volumes and timing of collections. The cash flow impact across the three years from inventories was impacted by timing of purchases and production and usage levels, and from accounts payable was impacted by 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)	2016	2015	2014	2016	2015
Pensions and postretirement plan contributions	$ 211.8	$ 64.9	$ 76.7	$ 146.9	$ (11.8)
Restructuring payments	51.6	61.7	85.3	(10.1)	(23.6)
Income tax payments	359.1	533.1	522.0	(174.0)	11.1
Interest payments	267.0	237.2	255.5	29.8	(18.3)

Investing Activities

(millions)	2016	2015	2014	Dollar Change 2016	Dollar Change 2015
Cash used for investing activities	**$ (829.5)**	$ (915.8)	$ (848.3)	**$ 86.3**	$ (67.5)

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 2016, 2015 and 2014 was $49 million, $265 million and $72 million, respectively. Our acquisitions and divestitures across 2016, 2015 and 2014 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 $757 million, $815 million and $794 million in 2016, 2015 and 2014, respectively.

Comparability of cash used for investing activities across 2014 to 2016 was impacted by other factors, including the following:

- Restricted cash activity in 2016 related to the pending Anios transaction, as discussed further in Note 4.
- Settlement of a net investment hedges in 2016, 2015 and 2014.
- Receipt of Champion related escrow funds in 2015.

Financing Activities

(millions)	2016	2015	2014	Dollar Change 2016	Dollar Change 2015
Cash used for financing activities	**$ (868.2)**	$ (1,150.9)	$ (1,071.0)	**$ 282.7**	$ (79.9)

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 consideration.

Our 2016 debt financing activities included the issuance of €575 million 1.00%, $750 million 2.70%, $250 million 3.70%, $400 million 2.00% and $400 million 3.25% fixed rate senior notes; the scheduled repayment of our $1.25 billion 3.00% and €175 million 4.585% senior notes and repayment of the remaining $125 million of our term loan borrowings. Net issuances and repayments of commercial paper and notes payable led to a net decrease of $606 million during 2016.

Our 2015 debt financing activities included the issuance of $300 million 1.55%, $300 million 2.25% and €575 million 2.625% fixed rate senior notes; the scheduled repayment of our $250 million 4.875% and $500 million 1.00% senior notes; and repayment of $275 million of term loan borrowings. Net repayments of commercial paper and notes payable led to a net decrease of $312 million during 2015.

Our 2014 debt financing activities included the repayment of $400 million of term loan borrowings, and the scheduled repayment of our $500 million 2.375% senior notes. Net borrowings of commercial paper and notes payable led to a net cash inflow of $600 million during 2014.

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.

In February 2015, we announced a $1.0 billion share repurchase program, which was completed during the second quarter of 2016. We repurchased a total of $740 million and $755 million of shares in 2016 and 2015, respectively. These amounts include $300 million of shares repurchased through the ASR program in both 2016 and 2015, respectively. See Note 10 for further information regarding our ASR programs. During 2014, we repurchased $429 million of shares. Cash proceeds and tax benefits from stock option exercises provide a portion of the funding for repurchase activity.

In December 2016, we increased our indicated annual dividend rate by 6%. This represents the 25th consecutive year we have increased our dividend. We have paid dividends on our common stock for 80 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
2016	**$ 0.350**	**$ 0.350**	**$ 0.350**	**$ 0.370**	**$ 1.420**
2015	0.330	0.330	0.330	0.350	1.340
2014	0.275	0.275	0.275	0.330	1.155

Financing activities for 2014 also included an acquisition-related contingent consideration payment of $86 million made to Champion's former shareholders.

Liquidity and Capital Resources

We currently expect to fund all of our cash requirements which are reasonably foreseeable for 2017, 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, 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.

We consider the remaining portion of our foreign earnings to be indefinitely reinvested in foreign jurisdictions and we have no intention to repatriate such funds. We continue to be focused on building our global business and these funds are available for use by our international operations. To the extent the remaining portion of the foreign earnings would be repatriated, such amounts would be subject to income tax or foreign withholding tax liabilities that may be fully or partially offset by foreign tax credits, both in the U.S. and in various applicable foreign jurisdictions.

As of December 31, 2016 we had a $2.0 billion multi-year credit facility, which expires in December 2019. The credit facility has been established with a diverse syndicate of banks. There were no borrowings under our credit facility as of December 31, 2016 or 2015.

The credit facility supports our $2.0 billion U.S. commercial paper program and $2.0 billion European commercial paper program. We increased the European commercial paper program from $200 million during the third quarter of 2016. Combined borrowing under these two commercial paper programs may not exceed $2.0 billion. As of December 31, 2016, we had no amount outstanding under either our U.S. or European commercial paper programs.

Additionally, we have other committed and uncommitted credit lines of $746 million with major international banks and financial institutions to support our general global funding needs, including with respect to bank supported letters of credit, performance bonds and guarantees. Approximately $554 million of these credit lines were available for use as of year-end 2016.

As of December 31, 2016, our short-term borrowing program was rated A-2 by Standard & Poor's and P-2 by Moody's.
As of December 31, 2016, 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 prior to termination.

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

A schedule of our obligations as of December 31, 2016 under various notes payable, long-term debt agreements, operating leases with noncancelable terms in excess of one year and interest obligations 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	$ 30	$ 30	$ -	$ -	$ -
Commercial paper	-	-	-	-	-
Long-term debt	6,652	510	967	1,567	3,608
Capital lease obligations	5	1	1	1	2
Operating leases	431	102	153	105	71
Interest*	2,261	218	396	360	1,287
Total	$ 9,379	$ 861	$ 1,517	$ 2,033	$ 4,968

* Interest on variable rate debt was calculated using the interest rate at year-end 2016.

As of December 31, 2016, our gross liability for uncertain tax positions was $76 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 are not required to make any contributions to our U.S. pension and postretirement healthcare benefit plans in 2017 based on plan asset values as of December 31, 2016. 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 $42 million in 2017. 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.

Except for the approximately $192 million utilized under the bank lines noted previously supporting domestic and international commercial relationships and transactions, we do not have significant unconditional purchase obligations or significant other commercial commitments.

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 any 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, 2016, 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, 2016, we had interest rate swaps outstanding with notional values of $1,450 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 $50 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

During 2016, approximately 23% of our sales were generated from Global Energy, the results of which, as noted further below, are subject to volatility in the oil and gas commodity markets.

Oil industry activity remained depressed during 2016, when compared with 2014 levels, resulting from continued excess oil supply pressures, which have negatively impacted exploration and production investments in the energy industry, particularly in North America. We also experienced additional pricing headwinds in 2016 when compared to 2015. As a result of these conditions, we recorded charges related to inventory write-downs and related disposal costs, fixed asset charges, employee termination costs and other charges during the second and fourth quarters of 2016, as discussed further in Note 3.

Demand for oil and overall energy consumption has remained consistent.

Our global footprint and broad business portfolio within Global Energy, 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.

As petroleum derived materials are key inputs to many of our chemical products, lower oil prices provide benefits across our segments in the form of lower raw material costs.

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

The June 23, 2016 referendum by British voters to exit the European Union ("Brexit") resulted in a sharp decline in the value of the British pound, as compared to the U.S. dollar and other currencies.

Brexit is non-binding; however, if passed into law, negotiations would commence to determine the future terms of the U.K.'s relationship with the European Union. The effects of Brexit will depend on any agreements the U.K. makes to retain access to European Union markets either during a transitional period or more permanently. Volatility in exchange rates is expected to continue in the short term as the U.K. negotiates its exit from the European Union. 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.

During 2016, net sales of our U.K. operations were approximately 3% of our consolidated net sales.

Global Foreign Currency Markets

The U.S. dollar remained strong against most global currencies during 2016, when compared against both 2015 and 2014 levels, impacting our comparative results. As described in Note 8, we utilize our derivative program to mitigate risks associated with certain foreign currency exposures and our investments in foreign operations.

NEW ACCOUNTING PRONOUNCEMENTS

Information regarding new accounting pronouncements is included in Note 2.

SUBSEQUENT EVENTS

In January 2017, we acquired Abednego Environmental Services ("Abednego"), a privately held company based in Novi, Michigan. Abednego provides water solutions to automotive customers. Pre-acquisition annual sales were approximately $40 million.

On February 1, 2017, we acquired Anios for a total consideration of approximately $800 million in cash, inclusive of the satisfaction of outstanding debt. Anios 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 we are able to offer while also providing a complementary geographic footprint within the healthcare market. Pre-acquisition annual sales were approximately $245 million.

In February 2017, we entered into an ASR agreement with a financial institution to repurchase $300 million of our common stock.

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

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 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 2016. 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.

See discussion appearing under the headings entitled "Market Risk" and “Global Environment” within the MD&A of this Form 10-K.

Item 8. Financial Statements and Supplementary Data.

REPORTS OF MANAGMENT

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, 2016.

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, 2016 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.:

In our opinion, the accompanying consolidated balance sheets and the related consolidated statements of income, comprehensive income, equity and cash flows present fairly, in all material respects, the financial position of Ecolab Inc. and its subsidiaries at December 31, 2016 and 2015, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2016 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, 2016, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The Company's management is responsible for these 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 these financial statements and on the Company's internal control over financial reporting based on our integrated audits. We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement and whether effective internal control over financial reporting was maintained in all material respects. Our audits of the financial statements included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. 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.

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
Minneapolis, Minnesota
February 24, 2017

CONSOLIDATED STATEMENT OF INCOME

Year ended December 31, (millions, except per share amounts)	2016	2015	2014
Net sales	**$ 13,152.8**	$ 13,545.1	$ 14,280.5
Operating expenses			
Cost of sales (including special charges (a))	**6,898.9**	7,223.5	7,679.1
Selling, general and administrative expenses	**4,299.4**	4,345.5	4,577.6
Special (gains) and charges	**39.5**	414.8	68.8
Operating income	**1,915.0**	1,561.3	1,955.0
Interest expense, net	**264.6**	243.6	256.6
Income before income taxes	**1,650.4**	1,317.7	1,698.4
Provision for income taxes	**403.3**	300.5	476.2
Net income including noncontrolling interest	**1,247.1**	1,017.2	1,222.2
Net income attributable to noncontrolling interest (including special charges (a))	**17.5**	15.1	19.4
Net income attributable to Ecolab	**$ 1,229.6**	$ 1,002.1	$ 1,202.8
Earnings attributable to Ecolab per common share			
Basic	**$ 4.20**	$ 3.38	$ 4.01
Diluted	**$ 4.14**	$ 3.32	$ 3.93
Dividends declared per common share	**$ 1.420**	$ 1.340	$ 1.155
Weighted-average common shares outstanding			
Basic	**292.5**	296.4	300.1
Diluted	**296.7**	301.4	305.9

(a) Cost of sales includes special charges of $66.0 in 2016, $80.6 in 2015, and $14.3 in 2014, respectively. 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)	2016	2015	2014
Net income including noncontrolling interest	**$ 1,247.1**	$ 1,017.2	$ 1,222.2
Other comprehensive income (loss), net of tax			
Foreign currency translation adjustments			
Foreign currency translation	**(230.4)**	(626.8)	(350.3)
Gain (loss) on net investment hedges	**(2.5)**	101.3	34.7
Reclassification associated with Venezuelan entities	**-**	2.4	-
	(232.9)	(523.1)	(315.6)
Derivatives and hedging instruments	**(17.5)**	11.7	3.9
Pension and postretirement benefits			
Current period net actuarial income (loss)	**(102.3)**	(2.3)	(354.8)
Pension and postretirement prior period service costs and benefits adjustments	**7.7**	4.5	(0.6)
Amortization of net actuarial loss and prior service costs included in net periodic pension and postretirement costs	**20.2**	33.6	12.1
Postretirement benefits changes	**33.9**	-	-
Reclassification associated with Venezuelan entities	**-**	2.2	-
	(40.5)	38.0	(343.3)
Subtotal	**(290.9)**	(473.4)	(655.0)
Total comprehensive income, including noncontrolling interest	**956.2**	543.8	567.2
Comprehensive income attributable to noncontrolling interest	**16.2**	13.1	11.1
Comprehensive income attributable to Ecolab	**$ 940.0**	$ 530.7	$ 556.1

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

CONSOLIDATED BALANCE SHEET

December 31, (millions, except per share amounts)	2016	2015
ASSETS		
Current assets		
Cash and cash equivalents	**$ 327.4**	$ 92.8
Accounts receivable, net	**2,341.2**	2,390.2
Inventories	**1,319.4**	1,388.2
Deferred income taxes	**-**	250.0
Other current assets	**291.4**	326.3
Total current assets	**4,279.4**	4,447.5
Property, plant and equipment, net	**3,365.0**	3,228.3
Goodwill	**6,383.0**	6,490.8
Other intangible assets, net	**3,817.8**	4,109.2
Other assets	**485.0**	365.9
Total assets	**$ 18,330.2**	$ 18,641.7
LIABILITIES AND EQUITY		
Current liabilities		
Short-term debt	**$ 541.3**	$ 2,205.3
Accounts payable	**983.2**	1,049.6
Compensation and benefits	**516.3**	509.0
Income taxes	**87.4**	52.2
Other current liabilities	**891.2**	948.3
Total current liabilities	**3,019.4**	4,764.4
Long-term debt	**6,145.7**	4,260.2
Postretirement health care and pension benefits	**1,019.2**	1,117.1
Deferred income taxes	**970.2**	1,281.2
Other liabilities	**204.8**	238.4
Total liabilities	**11,359.3**	11,661.3
Equity (a)		
Common stock	**352.6**	350.3
Additional paid-in capital	**5,270.8**	5,086.1
Retained earnings	**6,975.0**	6,160.3
Accumulated other comprehensive loss	**(1,712.9)**	(1,423.3)
Treasury stock	**(3,984.4)**	(3,263.5)
Total Ecolab shareholders' equity	**6,901.1**	6,909.9
Noncontrolling interest	**69.8**	70.5
Total equity	**6,970.9**	6,980.4
Total liabilities and equity	**$ 18,330.2**	$ 18,641.7

(a) Common stock, 800.0 million shares authorized, $1.00 par value, 291.8 million shares outstanding at December 31, 2016, 296.0 million shares outstanding at December 31, 2015. 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)	2016	2015	2014
OPERATING ACTIVITIES			
Net income including noncontrolling interest	$ 1,247.1	$ 1,017.2	$ 1,222.2
Adjustments to reconcile net income to cash provided by operating activities:			
Depreciation	561.0	559.5	558.1
Amortization	289.7	300.0	313.9
Deferred income taxes	(90.6)	(244.5)	(121.5)
Share-based compensation expense	85.7	78.2	71.1
Excess tax benefits from share-based payment arrangements	(43.6)	(57.8)	(55.9)
Pension and postretirement plan contributions	(211.8)	(64.9)	(76.7)
Pension and postretirement plan expense	54.1	113.8	83.9
Restructuring charges, net of cash paid	(60.5)	38.4	0.3
Venezuelan charges	-	289.3	-
(Gain) Loss on sale of business	(0.5)	13.7	(4.8)
Asset charges and write-downs	65.9	24.7	-
Other, net	14.2	11.6	7.8
Changes in operating assets and liabilities, net of effect of acquisitions:			
Accounts receivable	0.9	(24.0)	(175.4)
Inventories	18.8	(48.6)	(210.8)
Other assets	(34.9)	(69.1)	(106.3)
Accounts payable	(55.1)	(46.1)	174.7
Other liabilities	99.3	108.4	135.0
Cash provided by operating activities	1,939.7	1,999.8	1,815.6
INVESTING ACTIVITIES			
Capital expenditures	(707.4)	(771.0)	(748.7)
Capitalized software expenditures	(49.4)	(44.2)	(45.2)
Property and other assets sold	30.5	15.0	10.9
Acquisitions and investments in affiliates, net of cash acquired	(49.5)	(265.9)	(82.6)
Divestiture of businesses	0.9	0.5	10.4
Deposit into acquisition related escrow	-	-	(9.4)
Release from acquisition related escrow	-	45.6	8.7
Reduction of cash due to Venezuelan deconsolidation	-	(4.2)	-
Restricted cash activity	(55.9)	-	-
Settlement of net investment hedges	1.3	108.4	7.6
Cash used for investing activities	(829.5)	(915.8)	(848.3)
FINANCING ACTIVITIES			
Net issuances (repayments) of commercial paper and notes payable	(606.4)	(312.1)	599.6
Long-term debt borrowings	2,390.0	1,223.7	-
Long-term debt repayments	(1,569.6)	(1,034.7)	(907.8)
Reacquired shares	(739.6)	(755.1)	(428.6)
Dividends paid	(427.5)	(400.7)	(344.4)
Exercise of employee stock options	76.8	83.1	65.4
Excess tax benefits from share-based payment arrangements	43.6	57.8	55.9
Acquisition related liabilities and contingent consideration	(35.5)	(12.9)	(98.7)
Acquisition of noncontrolling interests	-	-	(8.4)
Other, net	-	-	(4.0)
Cash used for financing activities	(868.2)	(1,150.9)	(1,071.0)
Effect of exchange rate changes on cash and cash equivalents	(7.4)	(49.9)	(25.9)
Increase (decrease) in cash and cash equivalents	234.6	(116.8)	(129.6)
Cash and cash equivalents, beginning of period	92.8	209.6	339.2
Cash and cash equivalents, end of period	$ 327.4	$ 92.8	$ 209.6
SUPPLEMENTAL CASH FLOW INFORMATION			
Income taxes paid	$ 359.1	$ 533.1	$ 522.0
Interest paid	267.0	237.2	255.5

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

CONSOLIDATED STATEMENT OF EQUITY

(millions)	Common Stock	Additional Paid-in Capital	Retained Earnings	OCI (Loss)	Treasury Stock	Ecolab Shareholders' Equity	Non-Controlling Interest	Total Equity
	Ecolab Shareholders							
Balance, December 31, 2013	$ 345.1	$ 4,692.0	$ 4,699.0	$ (305.2)	$ (2,086.6)	$ 7,344.3	$ 65.1	$ 7,409.4
Net income			1,202.8			1,202.8	19.4	1,222.2
Comprehensive income (loss) activity				(646.7)		(646.7)	(8.3)	(655.0)
Cash dividends declared			(346.7)			(346.7)	(14.0)	(360.7)
Champion acquisition							(2.9)	(2.9)
Acquisition of noncontrolling interests		(0.3)				(0.3)	6.9	6.6
Stock options and awards	2.6	182.8			5.7	191.1		191.1
Reacquired shares					(428.6)	(428.6)		(428.6)
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**

COMMON STOCK ACTIVITY

	2016		2015		2014	
Year ended December 31(shares)	Common Stock	Treasury Stock	Common Stock	Treasury Stock	Common Stock	Treasury Stock
Shares, beginning of year	**350,339,820**	**(54,372,729)**	347,724,788	(47,872,332)	345,101,009	(43,965,830)
Stock options	**1,778,821**	**58,969**	1,962,360	151,261	1,850,757	122,455
Stock awards	**489,100**	**14,291**	652,672	14,745	773,022	8,231
Reacquired shares		**(6,483,198)**		(6,666,403)		(4,037,188)
Shares, end of year	**352,607,741**	**(60,782,667)**	350,339,820	(54,372,729)	347,724,788	(47,872,332)

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, pest elimination services, and equipment maintenance and repair 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 that it does 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. 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 charged 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 $14 million, $15 million and $14 million as of December 31, 2016, 2015, and 2014, 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)	2016	2015	2014
Beginning balance	$ 75	$ 77	$ 81
Bad debt expense	20	26	23
Write-offs	(25)	(22)	(20)
Other (a)	(2)	(6)	(7)
Ending balance	$ 68	$ 75	$ 77

(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 market. Certain U.S. inventory costs are determined on a last-in, first-out ("LIFO") basis. LIFO inventories represented 40% and 39% of consolidated inventories as of December 31, 2016 and 2015, respectively. LIFO inventories include certain legacy Nalco U.S. inventory acquired at fair value as part of the Nalco merger. 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.

During 2015, the Company improved and standardized estimates related to its inventory reserves and product costing, resulting in a net pre-tax charge of approximately $6 million. Separately, the actions resulted in a charge of $20.6 million related to inventory reserve calculations, partially offset by a gain of $14.5 million related to the capitalization of certain cost components into inventory. During 2016, the Company took additional actions to improve and standardize estimates related to the capitalization of certain cost components into inventory, which resulted in a gain of $6.2 million. These items are reflected within special (gains) and charges, as discussed in Note 3.

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 $561 million, $560 million and $558 million for 2016, 2015 and 2014, 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 2016, the Company completed its scheduled annual assessment for goodwill impairment across its ten 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 2016 indicated the estimated fair value of each of its reporting units exceeded its carrying amount by a significant margin. Additionally, no events during the second half of 2016 indicated a need to update the Company's conclusions reached during the second quarter of 2016.

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.

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, 2014	$ 2,642.2	$ 691.2	$ 3,262.1	$ 121.5	$ 6,717.0
Current year business combinations (a)	84.2	6.1	45.0	0.9	136.2
Prior year business combinations (b)	0.7	-	-	-	0.7
Dispositions	(0.4)	-	(0.1)	-	(0.5)
Reclassifications (c)	(23.7)	2.9	20.8	-	-
Effect of foreign currency translation	(142.2)	(37.5)	(176.3)	(6.6)	(362.6)
December 31, 2015	$ 2,560.8	$ 662.7	$ 3,151.5	$ 115.8	$ 6,490.8
Current year business combinations (a)	**-**	**3.1**	**0.6**	**-**	**3.7**
Prior year business combinations (b)	**3.5**	**-**	**0.1**	**-**	**3.6**
Reclassifications (c)	**3.5**	**(0.6)**	**(2.9)**	**-**	**-**
Effect of foreign currency translation	**(45.5)**	**(11.8)**	**(55.7)**	**(2.1)**	**(115.1)**
December 31, 2016	**$ 2,522.3**	**$ 653.4**	**$ 3,093.6**	**$ 113.7**	**$ 6,383.0**

(a) For 2016, the Company expects approximately $3.0 million of the goodwill related to businesses acquired to be tax deductible. For 2015, $45.9 million of the goodwill related to businesses acquired is expected to be tax deductible.
(b) Represents purchase price allocation adjustments for acquisitions deemed preliminary as of the end of the prior year.
(c) 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 2016, 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 2016 indicated a need to update the Company's conclusions reached during the second quarter of 2016. 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, 2016 and 2015.

The weighted-average useful life by type of amortizable asset at December 31, 2016 is as follows:

(years)	
Customer relationships	14
Trademarks	14
Patents	14
Other technology	7

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)	
2014	$ 305
2015	292
2016	290
2017	287
2018	283
2019	270
2020	264
2021	260

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. 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 Venezuela. Also during 2015 and 2016, the Company impaired certain long-lived assets related to a product line within one of its U.S. plants. See Note 3 for additional information regarding this asset impairment.

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. Deferred income taxes are provided on the undistributed earnings of foreign subsidiaries except to the extent such earnings are considered to be permanently reinvested in the subsidiary. The Company records liabilities for income tax uncertainties in accordance with the U.S. GAAP recognition and measurement criteria guidance.

During the first quarter of 2016, the Company early-adopted the accounting guidance issued in November 2015 that requires all deferred tax assets and liabilities to be classified as noncurrent on the Consolidated Balance Sheet, using the prospective application method. Periods prior to the first quarter of 2016 have not been retrospectively adjusted for adoption of this guidance. Previous guidance required the deferred taxes for each jurisdiction to be presented as a net current asset or liability and net noncurrent asset or liability. As a result of the new guidance, each jurisdiction now only has one net noncurrent deferred tax asset or liability. The new guidance does not change the existing requirement that only permits offsetting deferred tax assets and liabilities within a single jurisdiction.

See Note 12 for additional information regarding income taxes.

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.

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.

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. See the "New Accounting Pronouncements" table within this Note for discussion on future changes to revenue recognition.

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.

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)	2016	2015	2014
Net income attributable to Ecolab	$ 1,229.6	$ 1,002.1	$ 1,202.8
Weighted-average common shares outstanding			
Basic	292.5	296.4	300.1
Effect of dilutive stock options and units	4.2	5.0	5.8
Diluted	296.7	301.4	305.9
Basic EPS	$ 4.20	$ 3.38	$ 4.01
Diluted EPS	$ 4.14	$ 3.32	$ 3.93
Anti-dilutive securities excluded from the computation of EPS	3.6	3.5	3.4

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 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.
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 will include appropriate disclosure requirements within the 2016 10-K to adhere to this new ASU.
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 Company is currently evaluating the impact of adoption.
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. The Company does not expect the updated guidance to have a significant impact on future financial statements.
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	The Company is currently evaluating the impact of adoption.
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. The Company is currently evaluating the impact of adoption.
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	The Company is evaluating the impact of adoption.
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	Upon adoption, among other impacts, the Company expects its reported provision for income taxes to become more volatile, dependent upon market prices and the volume of share-based compensation exercises and vestings.
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 Company does not expect the updated guidance to have a significant impact on future 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 Company does not expect the updated guidance to have a significant impact on future financial statements.
ASU 2016-02 - Leases (Topic 842)	February 2016	Introduces the recognition of lease assets and lease liabilities by lessors 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 financials at the bottom of this table in note (a).
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 Company does not expect the updated guidance to have a significant impact on future financial statements.
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 Company does not expect the updated guidance to have a significant impact on future financial statements.
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 financials at the bottom of this table in note (b).

(a) As part of implementing the new standard, the Company is in process of reviewing current accounting policies and assessing the practical expedients allowed under the new accounting guidance. The Company expects that 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 requires a modified retrospective transition to be applied at the beginning of the earliest comparative period presented in the year of adoption.

(b) The Company's approach to implementing the new standard includes performing a detailed review of key contracts representative of its different businesses, and comparing historical accounting policies and practices to the new standard. The Company is focusing on the identification and evaluation of performance obligations within certain contracts, as well as the classification of certain costs associated with the identified performance obligations. In addition to expanded disclosures associated with the new standard, the Company is continuing to assess the impact on the Company's consolidated financial statements. The guidance permits two methods of adoption, retrospectively to each prior reporting period presented (full retrospective method), or retrospectively with the cumulative effect of initially applying the guidance recognized at the date of initial application (the cumulative catch-up transition method). The Company has not yet selected the method of adoption.

Standard	Date of Issuance	Description	Date of Adoption	Effect on the Financial Statements
Standards that were adopted:				
ASU 2015-02 — Consolidation (Topic 810): Amendments to the Consolidation Analysis	February 2015	Certain factors that previously required reporting entities to consolidate a given legal entity have been eliminated, requiring fewer legal entities to be consolidated under the new guidance.	January 1, 2016	The adoption of the guidance did not have a material impact on the Company's financial statements.
ASU 2015-05 — Intangibles - Goodwill and Other - Internal Use Software (Subtopic 350-40): Customer's Accounting for Fees Paid in a Cloud Computing Arrangement	April 2015	An entity that is the customer in a cloud computing arrangement that includes a software license should account for the software license element of the arrangement consistent with the acquisition of other software licenses.	January 1, 2016	The adoption of the guidance did not have a material impact on the Company's financial statements.
ASU 2015-07 - Fair Value Measurement (Topic 820): Disclosures for Investments in Certain Entities That Calculate Net Asset Value per Share (or its Equivalent) (a consensus of the Emerging Issues Taskforce)	May 2015	Investments for which fair value is measured at net asset value per share (or its equivalent) using the practical expedient of ASC 820 should not be categorized in the fair value hierarchy. However, the reporting entity should continue to disclose information on such investments.	January 1, 2016	As discussed in Note 16, presentation impact related to year end 2016 pension plan asset disclosures.

ASU 2015-16 - Business Combinations (Topic 805): Simplifying the Accounting for Measurement-Period Adjustments	September 2015	The amendment requires an acquirer to recognize adjustments identified during the measurement period in the reporting period in which the adjustment amounts are determined and to recognize a cumulative catch-up, if any, in the same period on the income statement as a result of the adjustment, calculated as if the accounting had been completed on the acquisition date. The amendment also requires an entity to present separately on the face of the income statement or disclose in the notes the amount of the cumulative adjustment by line item.	January 1, 2016	The adoption of the guidance did not have a material impact on the Company's financial statements.
ASU 2015-17- Income Taxes (Topic 740): Balance Sheet Classification of Deferred Taxes	November 2015	The amendment requires that all deferred tax assets and liabilities be classified as non-current in the consolidated balance sheet.	January 1, 2016	As discussed in Note 2, the Company early-adopted the updated guidance in the first quarter of 2016, resulting in presentation related changes to its deferred tax assets and liabilities.

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)	2016	2015	2014
Cost of sales			
Restructuring activities	$ (0.4)	$ 16.5	$ 13.9
Inventory costs	(6.2)	(14.5)	-
Inventory reserves	-	20.6	-
Energy related charges	62.6	-	-
Fixed asset impairment and other inventory charges	10.0	24.7	0.4
Venezuela related activities	-	33.3	-
Subtotal	66.0	80.6	14.3
Special (gains) and charges			
Restructuring activities	(8.7)	83.8	69.2
Champion and Nalco integration costs	-	18.7	28.4
Energy related charges	14.2	-	-
Venezuela related activities	(7.8)	256.0	-
Other	41.8	56.3	(28.8)
Subtotal	39.5	414.8	68.8
Operating income subtotal	105.5	495.4	83.1
Net income attributable to noncontrolling interest			
Restructuring activities	-	(1.7)	-
Venezuela related activities	-	(11.1)	-
Subtotal	-	(12.8)	-
Total special (gains) and charges	$ 105.5	$ 482.6	$ 83.1

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

Energy Restructuring Plan

In April 2013, following the completion of the Champion transaction, the Company commenced plans to undertake restructuring and other cost-saving actions to realize its acquisition-related cost synergies as well as streamline and strengthen Ecolab's position in the global energy market. Actions associated with the acquisition to improve the effectiveness and efficiency of the business included a reduction of the combined business's global workforce. Actions also included leveraging and simplifying its global supply chain, including the reduction of plant, distribution center and redundant facility locations and product line optimization.

Restructuring charges within the Energy Restructuring Plan were substantially completed during the fourth quarter of 2015 with certain immaterial actions continuing into 2016. Cumulative restructuring charges of $89 million ($60 million after tax and net of the impact from noncontrolling interest), are materially consistent with the Company's initial expectation of $80 million ($55 million after tax).

The Company recorded restructuring charges of $4.5 million ($2.6 million after tax), $47.2 million ($33.0 million after tax) and $9.5 million ($6.4 million after tax) during 2016, 2015 and 2014, respectively. As a result of the ownership structure of certain entities holding Energy Restructuring Plan charges, the Company reflected $1.7 million of the 2015 charges as a component of net income (loss) attributable to noncontrolling interest on the Consolidated Statement of Income.

Restructuring charges and activity related to the Energy Restructuring Plan since inception of the underlying actions include the following:

(millions)	Employee Termination Costs	Asset Disposals	Other	Total
2013 - 2015 Activity				
Recorded expense and accrual	$ 55.6	$ 13.2	$ 15.3	$ 84.1
Net cash payments	(44.3)	3.9	(2.1)	(42.5)
Non-cash charges	-	(17.1)	-	(17.1)
Effect of foreign currency translation	0.4	-	-	0.4
Restructuring liability, December 31, 2015	11.7	-	13.2	24.9
2016 Activity				
Recorded expense (income) and accrual	**(1.0)**	**0.8**	**4.7**	**4.5**
Net cash payments	**(6.2)**	**-**	**(8.2)**	**(14.4)**
Non-cash charges	**-**	**(0.8)**	**-**	**(0.8)**
Effect of foreign currency translation	**(0.2)**	**-**	**-**	**(0.2)**
Restructuring liability, December 31, 2016	**$ 4.3**	**$ -**	**$ 9.7**	**$ 14.0**

The majority of cash payments under this plan are related to severance, with the current accrual expected to be paid over a period of a few months to several quarters. The Company anticipates the remaining cash expenditures will continue to be funded from operating activities.

Combined Plan

In February 2011, the Company commenced a comprehensive plan to substantially improve the efficiency and effectiveness of its European business, as well as to undertake certain restructuring activities outside of Europe, historically referred to as the "2011 Restructuring Plan". Additionally, in January 2012 and following the merger with Nalco, the Company formally commenced plans to undertake restructuring actions related to the reduction of its global workforce and optimization of its supply chain and office facilities, including planned reduction of plant and distribution center locations, historically referred to as the "Merger Restructuring Plan". During the first quarter of 2013, the Company determined that because the objectives of the plans discussed above were aligned, the previously separate restructuring plans should be combined into one plan.

The Combined Plan combines opportunities and initiatives from both plans and continues to follow the original format of the Merger Restructuring Plan by focusing on global actions related to optimization of the supply chain and office facilities, including reductions of the global workforce, plant and distribution center locations.

Restructuring charges within the Combined Plan were substantially completed during the fourth quarter of 2015, with certain immaterial actions continuing into 2016. Cumulative restructuring charges of $391 million ($297 million after tax), are materially consistent with the Company's initial expectation of $400 million ($300 million after tax).

The Company recorded net gains of $13.6 million ($13.4 million after tax) during 2016 primarily related to gains on the sale of certain facilities related to previous restructuring initiatives. The Company recorded net charges of $53.0 million ($44.2 million after tax) and $73.5 million ($58.5 million after tax) during 2015 and 2014, respectively.

Restructuring charges and activity related to the Combined Plan since inception of the underlying actions include the following:

(millions)	Employee Termination Costs	Asset Disposals	Other	Total
2011 - 2015 Activity				
Recorded expense and accrual	$ 349.7	$ 6.1	$ 48.4	$ 404.2
Net cash payments	(281.3)	16.3	(38.1)	(303.1)
Non-cash net charges	0.6	(22.4)	(4.7)	(26.5)
Effect of foreign currency translation	(9.4)	-	-	(9.4)
Restructuring liability, December 31, 2015	59.6	-	5.6	65.2
2016 Activity				
Recorded expense (income) and accrual	**(3.1)**	**(9.9)**	**(0.6)**	**(13.6)**
Net cash payments	**(32.8)**	**22.3**	**(4.4)**	**(14.9)**
Non-cash net charges	**-**	**(12.4)**	**-**	**(12.4)**
Effect of foreign currency translation	**1.3**	**-**	**-**	**1.3**
Restructuring liability, December 31, 2016	**$ 25.0**	**$ -**	**$ 0.6**	**$ 25.6**

The majority of cash payments under the Combined Plan are related to severance, with the current accrual expected to be paid over a period of a few months to several quarters. The Company anticipates the remaining cash expenditures will continue to be funded from operating activities.

Non-restructuring Special (Gains) and Charges

Energy related charges

Oil industry activity remained depressed during 2016 when compared with 2014 levels, resulting from continued excess oil supply pressures, which have negatively impacted exploration and production investments in the energy industry, particularly in North America. During the second and fourth quarters of 2016, 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.

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 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 2016, the Company had $7.4 million of corresponding severance remaining to be paid, which is expected to be paid within the next twelve months and be funded from operating activities.

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 Company used the cost method of accounting for the investment in its Venezuelan subsidiaries throughout 2016 as the conditions within Venezuela driving this decision remained in place during 2016. Prior to deconsolidation, the Company remeasured its Venezuelan bolivar operations within its Water, Paper, Food & Beverage, Institutional and the bolivar portion of the Company's Venezuelan operations included 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. 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). As a result of the ownership structure of the Company's Food & Beverage and Institutional operations in Venezuela, it reflected $11.1 million 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 net of the impact from noncontrolling interest.

During 2016, the Company recorded a gain of $7.8 million ($4.9 million after tax) resulting from U.S. dollar cash recoveries of intercompany receivables written off at the time of deconsolidation.

Venezuela related 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.

Fixed asset impairment and other inventory charges

During 2015, the Company recorded a 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. The impaired facility is a specialized facility used for dry polymer production. Due to market contraction in the oil and the mining industries, and the aggressive competitive pricing environment for dry polymers, the facility has not reached production volumes to recover the value of the underlying fixed assets. The fair value of the underlying assets was determined using the discounted cash flow method.

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 is 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 inventory 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 approximately $6 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).

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

Champion and Nalco integration costs

Integration related special charges for the Champion acquisition and Nalco merger were completed during the fourth quarter of 2015, and the Company did not incur any special charges related to such transactions during 2016. As a result of the Champion acquisition and Nalco merger, the Company incurred charges of $18.7 million ($12.0 million after tax) and $28.4 million ($19.8 million after tax), during 2015 and 2014, respectively.

Champion and Nalco integration charges have been included as a component of special (gains) and charges on the Consolidated Statement of Income.

Other special (gains) and charges

During 2016, the Company recorded other charges of $41.8 million ($26.4 million after tax), primarily consisting of litigation related charges.

During 2015, the Company recorded a net charge of $56.3 million ($34.5 million after tax), primarily made up of litigation related charges and the recognition of a loss on the sale of a portion of the Company's Ecovation business, offset partially by the recovery of funds deposited into escrow as part of the Champion transaction.

During 2014, the Company recorded a special gain of $28.4 million ($23.3 million after tax), as a result of a favorable licensing settlement and other settlement gains, the consolidation of the Emochem entity and removal of the corresponding equity method investment and the disposition of a business.

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

4. ACQUISITIONS AND DISPOSITIONS

Acquisitions

Ecolab makes acquisitions that align with the Company's 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 consolidated with the Company. The purchase price allocation is based on estimates of the fair value of assets acquired and liabilities assumed. The results of operations related to each acquired entity have been included in the results of the Company from the date each entity was acquired. The aggregate purchase price of acquisitions has been reduced for any cash or cash equivalents acquired with the acquisition.

Acquisitions during 2016, 2015 and 2014 were not material to the Company's consolidated financial statements. The components of the cash paid for acquisitions, including acquisition related liability and contingent consideration activity for current and prior year transactions, during 2016, 2015, and 2014, are shown in the following table.

(millions)	2016	2015	2014
Net tangible assets acquired and equity method investments	$ 46.9	$ 103.7	$ 18.2
Identifiable intangible assets			
Customer relationships	2.6	65.6	32.0
Patents	-	6.7	-
Trademarks	-	13.5	3.4
Non-compete agreements	-	4.2	-
Other technology	1.1	8.7	4.5
Total intangible assets	3.7	98.7	39.9
Goodwill	7.3	136.9	32.9
Total aggregate purchase price	57.9	339.3	91.0
Acquisition related liabilities and contingent consideration	27.1	(60.5)	12.3
Net cash paid for acquisitions, including acquisition related liabilities and contingent consideration	$ 85.0	$ 278.8	$ 103.3

The acquisition related liability activity during 2016 is related primarily to payments of settled liabilities from previous transactions. The 2015 acquisition related liability is related to hold-back liabilities and contingent consideration as part of the Jianghai, Swisher and UltraFab acquisitions, as discussed further below. The 2014 contingent consideration activity primarily related to payments on legacy Nalco acquisitions.

The weighted average useful lives of identifiable intangible assets acquired, was 4 years as of December 2016 and 10 years as of both December 2015 and December 2014

Subsequent Event Activity

In January 2017, the Company acquired Abednego Environmental Services ("Abednego"), a privately held company based in Novi, Michigan. Abednego provides water solutions to automotive customers. With pre-acquisition annual sales of approximately $40 million, the acquired business will become part of the Company's Global Industrial reportable segment during the first quarter of 2017.

On February 1, 2017, the Company acquired Anios for a total consideration of approximately $800 million in cash, inclusive of the satisfaction of outstanding debt. Anios 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. With pre-acquisition annual sales of approximately $245 million, the acquired business will become part of the Company's Global Institutional reportable segment during the first quarter of 2017.

The Company anticipates intangible assets related to customer relationships, patents, tradenames, and technology and goodwill to be recorded as part of this transaction. However, due to the timing of the close of the transaction, the fair value of all assets acquired and liabilities assumed within the transaction have not been finalized and remain subject to change. The Company will finalize the amounts recognized as information necessary to complete the analysis is obtained. During 2016, the Company deposited approximately $50 million in an escrow account that was released back to the Company upon closing of the transaction. As shown within Note 5, this was recorded as restricted cash within Other Assets on the Consolidated Balance Sheet.

2016 Activity

In July 2016, the Company made a 33% minority investment in Aquatech. Based in Canonsburg, Pennsylvania, Aquatech is a global leader in the design and engineering of complex and comprehensive water treatment solutions that improve water quality and reduce net

water usage. The Company determined that it exerts significant influence, but less than controlling interest, over Aquatech and therefore has accounted for the investment using the equity method of accounting.

Also during 2016, the Company acquired certain assets of Keedak Limited, an oilfield chemical distributor in Nigeria, which became part of the Company's Global Energy segment.

2015 Activity

In June 2015, the Company acquired Jianghai Environmental Protection Co. Ltd ("Jianghai"), an industrial water treatment Company headquartered in Changzhou, China. The purchase price of the acquired business was approximately $190 million. Significant assets acquired include customer relationships, trademarks and other technology, with goodwill calculated as the excess of consideration transferred over the fair value of identifiable net assets acquired. With pre-acquisition annual sales of approximately $90 million, the acquired business became part of the Company's Global Industrial reportable segment during the third quarter of 2015. Purchase price allocation adjustments were finalized in 2016, the impact of which was not material.

In November 2015, the Company completed the acquisition of the U.S. operations of Charlotte, N.C. - based Swisher Hygiene Inc. ("Swisher") for approximately $40 million. Swisher provides hygiene and sanitizing solutions for the foodservice, hospitality, retail and healthcare markets. Sales in 2014 for the operations included in the agreement were approximately $176 million. The acquired business became part of the Company's Global Institutional reportable segment in the fourth quarter of 2015. Purchase price allocation adjustments were finalized in 2016, the impact of which was not material.

In November 2015, the Company acquired Ultra Fab Industries Ltd ("Ultrafab") for approximately $115 million. Based in Calgary, Canada, Ultrafab manufactures customized solutions and specialized chemical injection systems for the oil and gas industry. With pre-acquisition sales of approximately $35 million, the acquired business became part of the Company's Global Energy reportable segment during the fourth quarter of 2015. Purchase price allocation adjustments were finalized in 2016, the impact of which was not material.

Also during 2015, the Company acquired Aseptix Health Sciences NV, Commercial Pest Control Pty Lt and Clariant AG, which became part of the Company's Global Institutional, Other and Global Industrial segments, respectively.

2014 Activity

In December 2013, subsequent to the Company's fiscal year end for international operations, the Company completed the acquisition of AkzoNobel's Purate business ("Purate"). Headquartered in Sweden, Purate specializes in global antimicrobial water treatment. Pre-acquisition annual sales of the business were approximately $23 million. The acquired business became part of the Company's Global Industrial reportable segment during the first quarter of 2014.

In July 2014, the Company acquired the chemical division of AKJ Industries, a leading provider of chemical solutions in the coal industry in the U.S. Pre-acquisition annual sales of the business were approximately $21 million. The business became part of the Company's Global Industrial reportable segment during the third quarter of 2014.

Also in July 2014, the Company obtained control of Emochem, a joint venture in the United Arab Emirates through an amendment in the related shareholder agreements. This amendment resulted in the Company consolidating the entity and removing the related equity method investment. The transaction was not significant to the Company's operations. As discussed in Note 3, the Company recognized a $5.0 million gain during 2014 as a result of this transaction.

In November 2014, the Company acquired the dairy hygiene chemical businesses of EXL Laboratories, LLC and Hyprod Canada, providers of cleaning and sanitizing products for use on dairy farms in the U.S. and Canada. Pre-acquisition annual sales of the businesses were approximately $25 million. The business became part of the Company's Global Industrial reportable segment during the fourth quarter of 2014.

Also during 2014, the Company acquired AK Kraus & Hiller Schädlingsbekämpfung, which became part of the Company's Other segment, certain assets from Oksa Kimya Sanayii and remaining interest in joint ventures in South Africa and Indonesia.

Dispositions

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 after tax), recorded in special (gains) and charges. The business was part of the Company's Global Industrial segment.

In April 2014, the Company sold a business in Italy that was part of its Global Institutional segment. In November 2014, the Company sold a business in New Zealand that was part of its Other segment.

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

5. BALANCE SHEET INFORMATION

(millions)	December 31 2016	December 31 2015
Accounts receivable, net		
Accounts receivable	**$ 2,408.8**	$ 2,465.5
Allowance for doubtful accounts	**(67.6)**	(75.3)
Total	**$ 2,341.2**	$ 2,390.2
Inventories		
Finished goods	**$ 860.0**	$ 886.5
Raw materials and parts	**408.4**	440.9
Inventories at FIFO cost	**1,268.4**	1,327.4
FIFO cost to LIFO cost difference	**51.0**	60.8
Total	**$ 1,319.4**	$ 1,388.2
Other current assets		
Prepaid assets	**$ 98.3**	$ 94.6
Taxes receivable	**105.0**	137.6
Derivative assets	**46.3**	58.7
Other	**41.8**	35.4
Total	**$ 291.4**	$ 326.3
Property, plant and equipment, net		
Land	**$ 211.0**	$ 223.7
Buildings and leasehold improvements	**1,121.2**	996.0
Machinery and equipment	**2,035.8**	1,896.7
Merchandising and customer equipment	**2,199.4**	1,988.1
Capitalized software	**531.1**	479.9
Construction in progress	**344.1**	371.1
	6,442.6	5,955.5
Accumulated depreciation	**(3,077.6)**	(2,727.2)
Total	**$ 3,365.0**	$ 3,228.3
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	**$ 3,206.1**	$ 3,232.3
Trademarks	**303.3**	303.6
Patents	**446.5**	433.4
Other technology	**210.5**	213.5
	4,166.4	4,182.8
Accumulated amortization		
Customer relationships	**(1,148.2)**	(945.1)
Trademarks	**(125.2)**	(104.7)
Patents	**(157.3)**	(129.0)
Other technology	**(147.9)**	(124.8)
	(1,578.6)	(1,303.6)
Net intangible assets subject to amortization	**2,587.8**	2,879.2
Total	**$ 3,817.8**	$ 4,109.2
Other assets		
Deferred income taxes	**$ 92.3**	$ 58.3
Pension	**27.2**	28.0
Derivative assets	**21.5**	42.7
Restricted cash	**53.0**	-
Other	**291.0**	236.9
Total	**$ 485.0**	$ 365.9

(millions)	December 31 2016	December 31 2015
Other current liabilities		
Discounts and rebates	$ 275.2	$ 270.5
Dividends payable	108.0	103.6
Interest payable	37.3	24.2
Taxes payable, other than income	103.7	110.5
Derivative liabilities	24.6	31.5
Restructuring	30.5	73.9
Other	311.9	334.1
Total	$ 891.2	$ 948.3
Accumulated other comprehensive loss		
Unrealized gain (loss) on derivative financial instruments, net of tax	$ (8.5)	$ 9.0
Unrecognized pension and postretirement benefit expense, net of tax	(511.4)	(486.9)
Cumulative translation, net of tax	(1,193.0)	(945.4)
Total	$ (1,712.9)	$ (1,423.3)

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, 2016 and 2015:

	2016		2015	
(millions, except interest rates)	Carrying Value	Average Interest Rate	Carrying Value	Average Interest Rate
Short-term debt				
Commercial paper	$ -	- %	$ 605.0	0.70 %
Notes payable	29.9	2.92 %	30.9	3.33 %
Long-term debt, current maturities	511.4		1,569.4	
Total	$ 541.3		$ 2,205.3	

Line of Credit

As of December 2016, the Company had in place a $2.0 billion multi-year credit facility which expires in December 2019. 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, 2016 and 2015.

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. During the third quarter of 2016, the Company amended its existing $200.0 million European commercial paper program by, among other things, increasing the aggregate amount of the euro commercial paper notes that may be issued from $200.0 million to $2.0 billion. The maximum aggregate amount of commercial paper that may be issued by the Company under its U.S. commercial paper program and its euro commercial paper program may not exceed $2.0 billion.

As shown in the previous table, the Company had no commercial paper outstanding under its U.S. program as of December 31, 2016 and $605.0 million outstanding as of December 31, 2015. The Company had no commercial paper outstanding under its European program as of either December 31, 2016 or 2015.

As of December 31, 2016, 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, 2016 and 2015:

(millions)	Maturity by Year	2016 Carrying Value	2016 Average Interest Rate	2016 Effective Interest Rate	2015 Carrying Value	2015 Average Interest Rate	2015 Effective Interest Rate
Long-term debt							
Description / 2016 Principal Amount							
Term loan ($0)	2016	$ -	- %	- %	$ 125.0	1.40 %	1.40 %
Series B private placement senior notes (€0)	2016	-	- %	- %	184.9	4.59 %	4.73 %
Five year 2011 senior notes ($0)	2016	-	- %	- %	1,247.3	3.00 %	3.08 %
Five year 2012 senior notes ($500 million)	2017	498.9	1.45 %	1.22 %	497.9	1.45 %	0.82 %
Three year 2015 senior notes ($300 million)	2018	298.9	1.55 %	1.43 %	297.8	1.55 %	0.98 %
Series A private placement senior notes ($250 million)	2018	248.9	3.69 %	4.65 %	248.6	3.69 %	4.32 %
Three year 2016 senior notes ($400 million)	2019	395.9	2.00 %	1.78 %	-	- %	- %
Five year 2015 senior notes ($300 million)	2020	298.6	2.25 %	2.79 %	298.1	2.25 %	2.30 %
Ten year 2011 senior notes ($1.25 billion)	2021	1,244.8	4.35 %	4.43 %	1,243.7	4.35 %	4.43 %
Series B private placement senior notes ($250 million)	2023	249.2	4.32 %	4.36 %	249.1	4.32 %	4.36 %
Seven year 2016 senior notes ($400 million)	2023	397.0	3.25 %	3.49 %	-	- %	- %
Seven year 2016 senior notes (€575 million)	2024	608.4	1.00 %	1.20 %	-	- %	- %
Ten year 2015 senior notes (€575 million)	2025	604.3	2.63 %	2.88 %	601.8	2.63 %	2.99 %
Ten year 2016 senior notes ($750 million)	2026	742.1	2.70 %	2.94 %	-	- %	- %
Thirty year 2011 senior notes ($750 million)	2041	738.7	5.50 %	5.56 %	738.3	5.50 %	5.56 %
Thirty year 2016 senior notes ($250 million)	2046	245.9	3.70 %	3.75 %	-	- %	- %
Capital lease obligations		5.2			5.6		
Other		80.3			91.5		
Total debt		6,657.1			5,829.6		
Long-term debt, current maturities		(511.4)			(1,569.4)		
Total long-term debt		$ 6,145.7			$ 4,260.2		

Term Loans

In November 2012, the Company entered into a $900 million term loan credit agreement with various banks. In April 2013, in connection with the close of the Champion transaction, the Company initiated term loan borrowings of $900 million. Under the agreement, the term loan bore interest at a floating base rate plus a credit rating based margin. The term loan could have been repaid in part or in full at any time without penalty, but in any event was required to be repaid in full by April 2016. The Company repaid $275 million, $400 million and $100 million of term loan borrowings during 2015, 2014 and 2013, respectively. In January 2016, the Company repaid the remaining $125 million term loan balance.

Public Notes

In December 2016, the Company issued a €575 million aggregate principal seven year fixed rate note with a coupon rate of 1.00% ($608 million as of December 31, 2016). 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.

In July 2015, the Company issued a €575 million aggregate principal ten year fixed rate note with a coupon rate of 2.625% ($604 million as of December 31, 2016). The proceeds were used to repay a portion of the Company's outstanding commercial paper.

In January 2015, the Company issued $600 million of debt securities consisting of a $300 million aggregate principal three year fixed rate note with a coupon rate of 1.55% and a $300 million aggregate principal five year fixed rate note with a coupon rate of 2.25%. The proceeds were used to repay a portion of the Company's outstanding commercial paper and for general corporate purposes.

The series of notes issued by the Company in December, October and January 2016, July and January 2015, December 2012 and December 2011, pursuant to public debt offerings (the "Public 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 Public Notes below investment grade rating, within a specified time period, the Company will be required to offer to repurchase the Public 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 are senior unsecured and unsubordinated obligations of the Company and rank equally with all other senior and unsubordinated indebtedness of the Company.

Private Notes

In July 2006, the Company entered into a Note Purchase Agreement to issue a €175 million aggregate principal ten year private placement fixed rate note with a coupon rate of 4.585%. The notes were repaid in December 2016.

The series of notes issued by the Company in November 2011 pursuant to private debt offerings (the “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 will 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 will 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 assumed debt which has been reduced by payment activity, is reflected within the "Other" line of the table above. The assumption of debt and the majority of the property, plant and equipment addition represented non-cash financing and investing activities, respectively.

Covenants and Future Maturities

The Company is in compliance with all covenants under the Company’s outstanding indebtedness at December 31, 2016.

As of December 31, 2016, the aggregate annual maturities of long-term debt for the next five years were:

(millions)	
2017	$ 511
2018	560
2019	408
2020	311
2021	1,257

Net Interest Expense

Interest expense and interest income incurred during 2016, 2015 and 2014 were as follows:

(millions)	**2016**	2015	2014
Interest expense	**$ 285.4**	$ 253.7	$ 268.0
Interest income	**(20.8)**	(10.1)	(11.4)
Interest expense, net	**$ 264.6**	$ 243.6	$ 256.6

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.

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:

	2016			
December 31, (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**	**-**

	2015			
December 31, (millions)	Carrying Amount	Fair Value Measurements		
		Level 1	Level 2	Level 3
Assets				
Foreign currency forward contracts	111.2	-	111.2	-
Contingent consideration	0.3	-	-	0.3
Liabilities				
Foreign currency forward contracts	35.9	-	35.9	-
Interest rate swap agreements	5.4	-	5.4	-
Contingent consideration	15.9	-	-	15.9

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.

Changes in the fair value of contingent consideration obligations during 2016 and 2015 were as follows:

(millions)	**2016**	2015
Contingent consideration at beginning of year	**$ 15.6**	$ 1.3
Amount recognized at transaction date	**-**	16.0
Losses (gains) recognized in earnings	**(2.4)**	(0.2)
Settlements	**(12.6)**	(1.0)
Foreign currency translation	**(0.6)**	(0.5)
Contingent consideration at end of year	**$ -**	$ 15.6

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:

December 31, (millions)	2016		2015	
	Carrying Amount	Fair Value	Carrying Amount	Fair Value
Long-term debt, including current maturities	$ 6,657.1	$ 6,963.9	$ 5,829.6	$ 6,113.6

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 non-current assets and other current liabilities on the Consolidated Balance Sheet.

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

	Asset Derivatives		Liability Derivatives	
(millions)	2016	2015	2016	2015
Derivatives designated as hedging instruments				
Foreign currency forward contracts	$ 73.4	$ 70.2	$ 19.8	$ 3.2
Interest rate swap agreements	-	-	3.5	5.4
Derivatives not designated as hedging instruments				
Foreign currency forward contracts	20.0	41.0	26.9	32.7
Gross value of derivatives	93.4	111.2	50.2	41.3
Gross amounts offset in the Consolidated Balance Sheet	(25.7)	(9.8)	(25.7)	(9.8)
Net value of derivatives	$ 67.7	$ 101.4	$ 24.5	$ 31.5

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

	Notional Values	
(millions)	2016	2015
Foreign currency forward contracts	$ 4,317	$ 4,029
Interest rate agreements	$ 1,450	$ 1,675
Net investment hedge contracts (a)	€ 0	€ 25

(a) The net investment hedge contracts exclude the Company's euro denominated debt.

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. All cash flow hedged transactions are forecasted to occur within the next two years.

The Company occasionally enters into forward starting interest rate swap or treasury lock 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 both its U.S. public debt issuances in January and October 2016, as discussed in Note 6.

During 2014, the Company entered into and subsequently closed a series of forward starting interest rate swap agreements in connection with both its U.S. public debt issuance completed in January 2015 and its euro public debt issuance completed in July 2015. During 2011, the Company entered into and subsequently closed a series of forward starting interest rate swap agreements in connection with the issuance of its private placement debt. During 2006, the Company entered into and subsequently closed two forward starting interest rate swap agreements related to the issuance of its senior euro notes.

The agreements noted above were designated and effective as a cash flow hedge of the expected interest payments related to the anticipated future debt issuance. Amounts recorded in AOCI for the respective transactions above are recognized as part of 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)			2016	2015	2014
Unrealized gain (loss) recognized into AOCI					
Foreign currency forward contracts	AOCI (equity)	AOCI (equity)	$ 7.0	$ 68.4	$ 26.7
Interest rate swap agreements	AOCI (equity)	AOCI (equity)	(9.3)	3.6	(22.1)
	Total	Total	(2.3)	72.0	4.6
(millions)					
Gain (loss) recognized in income					
Foreign currency forward contracts	Cost of sales	Cost of sales	23.0	30.9	6.1
	SG&A	SG&A	(0.1)	24.7	1.5
	Interest expense, net	Interest expense, net	5.8	2.9	-
	Subtotal	Total	28.7	58.5	7.6
Interest rate swap agreements	Interest expense, net	Interest expense, net	(6.6)	(5.5)	(4.1)
	Total	Total	$ 22.1	$ 53.0	$ 3.5

Gains and losses recognized in income related to the ineffective portion of the Company's cash flow hedges were insignificant during 2016, 2015 and 2014.

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 a portion of the Company's $1.25 billion 3.00% debt expired in December 2016 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)		2016	2015	2014
Gain (loss) on derivative recognized income				
Interest rate swap	Interest expense, net	**$ (1.4)**	$ 0.0	$ (2.1)
Gain (loss) on hedged item recognized income				
Interest rate swap	Interest expense, net	**$ 1.4**	$ (0.0)	$ 2.1

Net Investment Hedges

The Company designates its outstanding €1,150 million (total of $1,214 million as of year-end 2016) senior notes and related accrued interest as a hedge of existing foreign currency exposures related to net investments the Company has in certain euro denominated functional currency subsidiaries. The series B euro denominated private placement notes that were also designated as a hedge of existing foreign currency exposures matured in December 2016.

The revaluation gains and losses on the euro notes and of the forward contracts, 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)	2016	2015	2014
Revaluation gains (losses), net of tax	**$ (2.5)**	$ 101.3	$ 34.7

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)		2016	2015	2014
Gain (loss) recognized in income				
Foreign currency forward contracts	SG&A	**$ (6.0)**	$ 15.9	$ 8.6
	Interest expense, net	**(8.4)**	(8.6)	(9.0)
	Total	**$ (14.4)**	$ 7.3	$ (0.4)

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

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)	2016	2015	2014
Derivative and Hedging Instruments			
Unrealized gains (losses) on derivative & hedging instruments			
Amount recognized in AOCI	$ (2.3)	$ 72.0	$ 4.6
(Gains) losses reclassified from AOCI into income			
Cost of sales	(23.0)	(30.9)	(6.1)
SG&A	0.1	(24.7)	(1.5)
Interest expense, net	0.8	2.6	4.1
	(22.1)	(53.0)	(3.5)
Other activity	(0.2)	1.7	-
Tax impact	7.1	(9.0)	2.8
Net of tax	$ (17.5)	$ 11.7	$ 3.9
Pension and Postretirement Benefits			
Amount recognized in AOCI			
Current period net actuarial income (loss) and prior service costs	$ (136.0)	$ 2.8	$ (517.7)
Amount reclassified from AOCI into income			
Amortization of net actuarial loss and prior service costs and benefits adjustments	32.2	52.0	17.5
Reclassification associated with Venezuelan entities	-	3.5	-
Postretirement benefits changes	54.0	-	-
	(49.8)	58.3	(500.2)
Tax impact	9.3	(20.3)	156.9
Net of tax	$ (40.5)	$ 38.0	$ (343.3)

(millions)	2016	2015	2014
Derivative gains reclassified from AOCI into income, net of tax	$ (16.9)	$ (40.6)	$ (3.0)
Pension and postretirement benefits net actuarial losses and prior services costs reclassified from AOCI into income, net of tax	$ 20.2	$ 35.8	$ 12.1

10. SHAREHOLDERS' EQUITY

Authorized common stock, par value $1.00 per share, was 800 million shares at December 31, 2016, 2015 and 2014. Treasury stock is stated at cost. Dividends declared per share of common stock were $1.420 for 2016, $1.340 for 2015 and $1.155 for 2014.

The Company has 15 million shares, without par value, of authorized but unissued and undesignated preferred stock. The Company's former shareholder rights agreement was amended in December 2012 and the rights agreement was terminated as of December 31, 2012. Prior to termination of the rights agreement, 0.4 million shares of preferred stock were designated as Series A Junior Participating Preferred Stock and were reserved for issuance in connection with the rights agreement, with the remaining 14.6 million shares of preferred stock being undesignated. Following termination of the rights agreement, a Certificate of Elimination of the Series A Junior Participating Preferred Stock was filed on January 2, 2013 with the Delaware Secretary of State to restore the 0.4 million shares designated as Series A Junior Participating Preferred Stock to the status of undesignated preferred stock.

Share Repurchase Authorization

The Company has a share repurchase program and generally repurchases shares on the open market to offset the dilutive effect of its equity compensation plans, with repurchases above that level used to manage the Company's capital structure and efficiently return capital to shareholders.

In August 2011, the Finance Committee of the Company's Board of Directors, via delegation by the Company's Board of Directors, authorized the repurchase of 10 million common shares, including shares to be repurchased under Rule 10b5-1, which was contingent upon completion of the merger with Nalco. This authorization was completed during the first quarter of 2016.

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. In February 2015, under the existing repurchase authorization, the Company announced a $1.0 billion share repurchase program, which was completed during the second quarter of 2016.

As of December 31, 2016, 16,772,526 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 2015, the Company entered into an ASR agreement with a financial institution to repurchase $300 million of its common stock and received 2,066,293 shares of its common stock, which was approximately 80% 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 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.

The final per share purchase price and the total number of shares to be repurchased under both 2016 and 2015 ASR agreements generally were based on the volume-weighted average price of the Company's common stock during the term of the agreements. Upon final settlement of the two ASR agreements, under certain circumstances, the financial institutions were obligated to deliver additional shares to the Company or the Company was obligated to deliver additional shares of common stock or make a cash payment, at the Company's election, to the financial institutions.

In connection with the finalization of the ASR agreement in April 2015, the Company received an additional 555,511 shares of common stock. In connection with the finalization of the ASR agreement in May 2016, the Company received an additional 232,012 shares of common stock.

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

During their respective open periods in 2015 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, the impact of which was not material.

In February 2017, separate from the ASRs discussed above, the Company entered into an ASR agreement with a financial institution to repurchase $300 million of its common stock.

Share Repurchases

In accordance with its share repurchase program through open market or private purchases, including the ASR discussed above, the Company reacquired 6,126,033 shares, 6,267,699 shares and 3,547,334 shares of its common stock in 2016, 2015 and 2014, respectively.

The Company also reacquired 357,165, 398,704 and 489,854 shares withheld for taxes related to the exercise of stock options and the vesting of stock awards and units in 2016, 2015 and 2014, respectively.

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, 2016, 2015 and 2014 were 13,649,667, 15,888,937 and 17,999,689, 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 $86 million ($59 million net of tax benefit), $78 million ($54 million net of tax benefit) and $71 million ($49 million net of tax benefit) for 2016, 2015 and 2014, respectively. As of December 31, 2016, there was $137 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:

	2016		2015		2014	
	Number of Options	Exercise Price (a)	Number of Options	Exercise Price (a)	Number of Options	Exercise Price (a)
Outstanding, beginning of year	**12,378,372**	**$ 74.23**	13,169,776	$ 63.88	13,926,256	$ 55.66
Granted	**1,679,941**	**117.60**	1,686,816	118.99	1,645,937	107.63
Exercised	**(2,061,553)**	**50.33**	(2,316,025)	46.22	(2,316,918)	44.79
Canceled	**(86,259)**	**111.08**	(162,195)	99.67	(85,499)	83.81
Outstanding, end of year	**11,910,501**	**$ 84.22**	12,378,372	$ 74.23	13,169,776	$ 63.88
Exercisable, end of year	**8,720,943**	**$ 72.35**	9,248,880	$ 61.18	9,820,826	$ 52.21
Vested and expected to vest, end of year	**11,688,758**	**$ 83.63**				

(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 2016, 2015 and 2014 was $140 million, $160 million and $150 million, respectively.

The total aggregate intrinsic value of options outstanding as of December 31, 2016 was $398 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, 2016 was $395 million, with a corresponding weighted-average remaining contractual life of 5.3 years. The total aggregate intrinsic value of options vested and expected to vest as of December 31, 2016 was $397 million, with a corresponding weighted-average remaining contractual life of 6.3 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:

	2016	2015	2014
Weighted-average grant-date fair value of options granted at market prices	**$ 25.59**	$ 25.71	$ 23.18
Assumptions			
Risk-free rate of return	**2.0 %**	1.8 %	1.8 %
Expected life	**6 years**	6 years	6 years
Expected volatility	**22.9 %**	22.9 %	22.9 %
Expected dividend yield	**1.3 %**	1.2 %	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, 2013	1,750,269	$ 64.49	622,021	$ 64.04
Granted	373,337	103.10	109,665	102.62
Vested / Earned	(503,324)	47.98	(306,830)	55.83
Canceled	(27,048)	74.09	(23,785)	73.01
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**

(a) Represents weighted average price per share.

12. INCOME TAXES

Income before income taxes consisted of:

(millions)	2016	2015	2014
United States	**$ 656.1**	$ 733.0	$ 937.7
International	**994.3**	584.7	760.7
Total	**$ 1,650.4**	$ 1,317.7	$ 1,698.4

The provision for income taxes consisted of:

(millions)	2016	2015	2014
Federal and state	**$ 224.2**	$ 241.4	$ 344.3
International	**269.7**	303.6	253.4
Total current	**493.9**	545.0	597.7
Federal and state	**(49.2)**	(185.4)	(67.7)
International	**(41.4)**	(59.1)	(53.8)
Total deferred	**(90.6)**	(244.5)	(121.5)
Provision for income taxes	**$ 403.3**	$ 300.5	$ 476.2

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

December 31 (millions)	2016	2015
Deferred tax assets		
Other accrued liabilities	**$ 187.4**	$ 172.7
Loss carryforwards	**54.8**	62.4
Share-based compensation	**83.1**	75.2
Pension and other comprehensive income	**264.7**	309.0
Foreign tax credits	**21.8**	31.3
Other, net	**111.1**	78.5
Valuation allowance	**(19.9)**	(31.8)
Total	**703.0**	697.3
Deferred tax liabilities		
Property, plant and equipment basis differences	**(275.4)**	(267.5)
Intangible assets	**(1,151.4)**	(1,227.7)
Unremitted foreign earnings	**-**	(25.8)
Other, net	**(154.1)**	(158.4)
Total	**(1,580.9)**	(1,679.4)
Net deferred tax liabilities balance	**$ (877.9)**	$ (982.1)

As of December 31, 2016 the Company has tax effected federal, state and international net operating loss carryforwards of $0.7 million, $12.1 million and $42.0 million, respectively, which will be available to offset future taxable income. The state loss carryforwards expire from 2017 to 2036. For the international loss carryforwards, $19.7 million expire from 2017 to 2036 and $22.3 million have no expiration.

The Company had valuation allowances on certain deferred tax assets of $19.9 million and $31.8 million at December 31, 2016 and 2015, respectively. During 2016, the Company determined sufficient positive income trends existed to conclude it was more likely than not it would be able to realize the benefits of the net operating losses and other deferred tax assets within certain underlying foreign entities for which valuation allowances had been recorded, thus resulting in valuation allowance releases of $11.5 million. The reduction in valuation allowance from year end 2015 to year end 2016 was also driven by current year utilization and foreign currency translation.

The Company's U.S. foreign tax credit carryforward of $21.8 million has a ten-year carryforward period and will expire between 2019 and 2025 if not utilized.

The Company obtains tax benefits from tax holidays in three foreign jurisdictions, the Dominican Republic, China 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. In addition, one of the Company's legal entities in China is 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% so long as the Company's manufacturing facilities in China continue to maintain their High and New Technology Enterprise ("HNTE") status. Finally, in Singapore, the Company was awarded the Development and Expansion Incentive under the International Headquarters program. This provides for a preferential 10% tax rate on certain headquarter income and is valid until February 2018. The tax reduction as the result of the tax holidays for 2016 was $6.4 million, or approximately $0.02 per diluted share. The impact of the tax holiday was similar during 2015 and 2014.

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

	2016	2015	2014
Statutory U.S. rate	**35.0 %**	35.0 %	35.0 %
State income taxes, net of federal benefit	**0.9**	0.4	1.6
Foreign operations	**(8.0)**	(8.1)	(6.1)
Domestic manufacturing deduction	**(2.0)**	(2.7)	(2.0)
R&D credit	**(1.1)**	(1.0)	(0.7)
Change in valuation allowance	**(0.7)**	(1.7)	(0.1)
Audit settlements and refunds	**(0.2)**	(0.7)	0.2
Venezuela charges	**-**	4.5	-
Worthless stock deduction	**0.4**	(3.0)	-
Other, net	**0.1**	0.1	0.1
Effective income tax rate	**24.4 %**	22.8 %	28.0 %

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.

U.S. deferred income taxes are not provided on certain other unremitted foreign earnings that are considered permanently reinvested which were approximately $2.1 billion and $1.8 billion as of December 31, 2016 and 2015, respectively. These earnings are considered to be reinvested indefinitely or available for distribution with foreign tax credits to offset the amount of applicable income tax and foreign withholding taxes that may be payable on remittance. It is impractical due to the complexities associated with its hypothetical calculation to determine the amount of incremental taxes that might arise if all undistributed earnings were distributed.

The Company files income tax returns in the U.S. federal jurisdiction and various U.S. state and international jurisdictions. With few exceptions, the Company is no longer subject to state and foreign income tax examinations by tax authorities for years before 2012. The IRS has completed examinations of the Company's U.S. federal income tax returns (Ecolab and Nalco) through 2012. The IRS has completed examinations of the Company's U.S. federal income tax returns (Champion) through 2011 and tax year 2012 is closed by statute of limitations. The Company's U.S. federal income tax return for the years 2013 and 2014 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.

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.

During 2014, the Company recognized net expenses related to discrete tax items of $13.2 million. The net expenses were driven primarily by an update to non-current tax liabilities for certain global tax audits, an adjustment related to the re-characterization of intercompany payments between its U.S. and foreign affiliates, the remeasurement of certain deferred tax assets and liabilities resulting from changes in its deferred state tax rate, recognizing adjustments from filing its 2013 U.S. federal and state tax returns, net changes of valuation allowances based on the realizability of foreign deferred tax assets and the impact from other foreign country audit settlements.

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

(millions)	**2016**	2015	2014
Balance at beginning of year	**$ 74.6**	$ 78.7	$ 98.7
Additions based on tax positions related to the current year	**8.8**	5.8	5.3
Additions for tax positions of prior years	**2.1**	0.9	5.2
Reductions for tax positions of prior years	**(1.0)**	(8.8)	(17.8)
Reductions for tax positions due to statute of limitations	**(5.5)**	(1.6)	(0.2)
Settlements	**(2.0)**	(4.2)	(9.0)
Assumed in connection with acquisitions	**-**	8.0	-
Foreign currency translation	**(1.1)**	(4.2)	(3.5)
Balance at end of year	**$ 75.9**	$ 74.6	$ 78.7

The total amount of unrecognized tax benefits, if recognized would have affected the effective tax rate by $57.5 million as of December 31, 2016, $59.2 million as of December 31, 2015 and $64.0 million as of December 31, 2014.

The Company recognizes interest and penalties related to unrecognized tax benefits in its provision for income taxes. During 2016 and 2015 the Company released $2.9 million and $1.4 million related to interest and penalties, respectively and during 2014 it accrued $6.6 million related to interest and penalties. The Company had $10.2 million and $13.1 million of accrued interest, including minor amounts for penalties, at December 31, 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 $221 million in both 2016 and 2015 and $237 million in 2014. As of December 31, 2016, identifiable future minimum payments with non-cancelable terms in excess of one year were:

(millions)	
2017	$ 102
2018	83
2019	70
2020	56
2021	49
Thereafter	71
Total	$ 431

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 $58 million in 2017. 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 $189 million in 2016, $191 million in 2015 and $197 million in 2014. The Company did not participate in any material customer sponsored research during 2016, 2015 or 2014.

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 40 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 Wage Hour Claims

The Company is a defendant in several pending wage hour lawsuits claiming violations of the FLSA or a similar state law. In Martino v. Ecolab, United States District Court for the Northern District of California, case no. 5:14-cv-04358-SG, an action under California state law, the Court has certified a class of California Institutional Territory Managers alleging violation of state wage and hour laws. This matter has been settled. The Company has established an accrual to fund the settlement, which is not material to its results of operations or financial position. The Company is a defendant in other wage hour lawsuits brought by Institutional Route Sales Managers seeking class certification of claims for overtime and other relief under federal or state laws. None of these matters are considered to be material to the Company's results of operations or financial position.

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. After review and testing of a number of dispersants, on September 30, 2010, and on August 2, 2010, the EPA released toxicity data for eight oil dispersants.

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. Since the spill occurred, the EPA and other federal agencies have closely monitored conditions in areas where dispersant was applied. Nalco Company has encouraged ongoing monitoring and review of COREXIT and other dispersants and has cooperated fully with the governmental review and approval process. However, 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").

Putative Class Action Litigation

Nalco Company was named, along with other unaffiliated defendants, in six putative class action complaints related to the Deepwater Horizon oil spill: Adams v. Louisiana, et al., Case No. 11-cv-01051 (E.D. La.); Elrod, et al. v. BP Exploration & Production Inc., et al., 12-cv-00981 (E.D. La.); Harris, et al. v. BP, plc, et al., Case No. 2:10-cv-02078-CJBSS (E.D. La.); Irelan v. BP Products, Inc., et al., Case No. 11-cv-00881 (E.D. La.); Petitjean, et al. v. BP, plc, et al., Case No. 3:10-cv-00316-RS-EMT (N.D. Fla.); and, Wright, et al. v. BP, plc, et al., Case No. 1:10-cv-00397-B (S.D. Ala.). The cases were filed on behalf of various potential classes of persons who live and work in or derive income from the effected Coastal region. Each of the actions contains substantially similar allegations, generally alleging, among other things, negligence relating to the use of our COREXIT dispersant in connection with the Deepwater Horizon oil spill. The plaintiffs in these putative class action lawsuits are generally seeking awards of unspecified compensatory and punitive damages, and attorneys' fees and costs. These cases have been consolidated in MDL 2179.

Other Related Claims Pending in MDL 2179

Nalco Company was also named, along with other unaffiliated defendants, in 23 complaints filed by individuals: Alexander, et al. v. BP Exploration & Production, et al., Case No. 11-cv-00951 (E.D. La.); Best v. British Petroleum plc, et al., Case No. 11-cv-00772 (E.D. La.); Black v. BP Exploration & Production, Inc., et al. Case No. 2:11-cv- 867, (E.D. La.); Brooks v. Tidewater Marine LLC, et al., Case No. 11-cv- 00049 (S.D. Tex.); Capt Ander, Inc. v. BP, plc, et al., Case No. 4:10-cv-00364-RH-WCS (N.D. Fla.); Coco v. BP Products North America, Inc., et al. (E.D. La.); Danos, et al. v. BP Exploration et al., Case No. 00060449 (25th Judicial Court, Parish of Plaquemines, Louisiana); Doom v. BP Exploration & Production, et al. , Case No. 12-cv-2048 (E.D. La.); Duong, et al., v. BP America Production Company, et al., Case No. 13-cv-00605 (E.D. La.); Esponge v. BP, P.L.C., et al., Case No. 0166367 (32nd Judicial District Court, Parish of Terrebonne, Louisiana); Ezell v. BP, plc, et al., Case No. 2:10-cv-01920-KDE-JCW (E.D. La.); Fitzgerald v. BP Exploration, et al., Case No. 13-cv-00650 (E.D. La.); Hill v. BP, plc, et al., Case No. 1:10-cv-00471-CG-N (S.D. Ala.); Hogan v. British Petroleum Exploration & Production, Inc., et al., Case No. 2012-22995 (District Court, Harris County, Texas); Hudley v. BP, plc, et al., Case No. 10-cv-00532-N (S.D. Ala.); In re of Jambon Supplier II, L.L.C., et al., Case No. 12-426 (E.D. La.); Kolian v. BP Exploration & Production, et al. , Case No. 12-cv-2338 (E.D. La.); Monroe v. BP, plc, et al., Case No. 1:10-cv-00472-M (S.D. Ala.); Pearson v. BP Exploration & Production, Inc., Case No. 2:11-cv-863, (E.D. La.); Shimer v. BP Exploration and Production, et al, Case No. 2:13-cv-4755 (E.D. La.); Top Water Charters, LLC v. BP, P.L.C., et al., No. 0165708 (32nd Judicial District Court, Parish of Terrebonne, Louisiana); Toups, et al. v Nalco Company, et al., Case No. 59-121 (25th Judicial District Court, Parish of Plaquemines, Louisiana); and, Trehern v. BP, plc, et al., Case No. 1:10-cv-00432-HSO-JMR (S.D. Miss.). The cases were filed on behalf of individuals and entities that own property, live, and/or work in or derive income from the effected Coastal region. Each of the actions contains substantially similar allegations, generally alleging, among other things, negligence relating to the use of our COREXIT dispersant in connection with 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.

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 remain pending against other defendants, the Court's decision is 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.

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 explosion, oil spill and/or spill response, it is entitled to contribution or indemnity from the Cross Claimants.

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 Energy Services, LP, Nalco Holding Company, Nalco Finance Holdings LLC, Nalco Finance Holdings Inc., Nalco Holdings LLC and Nalco Company.

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: Seng Lim v. BP, Case No. 2:16-cv-03950 (E.D. La.); Dai Nguyen v. BP, Case No. 2:16-cv-03952 (E.D. La.); Thanh Duong v. BP, Case No. 2:16-cv-03953 (E.D. La.); Nghia Nguyen v. BP, Case No. 2:16-cv-03954 (E.D. La.); Loc Van Nguyen v. BP, Case No. 2:16-cv-03955 (E.D. La.); Hanh Phan v. BP, Case No. 2:16-cv-03956 (E.D. La.); Anh Ly v. BP, Case No. 2:16-cv-03957 (E.D. La.); Danny Tam Ly v. BP, Case No. 2:16-cv-04027 (E.D. La.); Terry v. BP, Case No. 2:16-cv-04137 (E.D. La.). 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.

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. However, 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 $125 million and $122 million at December 31, 2016 and 2015, 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:

(millions)	U.S. Pension (a) 2016	U.S. Pension (a) 2015	International Pension 2016	International Pension 2015	U.S. Postretirement Health Care 2016	U.S. Postretirement Health Care 2015
Accumulated Benefit Obligation, end of year	$ 2,147.1	$ 2,040.2	$ 1,239.8	$ 1,185.7	$ 173.5	$ 229.2
Projected Benefit Obligation						
Projected benefit obligation, beginning of year	$ 2,186.8	$ 2,252.7	$ 1,279.9	$ 1,424.9	$ 229.2	$ 240.4
Service cost	67.1	76.5	27.8	31.8	3.0	3.8
Interest	81.5	91.1	31.9	38.1	7.4	9.6
Participant contributions	-	-	3.3	3.4	8.0	8.7
Medicare subsidies received	-	-	-	-	0.8	1.1
Curtailments and settlements	(0.8)	(1.2)	(12.3)	(5.5)	-	-
Plan amendments	1.2	-	2.0	(5.3)	(62.2)	-
Actuarial loss (gain)	60.2	(126.0)	123.9	(13.5)	7.5	(13.4)
Assumed through acquisitions	-	-	6.7	-	-	-
Benefits paid	(128.1)	(106.3)	(35.5)	(37.5)	(20.2)	(21.0)
Reclassification associated with Venezuelan entities	-	-	-	(13.1)	-	-
Foreign currency translation	-	-	(92.1)	(143.4)	-	-
Projected benefit obligation, end of year	$ 2,267.9	$ 2,186.8	$ 1,335.6	$ 1,279.9	$ 173.5	$ 229.2
Plan Assets						
Fair value of plan assets, beginning of year	$ 1,770.7	$ 1,871.6	$ 813.5	$ 847.7	$ 11.3	$ 13.3
Actual returns on plan assets	152.3	0.4	89.2	32.9	0.8	0.1
Company contributions	156.0	6.2	39.4	41.2	16.4	17.5
Participant contributions	-	-	3.3	3.4	1.3	1.3
Acquisitions	-	-	2.6	-	-	-
Settlements	(0.8)	(1.2)	(8.3)	(5.5)	-	-
Benefits paid	(128.1)	(106.3)	(35.5)	(37.5)	(20.2)	(21.0)
Foreign currency translation	-	-	(82.3)	(68.7)	-	-
Fair value of plan assets, end of year	$ 1,950.1	$ 1,770.7	$ 821.9	$ 813.5	$ 9.6	$ 11.2
Funded Status, end of year	$ (317.8)	$ (416.1)	$ (513.7)	$ (466.4)	$ (163.9)	$ (218.0)
Amounts recognized in Consolidated Balance Sheet:						
Other assets	$ -	$ -	$ 27.2	$ 28.0	$ -	$ -
Other current liabilities	(6.8)	(12.1)	(20.3)	(16.9)	(2.7)	(7.3)
Postretirement healthcare and pension benefits	(311.0)	(404.0)	(520.6)	(477.5)	(161.2)	(210.7)
Net liability	$ (317.8)	$ (416.1)	$ (513.7)	$ (466.4)	$ (163.9)	$ (218.0)
Amounts recognized in Accumulated Other Comprehensive Loss (Income):						
Unrecognized net actuarial loss (gain)	$ 533.0	$ 512.8	$ 357.6	$ 310.1	$ (30.9)	$ (40.0)
Unrecognized net prior service benefits	(25.5)	(33.7)	(7.3)	(9.9)	(59.0)	0.1
Tax expense (benefit)	(199.2)	(188.4)	(89.4)	(77.1)	32.1	13.0
Accumulated other comprehensive loss (income), net of tax	$ 308.3	$ 290.7	$ 260.9	$ 223.1	$ (57.8)	$ (26.9)
Change in Accumulated Other Comprehensive Loss (Income):						
Amortization of net actuarial loss	$ (30.7)	$ (48.5)	$ (12.8)	$ (15.4)	$ 1.6	$ 6.2
Amortization of prior service costs (benefits)	6.9	6.9	0.8	0.4	4.3	0.1
Current period net actuarial loss (gain)	51.5	6.2	87.2	9.2	7.5	(12.6)
Current period prior service costs (benefits)	1.2	-	2.0	(5.6)	(13.4)	-
Settlement	(0.5)	(0.7)	(1.8)	(1.0)	-	-
Tax expense (benefit)	(10.8)	13.4	(12.3)	16.3	19.1	2.3
Postretirement benefits changes	-	-	(4.0)	-	(50.0)	-
Reclassification associated with Venezuelan entities	-	-	-	(3.5)	-	-
Foreign currency translation	-	-	(21.3)	(39.3)	-	-
Other comprehensive loss (income)	$ 17.6	$ (22.7)	$ 37.8	$ (38.9)	$ (30.9)	$ (4.0)

(a) Includes qualified and non-qualified plans

Estimated amounts in accumulated other comprehensive loss expected to be reclassified to net period cost during 2017 are as follows:

(millions)	U.S. Pension (a)	International Pension	U.S. Post-Retirement Health Care
Net actuarial loss (gain)	$ 28.7	$ 17.7	$ (4.8)
Net prior service costs (benefits)	(6.8)	(0.7)	(16.7)
Total	$ 21.9	$ 17.0	$ (21.5)

(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)	2016	2015
Aggregate projected benefit obligation	$ 3,257.6	$ 3,088.0
Accumulated benefit obligation	3,071.6	2,882.5
Fair value of plan assets	2,418.1	2,190.6

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)	2016	2015	2014	2016	2015	2014	2016	2015	2014
Service cost	$ 67.1	$ 76.5	$ 66.4	$ 27.8	$ 31.8	$ 32.2	$ 3.0	$ 3.8	$ 4.3
Interest cost on benefit obligation	81.5	91.1	90.0	31.9	38.1	49.8	7.4	9.6	10.8
Expected return on plan assets	(143.6)	(132.6)	(128.4)	(52.5)	(55.6)	(54.6)	(0.7)	(0.9)	(1.0)
Recognition of net actuarial (gain) loss	30.7	48.5	23.7	12.8	15.4	7.0	(1.6)	(6.2)	(8.2)
Amortization of prior service cost (benefit)	(6.9)	(6.9)	(6.9)	(0.8)	(0.4)	0.4	(4.3)	(0.1)	(0.3)
Settlements/Curtailments	0.5	0.7	-	1.8	1.0	(1.3)	-	-	-
Total expense	$ 29.3	$ 77.3	$ 44.8	$ 21.0	$ 30.3	$ 33.5	$ 3.8	$ 6.2	$ 5.6

(a) Includes qualified and non-qualified plans

Plan Assumptions	U.S. Pension (a)			International Pension			U.S. Postretirement Health Care		
(percent)	2016	2015	2014	2016	2015	2014	2016	2015	2014
Weighted-average actuarial assumptions used to determine benefit obligations as of year end:									
Discount rate	4.27 %	4.51 %	4.14 %	2.33%	2.93 %	3.02 %	4.14 %	4.38 %	4.08 %
Projected salary increase	4.03	4.32	4.32	2.52	2.50	2.66			
Weighted-average actuarial assumptions used to determine net cost:									
Discount rate	4.51	4.14	4.92	2.68	2.78	4.45	4.38	4.08	4.77
Expected return on plan assets	7.75	7.75	7.75	6.71	6.80	6.90	7.75	7.75	7.75
Projected salary increase	4.32	4.32	4.32	2.75	2.83	3.58			

(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. For 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, 2016, the annual rates of increase in the per capita cost of covered health care were assumed to be 6.75% for pre-65 costs and 7.25% for post-65 costs. The rates are assumed to decrease each year until they reach 5% in 2023 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 the following effects:

	1-Percentage Point	
(millions)	Increase	Decrease
Effect on total of service and interest cost components	$ -	$ -
Effect on postretirement benefit obligation	0.7	(0.7)

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.

In 2016, the Company adopted the updated accounting guidance that removes the requirement to categorize all investments within the fair value hierarchy for which fair value is measured using net asset value per share ("NAV") as a practical expedient and requires the presentation of the carrying amount of investments measured using the NAV as a reconciling item between the total amount of investments categorized within the fair value hierarchy and total investments measured at fair value. Investments valued at NAV include hedge funds and private equity, valued based on the NAV of the underlying partnerships, whose investments are based at fair value. Investments at NAV also include real estate funds, valued based on inputs other than quoted prices that are observable for the securities. The fair value measurement tables presented below have been updated to follow the new guidance.

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, 2016			Fair Value as of December 31, 2015		
	Level 1	Level 2	Total	Level 1	Level 2	Total
Cash	**$ 6.3**		**$ 6.3**	$ 6.9		$ 6.9
Equity securities:						
Large cap equity	**696.0**		**696.0**	660.5		660.5
Small cap equity	**179.0**		**179.0**	184.2		184.2
International equity	**293.4**		**293.4**	247.4		247.4
Fixed income:						
Core fixed income	**351.5**		**351.5**	336.5		336.5
High-yield bonds	**107.6**		**107.6**	86.7		86.7
Emerging markets	**33.5**		**33.5**	27.1		27.1
Insurance company accounts	**-**	**$ 0.3**	**0.3**	-	$ 0.3	0.3
Total investments at fair value	**1,667.3**	**0.3**	**1,667.6**	1,549.3	0.3	1,549.6
Investments measured at NAV			**292.1**			232.3
Total	**$ 1,667.3**	**$ 0.3**	**$ 1,959.7**	$ 1,549.3	$ 0.3	$ 1,781.9

The Company had no level 3 assets as of December 31, 2016 or 2015.

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 (%)	**2016**	2015	**2016**	2015
Cash	**- %**	- %	**- %**	- %
Equity securities:				
Large cap equity	**34**	34	**36**	37
Small cap equity	**9**	9	**9**	10
International equity	**15**	15	**15**	14
Fixed income:				
Core fixed income	**18**	18	**18**	19
High-yield bonds	**5**	5	**5**	5
Emerging markets	**2**	2	**2**	2
Other:				
Real estate	**6**	6	**7**	5
Hedge funds	**5**	5	**3**	3
Private equity	**6**	6	**5**	5
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, 2016			Fair Value as of December 31, 2015		
	Level 1	Level 2	Total	Level 1	Level 2	Total
Cash	$ 5.5		$ 5.5	$ 3.1		$ 3.1
Equity securities:						
International equity	-	363.1	363.1		356.2	356.2
Fixed income:			-			
Corporate bonds	6.4	164.6	171.0	6.6	170.3	176.9
Government bonds	9.5	145.6	155.1	9.8	146.5	156.3
Insurance company accounts		114.0	114.0		106.1	106.1
Total investments at fair value	21.4	787.3	808.7	19.5	779.1	798.6
Investments measured at NAV			13.2			14.9
Total	$ 21.4	$ 787.3	$ 821.9	$ 19.5	$ 779.1	$ 813.5

The Company had no level 3 assets as of December 31, 2016 or 2015.

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 (%)	2016	2015
Cash	1 %	- %
Equity securities:		
International equity	44	44
Fixed income:		
Corporate bonds	21	22
Government bonds	19	19
Total fixed income	40	41
Other:		
Insurance contracts	14	13
Real estate	1	2
Total	100 %	100 %

Cash Flows

As of year-end 2016, 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	Medicare Subsidy Receipts
2017	$ 171	$ 1
2018	177	-
2019	187	-
2020	202	-
2021	214	-
2022 - 2026	1,158	-

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 April of 2016, the Company made a $150 million voluntary contribution to its non-contributory qualified U.S. pension plan. No voluntary contributions were made to the U.S. pension plan during 2015 and 2014. 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 $42 million in 2017.

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 $74 million and $72 million in 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 ten operating segments 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.

Eight of the Company's ten 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 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 ten operating segments are aggregated as follows:

Global Industrial

Includes the Water, Food & Beverage, Paper 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 and Equipment Care operating segments, which provide pest elimination and 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. Fixed currency amounts for both 2015 and 2014 also reflect all Venezuela bolivar operations, prior to the deconsolidation of the Company's Venezuelan operations, at a SIMADI rate of approximately 200 bolivares to 1 U.S. dollar.

Reportable Segment Information

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

	Net Sales			Operating Income (Loss)		
(millions)	**2016**	2015	2014	**2016**	2015	2014
Global Industrial	**$ 4,617.1**	$ 4,485.5	$ 4,261.9	**$ 703.0**	$ 626.4	$ 538.8
Global Institutional	**4,495.6**	4,210.9	3,982.8	**966.7**	876.6	772.6
Global Energy	**3,035.8**	3,470.8	3,815.8	**337.1**	465.5	534.8
Other	**806.5**	747.1	705.2	**148.1**	127.5	109.9
Corporate	**-**	-	-	**(272.1)**	(663.8)	(252.4)
Subtotal at fixed currency	**12,955.0**	12,914.3	12,765.7	**1,882.8**	1,432.2	1,703.7
Effect of foreign currency translation	**197.8**	630.8	1,514.8	**32.2**	129.1	251.3
Consolidated	**$ 13,152.8**	$ 13,545.1	$ 14,280.5	**$ 1,915.0**	$ 1,561.3	$ 1,955.0

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% and 10% of consolidated net sales in 2016 and 2015, respectively. No class of products was 10% or more of consolidated net sales in 2014.

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 small amount of revenue directly from service offerings.

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

	Service Revenue		
(millions)	**2016**	2015	2014
Global Industrial	**$ 37.2**	$ 48.4	$ 53.2
Global Institutional	**43.1**	36.4	31.1
Global Energy	**263.7**	291.9	294.1
Other	**711.2**	670.6	655.1

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)	**2016**	2015	2014	**2016**	2015
United States	**$ 7,035.5**	$ 7,073.2	$ 7,233.6	**$ 8,790.8**	$ 8,838.2
Europe	**2,361.8**	2,442.1	2,816.5	**1,547.6**	1,508.9
Asia Pacific, excluding Greater China	**1,159.1**	1,131.5	1,229.3	**992.8**	982.6
Latin America	**852.8**	1,100.8	1,177.4	**567.7**	564.2
MEA	**667.4**	682.3	654.1	**296.8**	331.0
Canada	**576.9**	616.6	713.0	**624.8**	636.6
Greater China	**499.3**	498.6	456.6	**1,230.3**	1,332.6
Total	**$ 13,152.8**	$ 13,545.1	$ 14,280.5	**$ 14,050.8**	$ 14,194.1

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
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 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**
2015					
Net sales	$ 3,297.6	$ 3,389.1	$ 3,446.4	$ 3,412.0	$ 13,545.1
Operating expenses					
Cost of sales (a)	1,765.3	1,806.5	1,820.0	1,831.7	7,223.5
Selling, general and administrative expenses	1,136.8	1,079.2	1,070.7	1,058.8	4,345.5
Special (gains) and charges	7.8	65.6	142.7	198.7	414.8
Operating income	387.7	437.8	413.0	322.8	1,561.3
Interest expense, net	62.5	61.2	57.6	62.3	243.6
Income before income taxes	325.2	376.6	355.4	260.5	1,317.7
Provision for income taxes	89.8	67.8	105.3	37.6	300.5
Net income including noncontrolling interest	235.4	308.8	250.1	222.9	1,017.2
Net income (loss) attributable to noncontrolling interest (b)	2.0	6.8	(7.7)	14.0	15.1
Net income attributable to Ecolab	$ 233.4	$ 302.0	$ 257.8	$ 208.9	$ 1,002.1
Earnings attributable to Ecolab per common share					
Basic	$ 0.78	$ 1.02	$ 0.87	$ 0.71	$ 3.38
Diluted	$ 0.77	$ 1.00	$ 0.86	$ 0.69	$ 3.32
Weighted-average common shares outstanding					
Basic	298.2	296.2	295.2	295.8	296.4
Diluted	303.2	301.1	300.0	300.6	301.4

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 $61.9 and $4.1 in Q2 and Q4 of 2016, respectively and $0.6, $11.0, $23.8 and $45.2 in Q1, Q2, Q3 and Q4 of 2015, respectively.

(b) Net income (loss) attributable to noncontrolling interest includes special charges of $11.1 and $1.7 in Q3 and Q4 of 2015, respectively.

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, 2016, 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, 2016.

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, 2016. 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, 2016 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.

Item 9B. Other Information.

None.

PART III

Item 10. Directors, Executive Officers of the Registrant 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(e) of this Form 10-K, and is incorporated herein by reference.

Item 11. Executive Compensation.

Information appearing under the headings entitled "Executive Compensation" and "Director Compensation" located in the Proxy Statement is incorporated herein by reference. However, pursuant to Instructions to Item 407(e)(5) of Securities and Exchange Commission Regulation S-K, the material appearing under the sub-heading "Compensation Committee Report" shall not be deemed to be "filed" with the Commission.

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 999,154 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, 2016 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	13,617,443 (1)	$ 84.54 (1)	13,649,667
Equity compensation plans not approved by security holders	206,900 (2)	55.60 (2)	-
Total	13,824,343	$ 84.04	13,649,667

(1) Includes 272,768 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, 1,386,687 Common Stock equivalents under our 2010 Stock Incentive Plan representing performance-based restricted stock units payable to employees, and 254,387 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 74,804 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 $27.87, 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. Exhibits, Financial Statement Schedules.

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

(a)(1) Financial Statements.

(i) Report of Independent Registered Public Accounting Firm.

(ii) Consolidated Statements of Income for the years ended December 31, 2016, 2015 and 2014.

(iii) Consolidated Statements of Comprehensive Income for the years ended December 31, 2016, 2015 and 2014.

(iv) Consolidated Balance Sheets at December 31, 2016 and 2015.

(v) Consolidated Statements of Cash Flows for the years ended December 31, 2016, 2015 and 2014.

(vi) Consolidated Statements of Equity for the years ended December 31, 2016, 2015 and 2014.

(vii) Notes to Consolidated Financial Statements.

(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 as of 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 as of 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 as of November 28, 2012 to Agreement and Plan of Merger, dated as of 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 as of November 30, 2012 to Agreement and Plan of Merger, dated as 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)

(2.5) Third Amendment dated as of December 28, 2012 to Agreement and Plan of Merger, dated as of 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 as of April 10, 2013 to Agreement and Plan of Merger, dated as of 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 as of 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 January 2, 2013 – Incorporated by reference to Exhibit (4.2) of our Form 10-K Annual Report for the year ended December 31, 2012. (File No. 001-9328)

(4.3) Amended and Restated Indenture, dated as of 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, National Association and Bank One, NA) 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 as of December 8, 2011, between the Company, 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, National Association and Bank One, National Association), 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) Fourth Supplemental Indenture, dated as of December 13, 2012, between The Company, 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, National Association and Bank One, National Association, as original trustee – Incorporated by reference to Exhibit (4.2) of our Form 8-K dated December 13, 2012. (File No. 001-9328)

(4.7) Form of 1.450% Note due December 8, 2017 – Included in Exhibit (4.6) above.

(4.8) Indenture, dated as of 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)

(4.9) First Supplemental Indenture, dated as of January 15, 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)

(4.10) Forms of 1.550% Notes due 2018 and 2.250% Notes due 2020 -- Included in Exhibit (4.9) above.

(4.11) Second Supplemental Indenture, dated July 8, 2015, by and among Ecolab Inc., Wells Fargo Bank, National Association, 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)

(4.12) Form of 2.625% Euro Notes due 2025 – Included in Exhibit (4.11) above.

(4.13) 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)

(4.14) Forms of 2.000% Notes due 2019 and 3.250% Notes due 2023 – Included in Exhibit (4.13) above.

(4.15) Fourth Supplemental Indenture, dated October 18, 2016, between the Company and Wells Fargo Bank, National Association – Incorporated by reference to Exhibit 4.2 of our Form 8-K dated October 13, 2016. (File No. 001-9328)

(4.16) Forms of 2.700% Notes due 2026 and 3.700% Notes due 2046 – Included in Exhibit (4.15) above.

(4.17) Fifth Supplemental Indenture, dated December 8, 2016, by and among the Company, Wells Fargo Bank, National Association, 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)

(4.18) 000% Euro Notes due 2024 - Included in Exhibit 4.17 above.

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) Amended and Restated $2.0 billion 5-Year Revolving Credit Facility, dated as of December 3, 2014, among Ecolab Inc., the lenders party thereto, the issuing banks party thereto, Bank of America, N.A., as administrative agent and Swingline 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 December 3, 2014. (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)

(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 21 September 2016 between Ecolab Inc., Ecolab Lux 1 S.à r.l., Ecolab Lux 2 S.à r.l. and Ecolab NL 10 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.), 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 8-K dated September 21, 2016. (File No. 001-9328)

(b) Amended and Restated Note Agency Agreement dated 21 September 2016 between Ecolab Inc., Ecolab Lux 1 S.à r.l., Ecolab Lux 2 S.à r.l. and Ecolab NL 10 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 Citibank, N.A., London Branch (as Issue and Paying Agent) - Incorporated by reference to Exhibit 10.1(b) of our Form 8-K dated September 21, 2016. (File No. 001-9328)

(c) Deed of Covenant made on 21 September 2016 by Ecolab Inc., Ecolab Lux 1 S.à r.l., Ecolab Lux 2 S.à r.l. and Ecolab NL 10 B.V. (as Issuers) - Incorporated by reference to Exhibit 10.1(c) of our Form 8-K dated September 21, 2016 - Incorporated by reference to Exhibit 10.1(c) of our Form 8-K dated September 21, 2016. (File No. 001-9328)

(d) Deed of Guarantee made on 21 September 2016 by Ecolab Inc. - Incorporated by reference to Exhibit 10.1(d) of our Form 8-K dated September 21, 2016. (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 as of 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) Commercial Issuing and Paying Agency Agreement dated as of September 22, 2014 between Ecolab Inc. and Deutsche Bank Trust Company Americas as Issuing and Paying Agent - Incorporated by reference to Exhibit (10.1)(b) of our Form 10-Q for the quarter ended September 30, 2014. (File No. 001-9328)

(c) Corporate Commercial Paper – Master Note dated September 22, 2014, together with annex thereto – Incorporated by reference to Exhibit (10.1)(c) of our Form 10-Q for the quarter ended September 30, 2014. (File No. 001-9328)

(10.4) (i) Ecolab Inc. 2001 Non-Employee Director Stock Option and Deferred Compensation Plan, as amended and restated effective 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 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)

(iii) Master Agreement Relating to Options (as in effect through May 7, 2004) – Incorporated by reference to Exhibit (10)D(i) of our Form 10-Q for the quarter ended June 30, 2004. (File No. 001-9328)

(iv) 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)

(v) Amendment No. 1 to Master Agreement Relating to Periodic Options, as amended effective 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 as of 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 to Note Purchase Agreement dated July 26, 2006, dated as of October 27, 2011, 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 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 (10.14) hereof. (File No. 001-9328)

(ii) Amendment No. 1 to Ecolab Executive Death Benefits Plan, effective 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 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 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 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 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)

(10.8) (i) Ecolab Executive Long-Term Disability Plan, as amended and restated effective January 1, 1994 – Incorporated by reference to Exhibit (10)I of our Form 10-K Annual Report for the year ended December 31, 2004. (File No. 001-9328). See also Exhibit (10.14) hereof.

(ii) Amendment No. 1 to the Ecolab Executive Long-Term Disability Plan, effective 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. (File No. 001-9328). See also Exhibit (10.14) hereof.

(ii) Amendment No. 1 to the Ecolab Supplemental Executive Retirement Plan, effective 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. (File No. 001-9328) See also Exhibit (10.14) hereof.

(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. (File No. 001-9328). See also Exhibit (10.14) hereof.

(10.12) (i) Ecolab Inc. Administrative Document for Non-Qualified Plans (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 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 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 – 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 – 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 – 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 – 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 as 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, as adopted December 7, 2016.

(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 – 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)

(10.20) Sublease Agreement, dated as of November 4, 2003 between Leo Holding Company, as sub-landlord and Ondeo Nalco Company, as subtenant – Incorporated by reference from Exhibit (10.6) of the Registration Statement on Form S-4 of Nalco Company filed on May 17, 2004. (File No. 333-115560)

(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.

(23.1) Consent of Independent Registered Public Accounting Firm.

(24.1) Powers of Attorney.

(31.1) Rule 13a-14(a) CEO Certification.

(31.2) Rule 13a-14(a) CFO Certification.

(32.1) Section 1350 CEO and CFO Certifications.

(101.1) Interactive Data File.

EXECUTIVE COMPENSATION PLANS AND ARRANGEMENTS

Included in the preceding list of exhibits are the following management contracts or compensatory plans or arrangements:

Exhibit No.	Description
(10.4)	Ecolab Inc. 2001 Non-Employee Director Stock Option and Deferred Compensation Plan.
(10.6)	Form of Director Indemnification Agreement.
(10.7)	Ecolab Executive Death Benefits Plan.
(10.8)	Ecolab Executive Long-Term Disability Plan.
(10.9)	Ecolab Supplemental Executive Retirement Plan.
(10.10)	Ecolab Mirror Savings Plan.
(10.11)	Ecolab Mirror Pension Plan.
(10.12)	Ecolab Inc. Administrative Document for Non-Qualified Plans.
(10.13)	Ecolab Inc. Management Performance Incentive Plan.
(10.14)	Ecolab Inc. Change in Control Severance Compensation Policy.
(10.15)	Description of Ecolab Inc. Management Incentive Plan.
(10.16)	Ecolab Inc. 2010 Stock Incentive Plan.
(10.17)	Policy on Reimbursement of Incentive Payments.
(10.18)	Second Amended and Restated Nalco Holding Company 2004 Stock Incentive Plan.
(10.19)	Nalco Company Death Benefit Agreement and Addendum to Death Benefit Agreement.

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 24th day of February, 2017.

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 24th day of February 2017.

/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/ Bryan L. Hughes Bryan L. Hughes	Senior Vice President and Corporate Controller (Principal Accounting Officer)
/s/ James J. Seifert James J. Seifert	Directors

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

INVESTOR INFORMATION

ANNUAL MEETING

Ecolab's annual meeting of stockholders will be held on Thursday, May 4, 2017, at 10 a.m. in the Auditorium of the Landmark Center, 75 West 5th Street, St. Paul, MN 55102.

COMMON STOCK

Our stock trading symbol is ECL. Ecolab common stock is listed and traded on the New York Stock Exchange (NYSE). Ecolab stock is also traded on an unlisted basis on certain other exchanges. Options are traded on the NYSE.

Ecolab common stock is included in the S&P 500 Materials sector of the Global Industry Classification Standard.

As of January 31, 2017, Ecolab had 6,762 shareholders of record. The closing stock price on the NYSE on January 31, 2017, was $120.13 per share.

DIVIDEND POLICY

Ecolab has paid common stock dividends for 80 consecutive years. Quarterly cash dividends are typically paid on the 15th of January, April, July and October, or the ensuing business day.

DIVIDEND REINVESTMENT PLAN

Stockholders of record may elect to reinvest their dividends. Plan participants may also elect to purchase Ecolab common stock through this service.

To enroll in the plan, stockholders may contact the plan sponsor, Computershare, for a brochure and enrollment form.

GOVERNANCE

Disclosures concerning our board of directors' policies, governance principles and corporate ethics practices, including our Code of Conduct, are available online at **www.ecolab.com/investors/corporate-governance**.

INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

PricewaterhouseCoopers LLP
45 South 7th Street
Minneapolis, MN 55402

INVESTOR INQUIRIES

Securities analysts, portfolio managers and representatives of financial institutions should contact:

Ecolab Investor Relations
1 Ecolab Place
St. Paul, MN 55102
Phone: **651.250.2500**

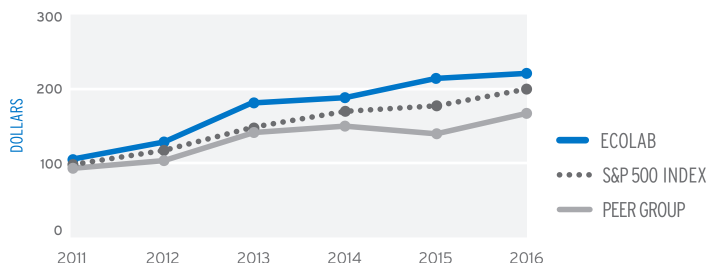
INVESTOR RESOURCES

SEC FILINGS: Copies of Ecolab's Form 10-K, 10-Q and 8-K reports as filed with the Securities and Exchange Commission are available free of charge. These documents may be obtained on our website at **www.ecolab.com/investor** promptly after such reports are filed with, or furnished to, the SEC, or by contacting:

Ecolab Inc.
Attn: Corporate Secretary
1 Ecolab Place
St. Paul, MN 55102
Email: **investor.info@ecolab.com**

INVESTMENT PERFORMANCE

The following stock performance graph assumes investment of $100 in Ecolab Common Stock, the Standard & Poor's 500 Index and an index comprised of the company's self-selected composite peer group on December 30, 2011, and daily reinvestment of all dividends.



The companies comprising the peer group are set forth below. The stock performance graph differs from last year's graph by entirely excluding Cameron International Corp. due to the acquisition of that company during 2016. Further information regarding the peer group can be found in Ecolab's proxy statement for the annual meeting to be held on May 4, 2017.

PEER GROUP:

3M Co.
Air Products and Chemicals Inc.
Airgas Inc.
Ashland Inc.
Baker Hughes Inc.
Celanese Corp.
Danaher Corp.
Dow Chemical Company
E.I. du Pont de Nemours and Co.
Eastman Chemical Co.
Halliburton Co.
Monsanto Co.
National Oilwell Varco Inc.
PPG Industries Inc.
Praxair Inc.
Schlumberger Ltd.
Sealed Air Corp.
Sherwin-Williams Co.
Weatherford International plc

TRANSFER AGENT, REGISTRAR AND DIVIDEND PAYING AGENT

Stockholders of record may contact the transfer agent, Computershare Trust Company, N.A., to request assistance with a change of address, transfer of share ownership, replacement of lost stock certificates, dividend payment or tax reporting issues. If your Ecolab stock is held in a bank or brokerage account, please contact your bank or broker for assistance.

COURIER ADDRESS:

Computershare
Trust Company, N.A.
211 Quality Circle, Suite 210
College Station, TX 77845

GENERAL CORRESPONDENCE AND DIVIDEND REINVESTMENT PLAN CORRESPONDENCE:

Computershare
Trust Company, N.A.
P.O. Box 30170
College Station, TX 77842-3170

WEBSITE:

www.computershare.com/ecolab

TELEPHONE:

1.312.360.5203 or
1.800.322.8325

HEARING IMPAIRED:

1.312.588.4110

Computershare provides telephone assistance to stockholders Monday through Friday from 8 a.m. to 8 p.m. and Saturday from 9 a.m. to 5 p.m. (Eastern Time). Around-the-clock service is also available online and via the telephone Interactive Voice Response system.

REDUCE, RE-USE, RECYCLE

If you received multiple copies of this report, you may have duplicate investment accounts. Help save resources. Please contact your broker or the transfer agent to request assistance with consolidating any duplicate accounts.

All product names appearing in the text of this Annual Report are the trademarks, brand names, service marks or copyrights of Ecolab USA Inc. or affiliated Ecolab group companies.

BOARD OF DIRECTORS

DOUGLAS M. BAKER, JR.
Chairman of the Board and Chief Executive Officer of Ecolab Inc., Director since 2004

BARBARA J. BECK
Chief Executive Officer of Learning Care Group Inc. (early education/child care provider), Director since 2008, Safety, Health and Environment* and Governance Committees

LESLIE S. BILLER
Chief Executive Officer of Harborview Capital (private investment and consultive company), Director since 1997, Compensation and Finance* Committees

CARL M. CASALE
President and Chief Executive Officer of CHS Inc. (global agribusiness), Director since 2013, Audit and Governance Committees

STEPHEN I. CHAZEN
Retired President and Chief Executive Officer of Occidental Petroleum Corporation (oil, natural gas and chemical producer), Director since 2013, Audit and Finance Committees

JEFFREY M. ETTINGER
Chairman of the Board of Hormel Foods Corporation (food products), Director since 2015, Compensation and Safety, Health and Environment Committees

JERRY A. GRUNDHOFER
Chairman Emeritus and retired Chairman of the Board of US Bancorp (financial services), Director since 1999, Compensation* and Finance Committees

ARTHUR J. HIGGINS
Consultant Blackstone Healthcare Partners of The Blackstone Group (asset management and advisory firm), Director since 2010, Compensation and Governance Committees

MICHAEL LARSON
Chief investment officer to William H. Gates III and Business Manager of Cascade Investment, L.L.C., Director since 2012, Finance and Safety, Health and Environment Committees

JERRY W. LEVIN
Chairman of JW Levin Management Partners, LLC (private investment and advisory firm), Director since 1992, Compensation and Governance* Committees and Lead Director

DAVID W. MACLENNAN
Chairman and Chief Executive Officer of Cargill, Incorporated, Director since 2015, Audit and Governance Committees

TRACY B. MCKIBBEN
Founder and Chief Executive Officer of MAC Energy Advisors LLC (consulting company for alternative energy and clean technology investments), Director since 2015, Audit and Finance Committees

VICTORIA J. REICH
Former Senior Vice President and Chief Financial Officer of Essendant Inc. (f/k/a United Stationers Inc., a wholesale distributor of business products), Director since 2009, Audit* and Safety, Health and Environment Committees

SUZANNE M. VAUTRINOT
President of Kilovolt Consulting Inc. and a retired Major General of United States Air Force, Director since February 2014, Audit and Finance Committees

JOHN J. ZILLMER
Retired President and Chief Executive Officer of Univar Inc. (industrial chemicals and related specialty services), Director since 2006, Compensation and Governance Committees

*Denotes committee chair

COMMUNICATION WITH DIRECTORS

Stakeholders and other interested parties, including our investors and associates, with substantive matters requiring the attention of our board (e.g., governance issues or potential accounting, control or auditing irregularities) may use the contact information for our board located on our website at **www.ecolab.com/investors/corporate-governance**.

Matters not requiring the direct attention of our board — such as employment inquiries, sales solicitations, questions about our products and other such matters — should be submitted to the company's management at our Global Headquarters in St. Paul, Minn.

In addition to online communication, interested parties may send direct correspondence to our board at:

Ecolab Inc.
Attn: Corporate Secretary
1 Ecolab Place
St. Paul, MN 55102

CORPORATE OFFICERS

DOUGLAS M. BAKER, JR.
Chairman of the Board and Chief Executive Officer

CHRISTOPHE BECK
Executive Vice President and President – Global Water and Process Services

LARRY L. BERGER
Executive Vice President and Chief Technical Officer

ALEX N. BLANCO
Executive Vice President and Chief Supply Chain Officer

DARRELL BROWN
Executive Vice President and President – Europe

ANGELA M. BUSCH
Senior Vice President – Corporate Development

THOMAS W. HANDLEY
President and Chief Operating Officer

MICHAEL A. HICKEY
Executive Vice President and President – Global Institutional

BRYAN L. HUGHES
Senior Vice President and Corporate Controller

ROBERTO INCHAUSTEGUI
Executive Vice President and President – Global Services and Specialty

LAURIE M. MARSH
Executive Vice President – Human Resources

MICHAEL C. MCCORMICK
Executive Vice President, General Counsel and Assistant Secretary

STEWART H. MCCUTCHEON
Executive Vice President and Chief Information Officer

JUDY M. MCNAMARA
Vice President – Tax

TIMOTHY P. MULHERE
Executive Vice President and President – Regions

JOANNE JIRIK MULLEN
Chief Compliance Officer and Assistant Secretary

DANIEL J. SCHMECHEL
Chief Financial Officer and Treasurer

JAMES J. SEIFERT
Secretary

ELIZABETH SIMERMEYER
Executive Vice President – Global Marketing and Communications and Life Sciences

STEPHEN M. TAYLOR
Executive Vice President and President – Nalco Champion

JILL S. WYANT
Executive Vice President and President – Global Food & Beverage, Healthcare and Life Sciences

This report was designed and printed
by WBENC-Certified firms. Printed using
agri-based inks on FSC®-certified paper.

Global Headquarters
1 Ecolab Place, St. Paul, MN 55102
www.ecolab.com 1 800 2 ECOLAB

©2017 Ecolab USA Inc. All rights reserved. 50786/0800/0217

ECOLAB®
Everywhere It Matters.™