

**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, 2017

OR

**TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**  
FOR THE TRANSITION PERIOD FROM \_\_\_\_\_ TO \_\_\_\_\_  
Commission File Number 1-4462

**STEPAN COMPANY**

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of incorporation or organization)

Edens and Winnetka Road, Northfield, Illinois

(Address of principal executive offices)

36-1823834

(I.R.S. Employer Identification Number)

60093

(Zip Code)

Registrant's telephone number including area code: 847-446-7500

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

Title of Each Class

Common Stock, \$1 par value

Name of Each Exchange on Which Registered

New York Stock Exchange

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

(Check one): Large accelerated filer  Accelerated filer  Non-accelerated filer  Smaller reporting company

Emerging growth company

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

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

Aggregate market value at June 30, 2017, of voting and non-voting common stock held by nonaffiliates of the registrant: \$ 1,715,568,314\*

Number of shares outstanding of each of the registrant's classes of common stock as of January 31, 2018:

Class

Common Stock, \$1 par value

Outstanding at January 31, 2018

22,514,141

**Documents Incorporated by Reference**

**Part of Form 10-K**

Part III, Items 10-14

**Document Incorporated**

Portions of the Proxy Statement for Annual Meeting of Stockholders to be held  
April 24, 2018.

\* Based on reported ownership by all directors and executive officers at June 30, 2017.

STEPAN COMPANY  
ANNUAL REPORT ON FORM 10-K  
December 31, 2017

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## SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

Certain statements in this Annual Report on Form 10-K, other than purely historical information, are “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995, Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended (the Exchange Act). These statements include statements about Stepan Company’s and its subsidiaries’ (the Company) plans, objectives, strategies, financial performance and outlook, trends, the amount and timing of future cash distributions, prospects or future events and involve known and unknown risks that are difficult to predict. As a result, our actual financial results, performance, achievements or prospects may differ materially from those expressed or implied by these forward-looking statements. In some cases, forward-looking statements can be identified by the use of words such as “may,” “could,” “expect,” “intend,” “plan,” “seek,” “anticipate,” “believe,” “estimate,” “guidance,” “predict,” “potential,” “continue,” “likely,” “will,” “would,” “should,” “illustrative” and variations of these terms and similar expressions, or the negative of these terms or similar expressions. Such forward-looking statements are necessarily based upon estimates and assumptions that, while considered reasonable by the Company and its management based on their knowledge and understanding of the business and industry, are inherently uncertain. These statements are not guarantees of future performance, and stockholders should not place undue reliance on forward-looking statements. There are a number of risks, uncertainties and other important factors, many of which are beyond the Company’s control, that could cause the Company’s actual results to differ materially from the forward-looking statements contained in this Annual Report on Form 10-K. Such risks, uncertainties and other important factors, include, among others, the risks, uncertainties and factors set forth under “Part I-Item IA. Risk Factors” and “Part II-Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations,” and the risks and uncertainties related to the following:

- accidents, unplanned production shutdowns or disruptions in any of the Company’s manufacturing facilities;
- global competition and the Company’s ability to successfully compete;
- volatility of raw material, natural gas and electricity costs as well as any disruption in their supply;
- disruptions in transportation or significant changes in transportation costs;
- reduced demand for Company products due to customer product reformulations or new technologies;
- the Company’s ability to make acquisitions of suitable candidates and successfully integrate acquisitions;
- the Company’s ability to keep and protect its intellectual property rights;
- international business risks, including fluctuations in currency exchange rates, legal restrictions and taxes;
- potentially adverse tax consequences due to the international scope of the Company’s operations;
- the impact of changes in the tax code as a result of recent U.S. federal tax legislation and uncertainty as to how some of those changes may be applied;
- compliance with anti-corruption, environmental, health and safety and product registration laws;
- the Company’s inability to accurately estimate and maintain appropriate levels of recorded liabilities for existing and future contingencies;
- the Company’s ability to operate within the limitations of debt covenants;
- downgrades to the Company’s credit ratings or disruptions to the Company’s ability to access well-functioning capital markets;
- downturns in certain industries and general economic downturns;
- conflicts, military actions, terrorist attacks and general instability, particularly in certain energy-producing nations, along with increased security regulations;
- cost overruns, delays and miscalculations in capacity needs with respect to the Company’s expansion or other capital projects;
- interruption of, damage to or compromise of the Company’s IT systems and failure to maintain the integrity of customer, colleague or Company data;
- unfavorable resolution of litigation against the Company;
- the Company’s ability to retain its executive management and other key personnel; and
- the other factors set forth under “Risk Factors.”

These factors are not necessarily all of the important factors that could cause the Company's actual financial results, performance, achievements or prospects to differ materially from those expressed in or implied by any of the Company's forward-looking statements. Other unknown or unpredictable factors also could harm the Company's results. All forward-looking statements attributable to us or persons acting on the Company's behalf are expressly qualified in their entirety by the cautionary statements set forth above. Forward-looking statements speak only as of the date they are made, and we do not undertake or assume any obligation to update publicly any of these forward-looking statements to reflect actual results, new information or future events, changes in assumptions or changes in other factors affecting forward-looking statements, except to the extent required by applicable laws. If we update one or more forward-looking statements, no inference should be drawn that we will make additional updates with respect to those or other forward-looking statements.

The "Company," "we," "our" or "us" means Stepan Company and one or more of its subsidiaries only.

## PART I

### Item 1. Business

Stepan Company, which was incorporated under the laws of the state of Delaware on February 19, 1959, and its subsidiaries produce specialty and intermediate chemicals, which are sold to other manufacturers and used in a variety of end products. The Company has three reportable segments: Surfactants, Polymers and Specialty Products.

Surfactants are chemical agents that affect the interaction between two surfaces; they can provide actions such as detergency (i.e., the ability of water to remove soil from another surface), wetting and foaming, dispersing, emulsification (aiding two dissimilar liquids to mix), demulsification, viscosity modifications and biocidal disinfectants. Surfactants are the basic cleaning agent in detergents for washing clothes, dishes, carpets, fine fabrics, floors and walls. Surfactants are also used for the same purpose in shampoos, body wash and conditioners, fabric softeners, toothpastes, cosmetics and other personal care products. Commercial and industrial applications include emulsifiers for agricultural products, emulsion polymers such as floor polishes and latex foams and coatings, wetting and foaming agents for wallboard manufacturing and surfactants for enhanced oil recovery.

Polymers, which include polyurethane polyols, polyester resins and phthalic anhydride, are used in a variety of applications. Polyurethane polyols are used in the manufacture of rigid foam for thermal insulation in the construction industry. They are also a raw material base for coatings, adhesives, sealants and elastomers (CASE) applications. Polyester resins, which include liquid and powdered products, are used in CASE applications. Phthalic anhydride is used in polyester resins, alkyd resins, and plasticizers for applications in construction materials and components of automotive, boating, and other consumer products and internally in the Company's polyols.

Specialty Products are chemicals used in food, flavoring, nutritional supplement and pharmaceutical applications.

### MARKETING AND COMPETITION

Principal customers for surfactants are manufacturers of detergents, shampoos, body wash, fabric softeners, toothpastes and cosmetics. In addition, surfactants are sold to the producers of agricultural herbicides and insecticides and lubricating products. Surfactants are also sold into the oilfield market to aid production, drilling and hydraulic fracking. Polymers are used in the construction and appliance industries, as well as in applications for the coatings, adhesives, sealants and elastomers industries. Phthalic anhydride, a Polymer product, is also used by automotive, boating and other consumer product companies. Specialty products are used primarily by food, nutritional supplement and pharmaceutical manufacturers.

The Company does not sell directly to the retail market, but sells to a wide range of manufacturers in many industries and has many competitors. The principal methods of competition are product performance, price, technical assistance and ability to meet the specific needs of individual customers. These factors allow the Company to compete on bases other than price alone, reducing the severity of competition as experienced in the sales of commodity chemicals having identical performance characteristics. The Company is one of the leading merchant producers of surfactants in the world. In the case of surfactants, much of the Company's competition comes from several large global and regional producers and the internal divisions of larger customers. In the manufacture of polymers, the Company competes with the chemical divisions of several large companies, as well as with other small specialty chemical manufacturers. In specialty products, the Company competes with several large firms plus numerous small companies.

### MAJOR CUSTOMER AND BACKLOG

The Company did not have any one customer whose business represented more than 10 percent of the Company's consolidated revenue in 2017, 2016 or 2015. The Company has contract arrangements with certain customers, but volumes are generally contingent on purchaser requirements. Much of the Company's business is essentially on a "spot delivery basis" and does not involve a significant backlog.

### ENERGY SOURCES

Substantially all of the Company's manufacturing plants operate on electricity and interruptible natural gas. During peak heating demand periods, gas service to all plants may be temporarily interrupted for varying periods ranging from a few days to several months. The plants operate on fuel oil during these periods of interruption. The Company's operations have not experienced any plant shutdowns or adverse effects upon its business in recent years that were caused by a lack of available energy sources, other than temporary service interruptions brought on by mechanical failure and severe weather conditions.

## **RAW MATERIALS**

The principal raw materials used by the Company are petroleum or plant based. For 2018, the Company has contracts with suppliers that cover the majority of its forecasted requirements for major raw materials and is not substantially dependent upon any one supplier.

## **RESEARCH AND DEVELOPMENT**

The Company maintains an active research and development program to assist in the discovery and commercialization of new knowledge with the intent that such efforts will be useful in developing a new product or in bringing about a significant improvement to an existing product or process. Total expenses for research and development during 2017, 2016 and 2015 were \$33.2 million, \$34.9 million, and \$30.3 million, respectively. The remainder of research, development and technical service expenses reflected in the consolidated statements of income relates to technical services, which include routine product testing, analytical methods development and sales support service.

## **ENVIRONMENTAL COMPLIANCE**

Compliance with applicable country, state and local regulations regarding the discharge of materials into the environment, or otherwise relating to the protection of the environment, resulted in capital expenditures by the Company of approximately \$3.2 million during 2017. These expenditures represented approximately 4 percent of the Company's total 2017 capital expenditures. Capitalized environmental expenditures are depreciated and charged on a straight-line basis to pretax earnings over their estimated useful lives, which are typically 10 years. Recurring costs associated with the operation and maintenance of facilities for waste treatment and disposal and managing environmental compliance in ongoing operations at our manufacturing locations were approximately \$28.2 million in 2017. Compliance with such regulations is not expected to have a material adverse effect on the Company's earnings and competitive position in the foreseeable future.

## **EMPLOYMENT**

At December 31, 2017 and 2016, the Company employed 2,096 and 2,145 persons, respectively. The Company has collective bargaining agreements with employees at some of its manufacturing locations. While the Company has experienced occasional work stoppages as a result of the collective bargaining process and may experience some work stoppages in the future, management believes that it will be able to negotiate all labor agreements on satisfactory terms. Past work stoppages have not had a significant impact on the Company's operating results. Overall, the Company believes it has good relationships with its employees.

## **FOREIGN OPERATIONS AND REPORTING SEGMENTS**

See Note 17, Segment Reporting, of the Consolidated Financial Statements (Item 8 of this Form 10-K).

## **ACQUISITIONS AND DISPOSITIONS**

See Note 20, Acquisitions, of the Consolidated Financial Statements (Item 8 of this Form 10-K). See also Note 21, Sale of Product Line, of the Consolidated Financial Statements (Item 8 of this Form 10-K).

## **WEBSITE**

The Company's website address is [www.stepan.com](http://www.stepan.com). The Company makes available free of charge on or through its website its code of conduct, annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and all amendments to those reports as soon as reasonably practicable after such material is electronically filed with or furnished to the Securities and Exchange Commission. The website also includes the Company's corporate governance guidelines and the charters for the audit, nominating and corporate governance and compensation and development committees of the Board of Directors.

## **Executive Officers of the Registrant**

The Company's executive officers are elected annually by the Board of Directors at the first meeting following the Annual Meeting of Stockholders to serve through the next annual meeting of the Board and until their respective successors are duly elected and qualified.

The executive officers of the Company, their ages and certain other information as of February 27, 2018, are as follows:

| Name                 | Age | Title  | Year First Elected Officer |
|----------------------|-----|--|----------------------------|
| F. Quinn Stepan, Jr. | 57  | Chairman, President and Chief Executive Officer                          | 1997                       |
| Frank Pacholec       | 62  | Vice President, Strategy and Corporate Development                       | 2003                       |
| Gregory Servatius    | 58  | Vice President, Human Resources  | 2006                       |
| Arthur W. Mergner    | 54  | Vice President, Supply Chain   | 2014                       |
| Scott R. Behrens     | 48  | Vice President and General Manager – Surfactants                         | 2014                       |
| Debra A. Stefaniak   | 56  | Vice President, Business Transformation                                  | 2015                       |
| Jennifer A. Hale     | 56  | Vice President, General Counsel, Chief Compliance Officer and Secretary  | 2016                       |
| Robert V. Slone      | 46  | Vice President, Corporate Technology and Sustainability                  | 2016                       |
| Sean T. Moriarty     | 48  | Vice President and General Manager – Polymers                            | 2017                       |
| Matthew J. Eaken     | 55  | Vice President, Corporate Controller and Interim Chief Financial Officer | 2018                       |

F. Quinn Stepan, Jr. assumed the position of Chairman of the Company's Board of Directors on of January 1, 2017. He continues to serve the Company as President and Chief Executive Officer, as he has done since January 2006. He served the Company as President and Chief Operating Officer from 1999 through 2005.

Frank Pacholec has served the Company as Vice President, Strategy and Corporate Development since June 2016. He served as Vice President, Research and Development and Corporate Sustainability Officer from May 2010 until June 2016.

Gregory Servatius has served the Company as Vice President, Human Resources since February 2006. From April 2003 until January 2006, he served as Vice President, Surfactant Sales.

Arthur W. Mergner has served the Company as Vice President, Supply Chain since August 2017. From April 2014 until August 2017, he served as Vice President and General Manager - Polymers. From June 2013 until April 2014, he served as Vice President - North America Polymers.

Scott R. Behrens has served the Company as Vice President and General Manager – Surfactants since September 2014. From January 2010 to September 2014 he served as Vice President – Business Management.

Debra A. Stefaniak has served the Company as Vice President, Business Transformation since February 2014. From May 2009 to February 2014, she served as Vice President, Global Logistics.

Jennifer A. Hale has served the Company as Vice President, General Counsel and Secretary since January 2016 and as Chief Compliance officer since April 2017. From 2013 through 2015, she served as Vice President, Global General Counsel and Strategic Business Consultant at Vita-Mix Holdings Company. From 2007 to 2013, she served as Vice President, General Counsel and Secretary at Dyson, Inc.

Robert V. Slone has served the Company as Vice President, Chief Technology and Sustainability Officer since June 2016. From November 2013 until June 2016, he served as Vice President of Surfactants Product Development. From 2011 to 2013, he served as Director of Technology at British Petroleum/Castrol innoVentures.

Sean T. Moriarty has served the Company as Vice President and General Manager – Polymers since September 2017. From September 2014 through September 2017, he served as Vice President and General Manager – North America Surfactants. From January 2012 through September 2014 he served as Vice President - Global Consumer Products.

Effective January 1, 2018, Matthew J. Eaken was appointed Interim Chief Financial Officer of the Company, in addition to continuing his current role as the Company's Vice President and Corporate Controller, until such time as a permanent replacement is named. Mr. Eaken has served the Company as Vice President and Corporate Controller since January 2011.

## Item 1A. Risk Factors

The following discussion identifies the most significant factors that may materially and adversely affect the Company's business, financial condition, results of operations and cash flows. These and other factors, many of which are beyond the Company's control, may cause future results of operations to differ materially from past results or those results currently expected or desired. The following information should be read in conjunction with Part II, Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations and the consolidated financial statements and related notes included in this Form 10-K.

### **RISKS RELATED TO OUR BUSINESS**

***Chemical manufacturing is inherently hazardous and may result in accidents or may require planned or unplanned production shutdowns, which may disrupt our operations or expose us to significant losses or liabilities, which may have a material impact on our business, financial position, results of operations and cash flows.***

Manufacturing facilities in the Company's industry are subject to planned and unplanned production shutdowns, turnarounds and outages. Unplanned production disruptions may occur for external reasons, such as natural disasters, weather, disease, strikes, transportation interruption, government regulation, political unrest or terrorism, or internal reasons, such as fire, maintenance or other manufacturing problems. Certain of our production facilities are, and production facilities acquired or built in the future may be, located in areas where unplanned disruptions are more likely. Alternative facilities with sufficient capacity may not be available, may cost substantially more or may take a significant amount of time to increase production or qualify with Company customers, each of which could negatively impact the Company's business, financial position, results of operations and cash flows. Further, some of the Company's products cannot currently be made, or made in the volume required, at more than one of the Company's locations. For some of these products, the Company has access to external market suppliers, but the Company cannot guarantee that these products will be available to it in amounts sufficient to meet its requirements or at a cost that is competitive with the Company's cost of manufacturing these products. Long-term production disruptions may cause Company customers to seek alternative supply, which could further adversely affect Company profitability.

Although the Company takes precautions to enhance the safety of its operations and minimize the risk of disruptions, the hazards associated with chemical manufacturing and the related storage and transportation of raw materials, products and wastes are inherent in our operations. We cannot eliminate the risk of accidental contamination, discharge or injury resulting from those materials. Also, our suppliers and customers may use and/or generate hazardous materials, and we may be required to indemnify our suppliers, customers or waste disposal contractors against damages and other liabilities arising out of the production, handling or storage of our products or raw materials or the disposal of related wastes. Potential risks include explosions and fires, chemical spills and other discharges or releases of toxic or hazardous substances or gases, and pipeline and storage tank leaks and ruptures. Those hazards may result in personal injury and loss of life, damage to property, damages to public health and contamination of the environment, which may result in a suspension of operations and the imposition of civil or criminal fines, penalties and other sanctions, cleanup costs, and claims by governmental entities or third-parties. Furthermore, the Company is subject to present and future claims with respect to workplace exposure, exposure of contractors on Company premises as well as other persons located nearby, workers' compensation and other matters.

We are dependent on the continued operation of our production facilities and the loss or shutdown of operations over an extended period could have a material adverse effect on our financial condition, or results of operations. The Company maintains property, business interruption, products liability and casualty insurance policies which we believe are in accordance with customary industry practices, as well as insurance policies covering other types of risks, including pollution legal liability insurance. However, some of these potential manufacturing hazards and risks may not be insurable. Moreover, even when insurable, the insurance coverage may not be sufficient to cover all losses resulting from the occurrence of any of these events. Each of these insurance policies is subject to customary exclusions, deductibles and coverage limits, in accordance with industry standards and practices. As a result of market conditions, premiums and deductibles for certain insurance policies can increase substantially and, in some instances, certain insurance may become unavailable or available only for reduced amounts of coverage. There is also a risk, beyond the reasonable control of the Company, that an insurance carrier may not have the financial resources to cover an insurable loss. As a result, the occurrence of any of these events could have a material adverse effect on the Company's business, financial position, results of operations and cash flows.

***The Company faces significant global competition in each of its operating segments. If the Company cannot successfully compete in the marketplace, its business, financial position, results of operations and cash flows may be materially and adversely affected.***

The Company faces significant competition from numerous global companies as well as national, regional and local companies in the markets it serves. Many of the Company's competitors have access to greater financial resources, which may enable them to invest significant capital into their businesses, including expenditures for research and development. Some of the Company's competitors have their own raw material resources and may be able to produce products more economically. In addition, some of the Company's customers have internal manufacturing capabilities that allow them to achieve make-versus-buy economics, which may result at times in the Company gaining or losing business with these customers in volumes that could adversely affect its profitability.



To achieve expected profitability levels, the Company must, among other things, maintain the service levels, product quality and performance and competitive pricing necessary to retain existing customers and attract new customers. The Company's inability to do so could place it at a competitive disadvantage relative to its competitors and if the Company cannot successfully compete in the marketplace, its business, financial position, results of operations and cash flows may be materially and adversely affected.

***The volatility of raw material, natural gas and electricity costs as well as any disruption in their supply may result in increased costs and materially and adversely affect the Company's business, financial position, results of operations and cash flows.***

The costs of raw materials, natural gas and electricity represent a substantial portion of the Company's operating costs. The principal raw materials used in the Company's products are petroleum-based or plant-based. Natural gas is used in the Company's manufacturing sites primarily to generate steam for its manufacturing processes. The prices of many of these raw materials have recently increased and been very volatile. These fluctuations in prices may be affected by supply and demand factors, such as general economic conditions, manufacturers' ability to meet demand, restrictions on the transport of raw material (some of which may be viewed as hazardous), currency exchange rates, political instability or terrorist attacks, all of which are beyond the Company's control. The Company may not be able to pass increased raw material or energy costs on to customers through increases in product prices as a result of arrangements the Company has with certain customers and competitive pressures in the market. If the Company is unable to minimize the effects of increased raw material and energy costs or pass such increased costs on to customers, or manage any interruption to the supply of raw materials or energy, its business, financial position, results of operations and cash flows may be materially and adversely affected.

***The Company relies heavily on third party transportation to deliver raw materials to Company manufacturing facilities and ship products to Company customers. Disruptions in transportation or significant changes in transportation costs could affect the Company's business, financial position, results of operations and cash flows.***

The Company relies heavily on railroads, ships, barges, tank trucks and other over-the-road shipping methods to transport raw materials to its manufacturing facilities and to ship finished product to customers. Transport operations are exposed to various risks, such as extreme weather conditions, natural disasters, work stoppages, personnel shortages and operating hazards, as well as interstate and international transportation requirements. If the Company experiences transportation problems, or if there are significant changes in the cost of these services, the Company may not be able to arrange efficient alternatives and timely means to obtain raw materials or ship finished product, which could result in an adverse effect on Company revenues, costs and operating results.

***Customer product reformulations or new technologies can reduce the demand for the Company's products.***

The Company's products are used in a broad range of customer product applications. Customer product reformulations or development and use of new technologies may lead to reduced consumption of Company-produced products or make some Company products obsolete. It is imperative that the Company continue to develop new products to replace the sales of products that mature and decline in use. The Company's business, financial position, results of operations and cash flows could be materially and adversely affected if the Company is unable to successfully manage the maturation of existing products and the introduction of new products.

***To the extent the Company seeks acquisition opportunities, it may not be able to make acquisitions of suitable candidates or integrate acquisitions successfully.***

To the extent the Company seeks acquisition opportunities to expand into new markets and to enhance its position in existing markets throughout the world, it may not be able to successfully identify suitable candidates, negotiate appropriate acquisition terms, obtain financing needed to consummate those acquisitions, complete proposed acquisitions or successfully integrate acquired businesses into its existing operations. In addition, any acquisition, once successfully integrated, may not perform as planned, be accretive to earnings, or otherwise prove beneficial to the Company.

Acquisitions involve numerous risks, including the assumption of undisclosed or unindemnified liabilities, difficulties in the assimilation of the operations and the transfer of all necessary licenses and permits, technologies, services and products of the acquired companies and the diversion of management's attention from other business concerns. In addition, prior acquisitions have resulted, and future acquisitions could result, in the incurrence of substantial additional indebtedness and other expenses.

***If the Company is unable to keep and protect its intellectual property rights, the Company's ability to compete may be negatively impacted.***

The Company's patents and other intellectual property may not prevent competitors from independently developing or selling similar or duplicative products and services, and there can be no assurance that the resources the Company invests to protect its

intellectual property will be sufficient or that the Company's intellectual property portfolio will adequately deter misappropriation or improper use of its technology. The Company could also face competition in some countries where it has not invested in an intellectual property portfolio, or where intellectual property rights are more difficult to obtain and/or assert. In addition, the Company may be the target of aggressive and opportunistic enforcement of patents by third parties, including non-practicing entities. Regardless of the merit of such claims, responding to infringement claims can be expensive and time-consuming. If the Company is found to infringe any third-party rights, it could be required to pay substantial damages or it could be enjoined from offering some of its products and services. Also, there can be no assurances that the Company will be able to obtain or renew from third parties the licenses it may need in the future, and there is no assurance that such licenses can be obtained on reasonable terms.

***The Company's results of operations may be adversely affected by international business risks, including fluctuations in currency exchange rates, legal restrictions and taxes.***

The Company has substantial operations outside the U.S. In the year ended December 31, 2017, the Company's sales outside of the U.S. constituted approximately 42 percent of the Company's net sales. In addition to the risks described in this Annual Report on Form 10-K that are common to both the Company's U.S. and non-U.S. operations, the Company faces, and will continue to face, risks related to the Company's foreign operations such as:

- variability of intellectual property laws outside the U.S. may impact enforceability and consistency of protection of intellectual property assets;
- high levels of inflation;
- fluctuations in foreign currency exchange rates may affect product demand and may adversely affect the profitability in U.S. Dollars of products and services the Company provides in international markets where payment for the Company's products and services is made in the local currency;
- political, economic, financial and market conditions may be unstable;
- changes in labor conditions and difficulties in staffing and managing international operations;
- differing economic cycles and adverse economic conditions;
- trade and currency restrictions, including tariffs and currency exchange controls imposed by foreign countries;
- changes in foreign laws and tax rates or U.S. laws and tax rates (including as a result of the implementation of recent U.S. federal income tax reform) with respect to foreign income may unexpectedly increase the rate at which the Company's income is taxed, impose new and additional taxes on remittances, repatriation or other payments by subsidiaries, or cause the loss of previously recorded tax benefits;
- greater difficulty enforcing contracts and collecting accounts receivable;
- enforceability and compliance with U.S. and foreign laws affecting operations outside of the U.S., including the Foreign Corrupt Practices Act (and foreign equivalents), export controls and regulations administered by the Office of Foreign Assets Control.
- evolving laws and regulations over chemicals and chemical production and transportation (including, but not limited to, the June 2016 amendments to the U.S. Toxic Substances Control Act, the EU REACH regulation and changing laws related to operating permits and licenses) that could result in material costs relating to regulatory compliance, liabilities, litigation proceedings, or other impacts, such as restrictions or prohibitions on our products.

The actual occurrence of any or all of the foregoing could have a material adverse effect on the Company's business, financial position, results of operations and cash flows in the future.

***Fluctuations in foreign currency exchange rates could affect Company financial results.***

The Company is also exposed to fluctuations in exchange rates. The Company's results of operations are reported in U.S. dollars. However, outside the U.S., the Company's sales and costs are denominated in a variety of currencies including the European euro, British pound, Canadian dollar, Mexican peso, Colombian peso, Philippine peso, Brazilian real, Polish zloty, Singapore dollar and Chinese RMB. The Company translates its local currency financial results into U.S. dollars based on average exchange rates prevailing during the reporting period or the exchange rate at the end of that period. During times of a strengthening U.S. dollar, the Company's reported international sales and earnings may be reduced because the local currency may translate into fewer U.S. dollars. Fluctuations in exchange rates may materially and adversely affect the Company's business, financial position, results of operations and cash flows.

In all jurisdictions in which the Company operates, the Company is also subject to laws and regulations that govern foreign investment, foreign trade and currency exchange transactions. These laws and regulations may limit the Company's ability to repatriate cash as dividends or otherwise to the U.S. or to efficiently allocate cash to support strategic initiatives, and may limit the Company's ability to convert foreign currency cash flows into U.S. dollars. A weakening of the currencies in which the Company generates sales relative to the foreign currencies in which the Company's costs are denominated may lower the Company's operating profits and cash flows.

***The international scope of the Company's operations and corporate structure may expose the Company to potentially adverse tax consequences.***

The Company is subject to taxation in and to the tax laws and regulations of multiple jurisdictions as a result of the international scope of its operations and corporate structure. The Company is also subject to intercompany pricing laws, including those relating to the flow of funds between its entities pursuant to, for example, purchase agreements, licensing agreements or other arrangements. Adverse developments in these laws or regulations (including pursuant to recent U.S. tax legislation, described below), or any change in position regarding the application, administration or interpretation of these laws or regulations in any applicable jurisdiction could have a material adverse effect on the Company's business, financial position, results of operations and cash flows. In addition, the tax authorities in any applicable jurisdiction may disagree with the positions the Company has taken or intends to take regarding the tax treatment or characterization of any of the Company's transactions, including the tax treatment or characterization of the Company's indebtedness. If any applicable tax authorities were to successfully challenge the tax treatment or characterization of any of the Company's transactions, it could result in the disallowance of deductions, the imposition of withholding taxes on internal deemed transfers or other consequences that could have a material adverse effect on the Company's business, financial position, results of operations and cash flows.

***Recent U.S. tax legislation may materially adversely affect our financial condition, results of operations and cash flows.***

Recently enacted U.S. tax legislation has significantly changed the U.S. federal income taxation of U.S. corporations, including by reducing the U.S. corporate income tax rate, adopting elements of a territorial tax system, imposing a one-time transition tax (Transition Tax) on all undistributed earnings and profits of certain U.S.-owned foreign corporations, introducing new anti-base erosion provisions, revising the rules governing net operating losses and the rules governing foreign tax credits, limiting interest deductions, permitting immediate expensing of certain capital expenditures, repealing the corporate alternative minimum tax, eliminating the domestic production activity deduction and repealing the deduction of certain performance-based compensation paid to an expanded group of executive officers. Many of these changes are effective immediately, without any transition periods or grandfathering for existing transactions. The legislation is unclear in many respects and could be subject to potential amendments and technical corrections, as well as interpretations and implementing regulations by the Treasury and Internal Revenue Service ("IRS"), any of which could lessen or increase certain adverse impacts of the legislation. In addition, it is unclear how these U.S. federal income tax changes will affect state and local taxation, which often uses federal taxable income as a starting point for computing state and local tax liabilities.

Our analysis and interpretation of this legislation is preliminary and ongoing. Based on our current evaluation, we estimate that the Transition Tax will result in a material amount of additional U.S. tax liability, the total amount of which must be reflected as tax expense in 2017, when the tax legislation was enacted, despite the fact that the resulting tax may be paid over eight years. Such tax expense may be subject to adjustment in subsequent periods throughout 2018 in accordance with recent interpretive guidance issued by the SEC. Further, the changes to the deductibility of performance-based compensation may negatively impact our cash flows going forward. Finally, there may be other material adverse effects resulting from the legislation that we have not yet identified.

While some of the changes made by the tax legislation may adversely affect the Company in one or more reporting periods and prospectively, other changes may be beneficial on a going forward basis. We continue to work with our tax advisors to determine the full impact that the recent tax legislation as a whole will have on us.

***The Company's failure to comply with the anti-corruption laws of the United States and various international jurisdictions could negatively impact its reputation and results of operations.***

Doing business on a worldwide basis requires the Company to comply with anti-corruption laws and regulations imposed by governments around the world with jurisdiction over our operations, which may include the U.S. Foreign Corrupt Practices Act ("FCPA") and the U.K. Bribery Act 2010 (the "Bribery Act"), as well as the laws of the countries where the Company does business. These laws and regulations can apply to companies and individual directors, officers, employees and agents, and may restrict the Company's operations, trade practices, investment decisions and partnering activities. Where they apply, the FCPA and the Bribery Act prohibit, among other things, the Company and its officers, directors, employees and business partners, including joint venture partners and agents acting on the Company's behalf, from corruptly offering, promising, authorizing or providing anything of value to

“foreign officials” for the purposes of influencing official decisions or obtaining or retaining business or otherwise obtaining favorable treatment. The Bribery Act also prohibits non-governmental “commercial” bribery and accepting bribes. Part of the Company’s business may involve dealings with governments and state-owned business enterprises, the employees and representatives of which may be considered “foreign officials” for purposes of the FCPA and the Bribery Act. The Company is also subject to the jurisdiction of various governments and regulatory agencies around the world, which may bring Company personnel and agents into contact with “foreign officials” responsible for issuing or renewing permits, licenses, or approvals or for enforcing other governmental regulations. The Company’s global operations, including in countries with high levels of perceived corruption, expose it to the risk of violating, or being accused of violating, anti-corruption laws. Any failure on the part of the Company to successfully comply with these laws and regulations may expose the Company to reputational harm as well as significant sanctions, including criminal fines, imprisonment of its employees or representatives, civil penalties, disgorgement of profits, injunctions and debarment from government contracts, as well as other remedial measures. Investigations of alleged violations can be expensive and disruptive. Compliance with these laws can increase the cost of doing business globally. The Company maintains policies and procedures designed to assist the Company and its subsidiaries in complying with applicable anti-corruption laws. However, there can be no guarantee that these policies and procedures will effectively prevent violations by Company employees or representatives for which the Company may be held responsible, and any such violation could adversely affect the Company’s reputation, business, financial position and results of operations.

***The Company is subject to a variety of environmental, health and safety and product registration laws dealing with the production and sale of chemicals that could require us to incur additional costs or to reformulate or discontinue certain of our products.***

The Company’s operations are regulated under a number of federal, state, local and foreign environmental, health and safety laws and regulations that govern, among other things, the production and marketing of chemical substances and discharge, use, handling, transport, storage and disposal of hazardous materials into the air, soil and water. In the U.S., these laws and regulations include, but are not limited to, the Toxic Substances Control Act (TSCA), the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), the Clean Air Act, the Clean Water Act, the Resource Conservation and Recovery Act, the Comprehensive Environmental Response, Compensation and Liability Act and state and local laws, such as California’s Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65). Analogous laws outside the U.S. apply to us in many jurisdictions, including, among others, the European Union’s Registration, Evaluation, Authorization and Restriction of Chemical Substances Act (REACH) regulation and its Biocidal Products Regulation. Compliance with these environmental laws and regulations is a major consideration for the Company, and to comply with some of these laws, we may need to alter our product lines, which could lead to a material adverse effect on our results of operations. In addition, the transportation of certain raw materials is highly regulated and is subject to increased regulation or restrictions. These regulations may restrict or prohibit transport of these raw materials, resulting in these raw materials not being available to the Company in quantities desired by the Company or at costs attractive to the Company, which may restrict or substantially limit the Company’s manufacturing operations.

Under the REACH regulation, we must submit registrations for certain substances between now and June 1, 2018, and may need to update previously submitted registrations for other substances. The costs associated with these registrations and updates could be substantial. Moreover, if a registration was, or in the future is, not submitted by any applicable deadline, our ability to sell those products may be negatively impacted until the registration process has been completed. In addition, we manufacture, process and/or use substances being evaluated under the REACH regulation’s Substances of Very High Concern (SVHC) program. Impacts under this program could include requirements to discontinue certain product lines and to reformulate others, which could materially alter our marketplace position or otherwise have a material financial effect on our revenues. Some of the laws and regulations applicable to us have changed in recent years to impose new obligations that could also force us to reformulate or discontinue certain of our products. For example, the European Union is now requiring a review of existing active biocide substances, and based on this review, the European Commission or an individual member state may decide not to authorize the product for continued sale. As another example, the June 2016 amendments to TSCA now mandate that the U.S. Environmental Protection Agency must designate “high priority” chemicals and perform a risk evaluation, which could result in a finding of “unreasonable risk” and a decision to promulgate new regulations to address such risk.

Compliance with environmental laws could restrict the Company’s ability to expand its facilities or require the Company to modify its facilities and processes or acquire additional costly pollution control equipment, incur other significant expenses, or expose the Company to greater liability associated with its production processes and products. The Company has incurred and will continue to incur capital expenditures and operating costs in complying with these laws and regulations. In addition, our operations currently use, and have historically used, hazardous materials and generate, and have historically generated, quantities of hazardous waste. We are subject to regulatory oversight and investigation, remediation, and monitoring obligations at certain current and former U.S. Superfund sites, as well as third-party disposal sites, under federal laws and their state and local analogues, including the Resource Conservation and Recovery Act (RCRA), the Clean Water Act, the Clean Air Act, and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as well as analogous foreign laws. In the event that new contamination is discovered, the Company may become subject to obligations. The costs and liabilities associated with these issues may be substantial and may materially impact the financial health of the Company.

The Company is also subject to numerous federal, state, local and foreign laws that regulate the manufacture, storage, distribution and labeling of many of the Company's products, including some of the Company's disinfecting, sanitizing and antimicrobial products. Some of these laws require the Company to have operating permits for the Company's production facilities, warehouse facilities and operations. Various federal, state, local and foreign laws and regulations also require the Company to register the Company's products and to comply with specified requirements with respect to those products. Additionally, those requirements, and enforcement of those requirements, may become more stringent in the future. The ultimate cost of compliance with any such requirements could be material.

Although it is our policy to comply with such laws and regulations, it is possible that we have not been or may not be at all times in material compliance with all of those requirements. If the Company fails to comply with any of these laws and regulations, including permitting and licensing requirements, it may be liable for damages and the costs of remedial actions in excess of the Company's recorded liabilities, and may also be subject to fines, injunctions or criminal sanctions or to revocation, non-renewal or modification of the Company's operating permits and revocation of the Company's product registrations. Any such revocation, modification or non-renewal may require the Company to cease or limit the manufacture and sale of its products at one or more of the Company's facilities, which may limit or prevent the Company's ability to meet product demand or build new facilities and may have a material adverse effect on the Company's business, financial position, results of operations and cash flows. Any such revocation, non-renewal or modification may also result in an event of default under the indenture for the Company's notes or under the Company's credit facilities, which, if not cured or waived, may result in the acceleration of all the Company's indebtedness.

In addition to the costs of complying with environmental, health and safety requirements, the Company has incurred and may incur in the future costs defending against environmental litigation and/or investigations brought by government agencies and private parties, including administrative proceedings. The Company is, and may be in the future, a defendant in lawsuits brought by parties alleging environmental damage, personal injury or property damage. A significant judgment or settlement, to the extent not covered by existing insurance policies, against the Company could have a material adverse effect on its business, financial position, results of operations and cash flows. Although the Company has insurance that may cover some of these potential losses, there is always uncertainty as to whether such insurance may be available to the Company based on case-specific factors and the specific provisions of the Company's insurance policies.

The potential cost to the Company relating to environmental, health and safety and product registration matters is uncertain due to factors such as the complexity and evolving nature of laws and regulations relating to the environment, health and safety and product registration, including those outside of the U.S. Environmental and product registration laws may also become more stringent over time, imposing greater compliance costs and increasing risks and penalties associated with any violation, as well as restricting or prohibiting the sale of existing or new products, which may also negatively impact the Company's operating results. Without limiting the foregoing, these laws or regulations may restrict or prohibit the use of non-renewable or carbon-based substances, or impose fees or penalties for the use of these substances. Accordingly, the Company may become subject to additional liabilities and increased operating costs in the future under these laws and regulations. The impact of any such changes, which are unknown at this time, may have a material adverse effect on the Company's business, financial position, results of operations and cash flows.

***The Company's inability to accurately estimate and maintain appropriate levels of recorded liabilities for existing and future contingencies may materially and adversely affect the Company's business, financial position, results of operations and cash flows.***

The liabilities recorded by the Company for pending and threatened legal proceedings are estimates based on various assumptions. An adverse ruling or external forces, such as changes in the rate of inflation, the regulatory environment and other factors that could prove such assumptions to be no longer appropriate, may affect the accuracy of these estimates. Given the uncertainties inherent in such estimates, the Company's actual liabilities could differ significantly from the estimated amounts the Company records in its financial statements with respect to existing and future contingencies. If the Company's actual liability is higher than estimated or any new legal proceeding is initiated or other contingency occurs, it could materially and adversely affect the Company's business, financial position, results of operations and cash flows.

***The Company has a significant amount of indebtedness and may incur additional indebtedness, or need to refinance existing indebtedness, in the future, which may adversely affect the Company's business, financial position, results of operations and cash flows.***

The Company has a significant amount of indebtedness and may incur additional indebtedness in the future. As of December 31, 2017, the Company had \$290.8 million of debt on its balance sheet. U.S. debt included \$289.0 million in unsecured promissory notes with maturities extending from 2018 until 2027. In addition, on December 31, 2017 the Company was party to a \$125 million credit facility. On January 30, 2018, the Company entered into a \$350 million five-year credit facility replacing the prior facility.

Certain of the Company's foreign subsidiaries also maintain bank term loans and short-term bank lines of credit in their respective countries to meet working capital requirements as well as to fund capital expenditure programs and acquisitions. As of December 31, 2017, the Company's foreign subsidiaries' aggregate outstanding debt totaled \$ 1.8 million.

The Company's current indebtedness and any additional indebtedness incurred in the future may materially and adversely affect its business, financial position, results of operations and cash flows. For example, such indebtedness could:

- require the Company to dedicate a substantial portion of cash flow from operations to pay principal and interest on the Company's debt, which would reduce funds available to fund future working capital, capital expenditures and other general operating requirements;
- limit the Company's ability to borrow funds that may be needed to operate and expand its business;
- limit the Company's flexibility in planning for or reacting to changes in the Company's business and the industries in which the Company operates;
- increase the Company's vulnerability to general adverse economic and industry conditions or a downturn in the Company's business; and
- place the Company at a competitive disadvantage compared to its competitors that have less debt.

The Company's loan agreements contain provisions, which, among others, require maintenance of certain financial ratios and place limitations on additional debt, investments and payment of dividends. Failure to comply with these loan agreements would require debt restructuring that could be materially adverse to the Company's financial position, results of operations and cash flows.

An increase in interest rates could limit the ability of the Company to incur additional debt to fund the Company's strategic plans or to refinance maturing debt without incurring significant additional cost, and could make borrowings under the Company's credit facility or other floating rate debt materially more expensive. Additionally, any future disruptions in the credit and financial markets may reduce the availability of debt financing or refinancing and increase the costs associated with such financing. If the Company is unable to secure financing on satisfactory terms, or at all, its business financial position, results of operations and cash flows may be materially and adversely affected.

***The Company could be adversely affected by downgrades to its credit ratings or disruptions in its ability to access well-functioning capital markets.***

Historically, the Company has relied on the debt capital markets to fund portions of its capital investments and access to bank credit facilities as part of its working capital management strategy. The Company's continued access to these markets, and the terms of such access, depend on multiple factors including the condition of debt capital markets, the Company's operating performance, and its credit ratings. These ratings are based on a number of factors, which include rating agencies' assessment of the Company's financial strength and financial policies. There can be no assurance that any particular rating assigned to the Company will remain in effect for any given period of time or that a rating will not be changed or withdrawn by a rating agency, if in that rating agency's judgment, future circumstances relating to the basis of the rating so warrant. Incurrence of additional debt by the Company could adversely affect its credit ratings. The Company depends on banks and other financial institutions to provide credit to its business and perform under the Company's agreements with them. Defaults by one or more of these counterparties on their obligations to the Company could materially and adversely affect it. Any downgrade of the Company's credit ratings could materially adversely affect its cost of funds, liquidity, competitive position and access to capital markets and increase the cost of and counterparty risks associated with existing facilities, which could materially and adversely affect Company business operations, financial condition, and results of operations.

***Downturns in certain industries and general economic downturns may have an adverse effect on the Company's business, financial position, results of operations and cash flows.***

Economic downturns may adversely affect users of some end products that are manufactured using the Company's products and the industries in which such end products are used. These users may reduce their volume of purchases of such end products during economic downturns, which would reduce demand for the Company's products. Additionally, uncertain conditions in the credit markets pose a risk to the overall economy that may impact consumer and customer demand of some of the Company's products, as well as the Company's ability to manage normal commercial relationships with its customers, suppliers and creditors. Some of the Company's customers may not be able to meet the terms of sale and suppliers may not be able to fully perform their contractual obligations due to tighter credit markets or a general slowdown in economic activity.

In the event that economic conditions worsen or result in a prolonged downturn or recession, the Company's business, financial position, results of operations and cash flows may be materially and adversely affected.

***Conflicts, military actions, terrorist attacks and general instability, particularly in certain energy-producing nations, along with increased security regulations related to our industry, could adversely affect the Company's business.***

Conflicts, military actions and terrorist attacks have precipitated economic instability and turmoil in financial markets. Instability and turmoil, particularly in energy-producing nations, may result in raw material cost increases. The uncertainty and economic disruption resulting from hostilities, military action or acts of terrorism may impact any or all of the Company's facilities and operations or those of its suppliers or customers. Accordingly, any conflict, military action or terrorist attack that impacts the Company or any of its suppliers or customers, could have a material adverse effect on the Company's business, results of operations, financial position, results of operations and cash flows.

***Cost overruns, delays and miscalculations in capacity needs with respect to the Company's expansion or other capital projects could adversely affect the Company's business, financial position, results of operations and cash flows.***

From time to time, the Company initiates expansion and other significant capital projects. Projects of this type are subject to risks of delay or cost overruns inherent in any large construction project resulting from numerous factors, including the following: shortages of equipment, materials or skilled labor; work stoppages; unscheduled delays in the delivery of ordered materials and equipment; unanticipated cost increases; difficulties in obtaining necessary permits or in meeting permit conditions; difficulties in meeting regulatory requirements or obtaining regulatory approvals; availability of suppliers to certify equipment for existing and enhanced regulations; design and engineering problems; and failure or delay of third party service providers, civil unrest and labor disputes. Significant cost overruns or delays in completing a project could have a material adverse effect on the Company's return on investment, results of operations and cash flows. In addition, if the Company misjudges its future capacity needs, this too could negatively impact its operations, financial condition and results of operations.

***The Company relies extensively on information technology (IT) systems to conduct its business. Interruption of, damage to or compromise of the Company's IT systems and failure to maintain the integrity of customer, colleague or Company data could harm the Company's reputation and have an adverse effect on the Company's business, financial position, results of operations and cash flows.***

The Company relies on IT systems in its operations, including production, supply chain, research and development, finance, human resource and regulatory functions. The Company's ability to effectively manage its business depends on the security, reliability and adequacy of these systems. IT system failures due to events including but not limited to network disruptions, programming errors, computer viruses and security breaches (e.g., cyber-attacks) could impact production activities, impede shipment of products, cause delays or cancellations of customer orders, or hamper the processing of transactions or reporting of financial results. These or similar occurrences, whether accidental or intentional, could result in theft, unauthorized use or publication of our intellectual property and/or confidential business information, which could harm our reputation and competitive position, reduce the value of our investment in research and development and other strategic initiatives, result in a loss of business, as well as remedial and other costs, fines, investigations, enforcement actions or lawsuits or otherwise adversely affect our business.

The Company continues to develop and enhance controls and security measures to protect against the risk of theft, loss or fraudulent or unlawful use of customer, colleague or company data, and it maintains an ongoing process to re-evaluate the adequacy of its controls and measures. The Company may also be required to expend additional resources to continue to enhance its information privacy and security measures and/or to investigate and remediate any information security vulnerabilities. The Company maintains what it believes to be adequate and collectible insurance in the event of the theft, loss, fraudulent or unlawful use of customer, colleague or company data, but any such occurrences could result in costs which may not be covered or may be in excess of any available insurance that the Company may have procured. While the Company has a comprehensive program in place for continuously reviewing, maintaining, testing and upgrading its IT systems and security, there can be no assurance that such efforts will prevent breakdowns or breaches in Company systems that could adversely affect the Company's business, financial position, results of operations and cash flows.

***Various liability claims could materially and adversely affect the Company's financial position, operating results and cash flows.***

The Company may be required to pay for losses or injuries purportedly caused by its products. The Company faces an inherent exposure to various types of claims including general liability, product liability, product recall, toxic tort and environmental ("claims"), among others, if its products, or the end products that are manufactured with the Company's products, result in property damage, injury or death. In addition, because the Company conducts business in multiple jurisdictions, the Company also faces an inherent exposure to other general claims based on its operations in those jurisdictions and the laws of those jurisdictions, including but not

limited to claims arising from its relationship with employees, distributors, agents and customers, and other parties with whom it has a business relationship, directly or indirectly. Many of these claims may be made against the Company even if there is no evidence of a loss from that claim, and these claims may be made by individual persons, groups of persons, or groups of plaintiffs in a class action. Defending these claims could result in significant legal expenses relating to defense costs and/or damage awards and diversion of management's time and the Company's resources. Any claim brought against the Company could materially and adversely affect the Company's business financial position, results of operations and cash flows.

***The Company's success depends on its executive management and other key personnel.***

The Company's future success depends to a significant degree on the skills, experience and efforts of its executive management and other key personnel and their ability to provide the Company with uninterrupted leadership and direction. The availability of highly qualified talent is limited, and the competition for talent is robust and the Company may not be able to recruit and retain the personnel it needs if it were to lose an existing member of senior management. The Company's future success will depend on its ability to have adequate succession plans in place and to attract, retain and develop qualified personnel. A failure to efficiently replace executive management members and other key personnel and to attract, retain and develop new qualified personnel could have an adverse effect on the Company's business financial position, results of operations and cash flows.

**Item 1B. Unresolved Staff Comments**

None



## Item 2. Properties

The following are the Company's principal plants and other important physical properties. Unless otherwise noted, the listed properties are owned by the Company. Management believes that the facilities are suitable and adequate for the Company's current operations.

|     | Name of Facility   | Location   | Site Size                              | Segment                             |
|-----|--|--|--|-------------------------------------|
| 1.  | Millsdale  | Millsdale (Joliet), Illinois                         | 492 acres                              | Surfactants/Polymers                |
| 2.  | Fieldsboro   | Fieldsboro,<br>New Jersey                            | 45 acres                               | Surfactants                         |
| 3.  | Anaheim  | Anaheim,<br>California                               | 8 acres                                | Surfactants                         |
| 4.  | Winder   | Winder,<br>Georgia                                   | 202 acres                              | Surfactants                         |
| 5.  | Maywood  | Maywood,<br>New Jersey                               | 19 acres                               | Surfactants /<br>Specialty Products |
| 6.  | Columbus   | Columbus, Georgia                                    | 29.8 acres                             | Polymers                            |
| 7.  | Pasadena   | Pasadena, Texas                                      | 50 acres                               | Surfactants                         |
| 8.  | Stepan France  | Voreppe, France                                      | 20 acres                               | Surfactants                         |
| 9.  | Stepan Mexico  | Matamoros,<br>Mexico                                 | 13 acres                               | Surfactants                         |
| 10. | Stepan Germany   | Wesseling,<br>Germany                                | 12 acres                               | Surfactants/Polymers                |
| 11. | Stepan UK  | Stalybridge,<br>United Kingdom                       | 11 acres                               | Surfactants                         |
| 12. | Stepan Colombia  | Manizales,<br>Colombia                               | 5 acres                                | Surfactants                         |
| 13. | Stepan China   | Nanjing, China (Nanjing<br>Chemical Industrial Park) | 13 acres (right of use<br>arrangement) | Polymers                            |
| 14. | Stepan Brazil  | Vespasiano, Minas Gerais, Brazil                     | 27 acres                               | Surfactants                         |
| 15. | Tebras Tensoativos Do Brasil Ltda. and<br>PBC Industria Quimica Ltda.              | Salto, Sao Paulo, Brazil                             | 7 acres                                | Surfactants                         |
| 16. | Stepan Philippines   | Bauan, Batangas, Philippines                         | 9 acres (leased)                       | Surfactants                         |
| 17. | Stepan Poland  | Brzeg Dolny, Poland                                  | 4 acres (perpetual use right)          | Polymers                            |
| 18. | Stepan Asia  | Jurong Island, Singapore                             | 8 acres (leased)                       | Surfactants                         |
| 19. | Company Headquarters and Central<br>Research Laboratories                          | Northfield,<br>Illinois                              | 8 acres                                | N/A                                 |
| 20. | Company Corporate Supply Chain,<br>Human Resources, Legal and Finance<br>Functions | Northbrook,<br>Illinois                              | 3.25 acres                             | N/A                                 |

## Item 3. Legal Proceedings

There are a variety of legal proceedings pending or threatened against the Company that occur in the normal course of the Company's business, the majority of which relate to environmental matters. Some of these proceedings may result in fines, penalties, judgments or costs being assessed against the Company at some future time. The Company's operations are subject to extensive local, state and federal regulations, including the U.S. Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) and the Superfund amendments of 1986 (Superfund) as well as comparable regulations applicable to the Company's foreign locations. Over the years, the Company has received requests for information relative to or has been named by government authorities as a potentially responsible party (PRP) at a number of sites where cleanup costs have been or may be incurred under CERCLA and similar state statutes. In addition, damages are being claimed against the Company in general liability actions for alleged personal injury or property damage in the case of some disposal and plant sites. The Company believes that it has made adequate provisions for the costs it may incur with respect to these sites. For most of these sites, the involvement of the Company is expected to be minimal. Material legal proceedings are described below:

### ***Maywood, New Jersey Site***

The Company's property in Maywood, New Jersey and property formerly owned by the Company adjacent to its current site and other nearby properties (Maywood site) were listed on the National Priorities List in September 1993 pursuant to the provisions of CERCLA because of certain alleged chemical contamination. Pursuant to an Administrative Order on Consent entered into between the U.S. Environmental Protection Agency (USEPA) and the Company for property formerly owned by the Company, and the issuance of an order by USEPA to the Company for property currently owned by the Company, the Company has completed various Remedial Investigation Feasibility Studies (RI/FS), and on September 24, 2014, USEPA issued its Record of Decision (ROD) for chemically-contaminated soil. USEPA has not yet issued a ROD for chemically-contaminated groundwater for the Maywood site. Based on the most current information available, the Company believes its recorded liability represents its best estimate of the cost of remediation for the Maywood site. The best estimate of the cost of remediation for the Maywood site could change as the Company continues to hold discussions with USEPA, as the design of the remedial action progresses, if a groundwater ROD is issued or if other PRPs are identified. The ultimate amount for which the Company is liable could differ from the Company's current recorded liability.

In April 2015, the Company entered into an Administrative Settlement Agreement and Administrative Order on Consent with USEPA which requires payment of certain costs and performance of certain investigative and design work for chemically-contaminated soil. Based on the Company's review and analysis of this order, no changes to the Company's current recorded liability for claims associated with soil remediation of chemical contamination were required.

In addition, under the terms of a settlement agreement reached on November 12, 2004, the United States Department of Justice and the Company agreed to fulfill the terms of a Cooperative Agreement reached in 1985 under which the United States will take title to and responsibility for radioactive waste removal at the Maywood site, including past and future remediation costs incurred by the United States. As such, the Company recorded no liability related to this settlement agreement.

### ***D'Imperio Property Site***

During the mid-1970's, Jerome Lightman and the Lightman Drum Company disposed of hazardous substances at several sites in New Jersey. The Company was named as a PRP in a lawsuit in the U.S. District Court for the District of New Jersey that involved the D'Imperio Property Site located in New Jersey. In 2016, the PRPs were provided with updated remediation cost estimates which were considered in the Company's determination of its range of estimated possible losses and liability balance. The changes in range of possible losses and liability balance were immaterial. Remediation work is continuing at this site. Based on current information, the Company believes that its recorded liability represents its best estimate of the cost of remediation for the D'Imperio site. Depending on the ultimate cost of the remediation at this site, the amount for which the Company is liable could differ from the current estimates.

### ***Wilmington Site***

The Company is currently contractually obligated to contribute to the response costs associated with the Company's formerly-owned site in Wilmington, Massachusetts. Remediation at this site is being managed by its current owner, to whom the Company sold the property in 1980. Under the agreement, once total site remediation costs exceed certain levels, the Company is obligated to contribute up to five percent of future response costs associated with this site with no limitation on the ultimate amount of contributions. The Company had paid the current owner \$2.5 million for the Company's portion of environmental response costs through December 31, 2017. The Company has recorded a liability for its portion of the estimated remediation costs for the site. Depending on the ultimate cost of the remediation at this site, the amount for which the Company is liable could differ from the current estimates.

The Company and other prior owners also entered into an agreement in April 2004 waiving certain statute of limitations defenses for claims which may be filed by the Town of Wilmington, Massachusetts, in connection with this site. While the Company has denied any liability for any such claims, the Company agreed to this waiver while the parties continue to discuss the resolution of any potential claim which may be filed.

The Company believes that based on current information it has adequate reserves for the claims related to this site. However, depending on the ultimate cost of the remediation at this site, the amount for which the Company is liable could differ from the current estimates.

**Federal Insecticide, Fungicide and Rodenticide Act**

On March 22, 2017, the Company received a pre-filing notice from USEPA for alleged violations of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) associated with three of the Company's biocide products sold by a licensed distributor. On January 9, 2018, USEPA issued a Consent Agreement and Final Order (CAFO) to the Company for the alleged FIFRA violations. The CAFO assessed a civil penalty of \$131,440, which the Company paid on January 16, 2018.

**Other Matters**

The Company has been named as a de minimis PRP at other sites, and as such the Company believes that a resolution of its liabilities will not have a material impact on the financial position, results of operations or cash flows of the Company.

**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**

(a) The Company’s common stock is listed and traded on the New York Stock Exchange. As of the close of trading on January 31, 2018, the market price for the Company’s common stock was \$78.42. See the table below for New York Stock Exchange quarterly market price information.

| Quarter | <i>Quarterly Stock Data</i> |          |          |          |
|---------|-----------------------------|----------|----------|----------|
|         | <i>Stock Price Range</i>    |          |          |          |
|         | 2017                        |          | 2016     |          |
|         | High                        | Low      | High     | Low      |
| First   | \$ 82.93                    | \$ 68.51 | \$ 56.50 | \$ 41.42 |
| Second  | \$ 90.66                    | \$ 75.38 | \$ 63.32 | \$ 54.00 |
| Third   | \$ 92.97                    | \$ 75.36 | \$ 73.90 | \$ 56.89 |
| Fourth  | \$ 89.18                    | \$ 77.79 | \$ 87.00 | \$ 67.85 |
| Year    | \$ 92.97                    | \$ 68.51 | \$ 87.00 | \$ 41.42 |

On February 19, 2013, the Company’s Board of Directors authorized the Company to repurchase up to 1,000,000 shares of its outstanding common stock. During 2017, 57,963 shares of Company common stock were purchased in the open market and 18,827 shares of Company common stock were purchased from the Company’s retirement plans. These shares were recorded as treasury stock in the Company’s balance sheet. At December 31, 2017, 641,139 shares remained available for repurchase under the February 19, 2013, authorization. The timing and amount of the repurchases are determined by the Company’s management based on its evaluation of market conditions and share price. Shares will be repurchased with cash in open market or private transactions in accordance with applicable securities and stock exchange rules.

(b) On January 31, 2018, there were 1,674 holders of record of the Company’s common stock.

(c) Below is a summary by month of shares purchases by the Company during the fourth quarter of 2017:

| Period   | Total Number of Shares Purchased | Average Price Paid per Share | Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs | Maximum Number of Shares that May Yet Be Purchased Under the Plans or Programs |
|----------|----------------------------------|------------------------------|--|--|
| October  | 349 (a)                          | \$ 87.50                     | —  | —  |
| November | 18,827 (b)                       | \$ 79.67                     | —  | —  |
| December | —                                | —                            | —  | —  |
| Total    | 19,176                           | \$ 79.81                     | —  | —  |

(a) Represents shares tendered by employees to settle statutory withholding taxes related to the distribution of restricted stock awards.

(b) Represents purchase of shares from the Company’s retirement plans.

(d) See the table below for quarterly dividend information.

***Dividends Declared Per Common Share***

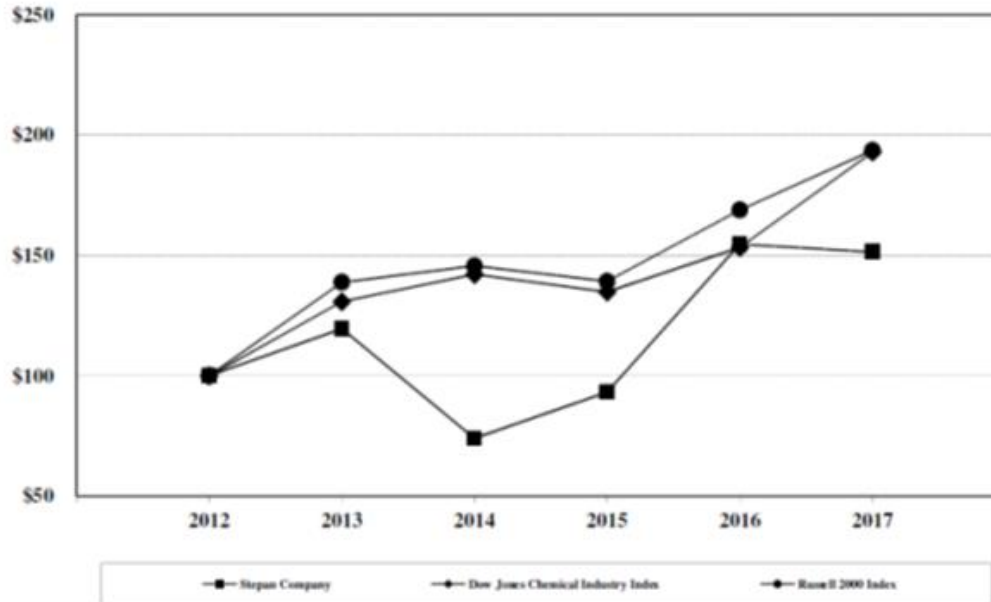
| Quarter | 2017    | 2016    |
|---------|---------|---------|
| First   | \$ 0.21 | \$ 0.19 |
| Second  | \$ 0.21 | \$ 0.19 |
| Third   | \$ 0.21 | \$ 0.19 |
| Fourth  | \$ 0.23 | \$ 0.21 |
| Year    | \$ 0.86 | \$ 0.78 |

The Company has increased its dividends for 50 consecutive years.

The Company has material debt agreements that restrict the payment of dividends. See the Liquidity and Financial Condition section of Part II, Item 7, Management's Discussion and Analysis, for a description of the restrictions. See also Note 6, Debt, of the consolidated financial statements (Item 8 of this Form 10-K) for the amount of retained earnings available for dividend distribution at December 31, 2017.

(e) Stock Performance Graph

The following stock performance graph compares the yearly change since December 31, 2012, in cumulative return on the common stock of the Company on a dividend reinvested basis to the Dow Jones Chemical Industry Index and the Russell 2000 Index. The Dow Jones Chemical Industry Index is a market-capitalization weighted grouping of 35 chemical companies, including major manufacturers of both basic and specialty products. The Company is not included in the Dow Jones Chemical Industry Index. The Russell 2000 Index is a market-capitalization weighted grouping of 2,000 small to medium sized companies in a broad range of industries. The Company has been included in the Russell 2000 Index since 1992. The graph assumes \$100 was invested on December 31, 2012, and shows the cumulative total return as of each December 31 thereafter.



\* Assumes \$100.00 invested on December 31, 2012, in Stepan Company Stock, Dow Jones Chemical Industry Index and Russell 2000 Index.

**Item 6. Selected Financial Data***(In thousands, except per share data)*

| <i>For the Year</i>   | <i>2017</i>  | <i>2016</i>  | <i>2015</i>  | <i>2014</i>  | <i>2013</i>  |
|---|--------------|--------------|--------------|--------------|--------------|
| Net Sales   | \$ 1,925,007 | \$ 1,766,166 | \$ 1,776,167 | \$ 1,927,213 | \$ 1,880,786 |
| Operating Income  | 146,160      | 126,193      | 122,790      | 90,694       | 109,153      |
| Percent of Net Sales  | 7.6%         | 7.1%         | 6.9%         | 4.7%         | 5.8%         |
| Income Before Provision for Income Taxes                    | 139,237      | 113,816      | 102,856      | 75,535       | 95,630       |
| Percent of Net Sales  | 7.2%         | 6.4%         | 5.8%         | 3.9%         | 5.1%         |
| Provision for Income Taxes                                  | 47,690       | 27,618       | 26,819       | 18,454       | 23,293       |
| Net Income Attributable to Stepan Company                   | 91,578       | 86,191       | 75,968       | 57,101       | 72,828       |
| Per Diluted Share   | 3.92         | 3.73         | 3.32         | 2.49         | 3.18         |
| Percent of Net Sales  | 4.8%         | 4.9%         | 4.3%         | 3.0%         | 3.9%         |
| Percent to Total Stepan Company<br>Stockholders' Equity (a) | 13.3%        | 14.5%        | 13.9%        | 10.5%        | 14.1%        |
| Cash Dividends Paid   | 18,907       | 17,329       | 16,300       | 15,387       | 14,474       |
| Per Common Share  | 0.8600       | 0.7800       | 0.7300       | 0.6900       | 0.6500       |
| Depreciation and Amortization                               | 79,022       | 74,967       | 66,985       | 63,804       | 56,400       |
| Capital Expenditures  | 78,613       | 103,076      | 119,349      | 101,819      | 92,865       |
| Weighted-average Common Shares<br>Outstanding (Diluted)     | 23,377       | 23,094       | 22,858       | 22,917       | 22,924       |
| <i>As of Year End</i>                                       |              |              |              |              |              |
| Working Capital   | \$ 468,483   | \$ 388,276   | \$ 376,329   | \$ 326,043   | \$ 339,557   |
| Current Ratio   | 2.5          | 2.3          | 2.5          | 2.3          | 2.3          |
| Property, Plant and Equipment, Net                          | 598,443      | 582,714      | 555,463      | 524,195      | 494,042      |
| Total Assets  | 1,470,861    | 1,353,890    | 1,239,661    | 1,162,014    | 1,167,202    |
| Long-term Debt Obligations, Less Current<br>Maturities      | 268,299      | 288,859      | 313,817      | 246,897      | 235,246      |
| Total Stepan Company Stockholders' Equity                   | 740,096      | 634,604      | 556,984      | 535,546      | 552,286      |

(a) Based on average equity.

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

The following is management's discussion and analysis (MD&A) of certain significant factors that have affected the Company's financial condition and results of operations during the annual periods included in the accompanying consolidated financial statements.

### Overview

The Company produces and sells intermediate chemicals that are used in a wide variety of applications worldwide. The overall business comprises three reportable segments:

- **Surfactants** – Surfactants, which accounted for 68 percent of Company consolidated net sales in 2017, are principal ingredients in consumer and industrial cleaning products such as detergents for washing clothes, dishes, carpets, floors and walls, as well as shampoos and body washes. Other applications include fabric softeners, germicidal quaternary compounds, lubricating ingredients, emulsifiers for spreading agricultural products and industrial applications such as latex systems, plastics and composites. Surfactants are manufactured at five North American sites, three European sites (United Kingdom, France and Germany), four Latin American sites (Mexico, Colombia and two sites in Brazil) and two Asian sites (Philippines and Singapore). In 2016, the Company shut down its production facility in Canada, moving the production of goods previously manufactured in Canada to other Company North American production sites. Manufacturing operations at that facility ceased in the fourth quarter of 2016 but decommissioning activities continued throughout 2017. In October 2016, the Company's subsidiary in Brazil acquired the commercial business of Tebras Tensoativos do Brasil Ltda. (Tebras) and the sulfonation production facility of PBC Industria Quimica Ltda. (PBC). In late 2016, a major customer of the Company's Bahia, Brazil, plant exited the product line for which the Company was supplying them product. As a result, asset impairments were required in 2016 (see Note 22 to the consolidated financial statements for additional information).
- **Polymers** – Polymers, which accounted for 28 percent of consolidated net sales in 2017, include polyurethane polyols, polyester resins and phthalic anhydride. Polyurethane polyols are used in the manufacture of rigid foam for thermal insulation in the construction industry and are also a base raw material for coatings, adhesives, sealants and elastomers (collectively, CASE products). Powdered polyester resins are used in coating applications. CASE and polyester resins are collectively referred to as specialty polyols. Phthalic anhydride is used in unsaturated polyester resins, alkyd resins and plasticizers for applications in construction materials and components of automotive, boating and other consumer products. In addition, the Company uses phthalic anhydride internally in the production of polyols. In the United States, polyurethane polyols and phthalic anhydride are manufactured at the Company's Millsdale, Illinois, site and specialty polyols are manufactured at the Company's Columbus, Georgia, site. In Europe, polyurethane polyols are manufactured by the Company's subsidiary in Germany, and specialty polyols are manufactured by the Company's Poland subsidiary. In China, polyurethane polyols and specialty polyols are manufactured at the Company's Nanjing, China, manufacturing plant.
- **Specialty Products** – Specialty Products, which accounted for four percent of consolidated net sales in 2017, include flavors, emulsifiers and solubilizers used in food, flavoring, nutritional supplement and pharmaceutical applications. Specialty products are primarily manufactured at the Company's Maywood, New Jersey, site and, in some instances, at outside contractors.

### 2017 Acquisition Agreement

On June 13, 2017, the Company announced that it had reached an agreement with BASF Mexicana, S.A. DE C.V. (BASF) to acquire BASF's production facility in Ecatepec, Mexico, and a portion of its related surfactants business. The facility, which is near Mexico City, has over 50,000 metric tons of capacity, 124,000 square feet of warehouse space, a laboratory and office space. The acquisition is currently expected to be completed in 2018, subject to normal closing conditions, including necessary governmental consents. The acquisition supports the Company's growth strategy in Latin America. The Company believes this acquisition should enhance its market position and supply capabilities for surfactants in Mexico and positions the Company to grow in both the consumer and functional surfactants markets.

### Deferred Compensation Plans

The accounting for the Company's deferred compensation plans can cause period-to-period fluctuations in Company expenses and profits. Compensation expense results when the values of Company common stock and mutual fund investment assets held for the plans increase, and compensation income results when the values of Company common stock and mutual fund investment assets decline. The pretax effect of all deferred compensation-related activities (including realized and unrealized gains and losses on the mutual fund assets held to fund the deferred compensation obligations) and the income statement line items in which the effects of the activities were recorded are presented in the following table:

| <i>(In millions)</i>  | Income (Expense)<br>For the Year<br>Ended December 31 |           |           |
|---|---|-----------|-----------|
|   | 2017  | 2016      | Change    |
|   | Deferred Compensation (Operating expenses)            | \$ (4.8)  | \$ (16.8) |
| Investment Income (Other, net)                                    | 0.9   | 0.6       | 0.3       |
| Realized/Unrealized Gains (Losses) on Investments<br>(Other, net) | 4.0   | 0.1       | 3.9       |
| Pretax Income Effect  | \$ 0.1  | \$ (16.1) | \$ 16.2   |

| <i>(In millions)</i>                                     | Income (Expense)<br>For the Year<br>Ended December 31 |           |           |
|--|---|-----------|-----------|
|  | 2016  | 2015      | Change    |
|  | Deferred Compensation (Operating expenses)            | \$ (16.8) | \$ (6.5)  |
| Investment Income (Other, net)                           | 0.6   | 0.8       | (0.2)     |
| Realized/Unrealized Gains on Investments<br>(Other, net) | 0.1   | 0.1       | —         |
| Pretax Income Effect                                     | \$ (16.1)   | \$ (5.6)  | \$ (10.5) |

(1) See the applicable Corporate Expenses section of this MD&A for details regarding the period-to-period changes in deferred compensation.

Below are the year-end Company common stock market prices used in the computation of deferred compensation income and expense:

|                     | December 31 |          |          |          |
|---------------------|-------------|----------|----------|----------|
|                     | 2017        | 2016     | 2015     | 2014     |
| Company Stock Price | \$ 78.97    | \$ 81.48 | \$ 49.69 | \$ 40.08 |

#### Effects of Foreign Currency Translation

The Company's foreign subsidiaries transact business and report financial results in their respective local currencies. As a result, foreign subsidiary income statements are translated into U.S. dollars at average foreign exchange rates appropriate for the reporting period. Because foreign exchange rates fluctuate against the U.S. dollar over time, foreign currency translation affects year-over-year comparisons of financial statement items (i.e., because foreign exchange rates fluctuate, similar year-to-year local currency results for a foreign subsidiary may translate into different U.S. dollar results). The following tables present the effects that foreign currency translation had on the year-over-year changes in consolidated net sales and various income line items for 2017 compared to 2016 and 2016 compared to 2015:

| <i>(In millions)</i> | For the Year Ended<br>December 31 |            | Increase<br>(Decrease) | Increase Due<br>to Foreign Currency<br>Translation |
|----------------------|-----------------------------------|------------|------------------------|--|
|                      | 2017                              | 2016       |                        |  |
| Net Sales            | \$ 1,925.0                        | \$ 1,766.2 | \$ 158.8               | \$ 9.9   |
| Gross Profit         | 338.3                             | 338.5      | (0.2)                  | 2.6  |
| Operating Income     | 146.2                             | 126.2      | 20.0                   | 1.7  |
| Pretax Income        | 139.2                             | 113.8      | 25.4                   | 1.6  |

| <i>(In millions)</i> | For the Year Ended<br>December 31 |            | Increase<br>(Decrease) | (Decrease) Due<br>to Foreign Currency<br>Translation |
|----------------------|-----------------------------------|------------|------------------------|--|
|                      | 2016                              | 2015       |                        |  |
| Net Sales            | \$ 1,766.2                        | \$ 1,776.2 | (10.0)                 | \$ (42.9)  |
| Gross Profit         | 338.5                             | 308.2      | 30.3                   | (5.9)  |
| Operating Income     | 126.2                             | 122.8      | 3.4                    | (3.7)  |
| Pretax Income        | 113.8                             | 102.9      | 10.9                   | (3.6)  |



## Results of Operations

### 2017 Compared with 2016

#### Summary

Net income attributable to the Company for 2017 increased six percent to \$91.6 million, or \$3.92 per diluted share, from \$86.2 million, or \$3.73 per diluted share, for 2016. Adjusted net income increased 11 percent to \$108.7 million, or \$4.65 per diluted share, from \$98.2 million, or \$4.25 per diluted share in 2016 (see the “Reconciliations of Non-GAAP Adjusted Net Income and Diluted Earnings per Share” section of this MD&A for reconciliations between reported net income attributable to the Company and reported earnings per diluted share and non-GAAP adjusted net income and adjusted earnings per diluted share). Below is a summary discussion of the major factors leading to the year-over-year changes in net sales, profits and expenses. A detailed discussion of segment operating performance for 2017 compared to 2016 follows the summary.

Consolidated net sales increased \$158.9 million, or nine percent, between years. Higher average selling prices favorably affected the year-over-year net sales change by \$174.5 million. The increase in average selling prices was mostly attributable to the pass through of higher raw material costs within the Surfactants and Polymers segments. Consolidated sales volume declined one percent, which had a \$25.5 million unfavorable impact on the year-over-year change in net sales. Sales volume decreased two percent and seven percent for the Surfactants and Specialty Products segments, respectively. Sales volume was flat year-over-year for the Polymers segment. Foreign currency translation positively affected the year-over-year net sales change by \$9.9 million. The favorable foreign currency translation effect reflected a weaker U.S. dollar against the majority of currencies for countries where the Company has foreign operations. Unit margins improved for Surfactants and declined for Polymers and Specialty Products.

Operating income improved \$20.0 million, or 16 percent, between years. Most of this improvement was related to lower 2017 deferred compensation expense and lower business restructuring and asset impairment charges, which declined by \$11.9 million and \$4.0 million, respectively. Operating income improved for the Surfactant segment and declined for the Polymers and Specialty Products segments. The Surfactant segment operating income increased 20 percent largely due to the non-recurrence of two customer claims incurred in the prior year (\$7.4 million), a favorable resolution of one of the prior year claims in 2017 (\$4.7 million), improved product mix, higher unit margins, savings from the prior year Canadian plant shutdown and the full year accretive impact of the October 2016 Tebras and PBC acquisitions in Brazil. The Polymers segment operating income declined 14 percent primarily due to lower sales volume and unit margins in North America. Foreign currency translation had a favorable \$1.7 million effect on year-over-year consolidated operating income.

Operating expenses (including deferred compensation expense and business restructuring and asset impairment expenses) decreased \$20.2 million, or 10 percent, between years. Changes in the individual income statement line items that comprise the Company’s operating expenses were as follows:

- Selling expenses decreased \$2.9 million, or five percent, year over year largely due to lower U.S. fringe benefit expenses (\$2.4 million). The lower fringe benefits were primarily due to lower incentive-based compensation expense (stock-based compensation and bonuses). Higher expenses associated with Tebras and PBC, acquired in October 2016, partially offset the consolidated decrease in selling expenses.
- Administrative expenses increased \$0.9 million, or one percent, year over year. The increase was primarily due to higher legal and consulting expenses, partially offset by lower U.S. fringe benefit expenses resulting from lower incentive-based compensation expense.
- Research, development and technical service (R&D) expenses decreased \$2.2 million, or four percent, year over year primarily due to lower U.S. fringe benefit expenses resulting from lower incentive-based compensation expense.
- Deferred compensation plan expense was \$11.9 million lower in 2017 than in 2016 primarily due to a \$2.51 per share decrease in the market price of Company common stock in 2017 versus a \$31.79 per share increase in 2016. See the “Overview” and “Corporate Expenses” sections of this MD&A for further details.
- Business restructuring and asset impairment charges totaled \$3.1 million in 2017 versus \$7.1 million in 2016. Current year restructuring charges are primarily comprised of decommissioning costs related to the Company’s Canadian plant closure (\$2.0 million) and severance costs related to a partial restructuring of the Company’s production facility in Fieldsboro, New Jersey (\$0.9 million). The prior year restructuring expenses primarily related to the closure of the Company’s surfactant plant in Canada (\$2.8 million) and asset impairment charges of \$4.3 million. See Note 22 to the consolidated financial statements for additional information. The business restructuring and asset impairment charges were excluded from the determination of segment operating income.

Net interest expense for 2017 declined \$1.8 million, or 13 percent, from net interest expense for 2016. The decline in interest expense was principally attributable to higher interest income earned on excess cash and lower average debt levels due to scheduled repayments.

Other, net was income of \$4.5 million for 2017 versus \$0.8 million of income in 2016. Most of this increase was attributable to investment income (including realized and unrealized gains and losses) from the Company's deferred compensation and supplemental defined contribution mutual fund assets. Investment income (including realized and unrealized gains and losses) was \$5.1 million in 2017 versus \$0.8 million in 2016, an increase of \$4.4 million year-over-year. Partially offsetting this increase was foreign exchange activity which resulted in a \$0.6 million loss in 2017 versus an insignificant loss in 2016.

The effective tax rate was 34.3 percent in 2017 compared to 24.3 percent in 2016. The increase was primarily attributable to the enactment of the U.S. Tax Cuts and Jobs Act ("Tax Act") which resulted in a net tax cost of \$14.9 million. This net expense consists of a net benefit attributable to the U.S. federal corporate income tax rate reduction of \$4.5 million and a net expense attributable to the Transition Tax of \$19.4 million. The increase in the effective tax rate attributable to the Tax Act was partially offset by the following favorable nonrecurring items: 1) a foreign tax credit benefit from the repatriation of foreign earnings, and 2) a tax benefit from a change in accounting method related to tax depreciation. See Note 9 to the consolidated financial statements for a reconciliation of the statutory U.S. federal income tax rate to the effective tax rate.

### **Segment Results**

| <i>(In thousands)</i> | For the Year Ended   |                      | Increase<br>(Decrease) | Percent<br>Change |
|-----------------------|----------------------|----------------------|------------------------|-------------------|
|                       | December 31,<br>2017 | December 31,<br>2016 |                        |                   |
| <b>Net Sales</b>      |                      |                      |                        |                   |
| Surfactants           | \$ 1,297,555         | \$ 1,181,563         | \$ 115,992             | 10                |
| Polymers              | 546,634              | 498,826              | 47,808                 | 10                |
| Specialty Products    | 80,818               | 85,777               | (4,959)                | -6                |
| Total Net Sales       | <u>\$ 1,925,007</u>  | <u>\$ 1,766,166</u>  | <u>\$ 158,841</u>      | 9                 |

| <i>(In thousands)</i>  | For the Year Ended   |                      | Increase<br>(Decrease) | Percent<br>Change |
|--|----------------------|----------------------|------------------------|-------------------|
|  | December 31,<br>2017 | December 31,<br>2016 |                        |                   |
| <b>Operating Income</b>  |                      |                      |                        |                   |
| Surfactants  | \$ 119,990           | \$ 99,796            | \$ 20,194              | 20                |
| Polymers   | 82,801               | 96,788               | (13,987)               | -14               |
| Specialty Products   | 9,952                | 10,698               | (746)                  | -7                |
| Segment Operating Income   | \$ 212,743           | \$ 207,282           | \$ 5,461               | 3                 |
| Corporate Expenses, Excluding Deferred Compensation<br>and Restructuring | 58,657               | 57,220               | 1,437                  | 3                 |
| Deferred Compensation Expense  | 4,857                | 16,805               | (11,948)               | -71               |
| Business Restructuring and Asset Impairments                             | 3,069                | 7,064                | (3,995)                | -57               |
| Total Operating Income   | <u>\$ 146,160</u>    | <u>\$ 126,193</u>    | <u>\$ 19,967</u>       | 16                |

## Surfactants

Surfactants 2017 net sales increased \$116.0 million, or 10 percent, from net sales reported in 2016. Higher selling prices and the favorable effects of foreign currency translation accounted for \$139.7 million and \$1.8 million, respectively, of the year-over-year increase in net sales. The increase in selling prices mostly reflected the pass through to customers of higher costs for certain raw materials and more favorable sales mix. The favorable sales mix was primarily attributable to higher sales of products used in household, industrial and institutional (HI&I), agricultural and oilfield applications. Sales volume decreased two percent between years, which had a \$25.5 million negative effect on year-over-year net sales. All regions, except Latin America, experienced sales volume declines. The majority of the sales volume decline was attributable to lower commodity surfactant demand. The Latin America sales volume increase was principally due to the full year impact of the region's October 2016 acquisitions of Tebras and PBC. A year-over-year comparison of net sales by region follows:

| (In thousands)                   | For the Year Ended  |                     | Increase          | Percent Change |
|----------------------------------|---------------------|---------------------|-------------------|----------------|
|                                  | December 31, 2017   | December 31, 2016   |                   |                |
| North America                    | \$ 763,044          | \$ 724,619          | \$ 38,425         | 5              |
| Europe                           | 275,121             | 237,489             | 37,632            | 16             |
| Latin America                    | 190,802             | 151,229             | 39,573            | 26             |
| Asia                             | 68,588              | 68,226              | 362               | 1              |
| <b>Total Surfactants Segment</b> | <b>\$ 1,297,555</b> | <b>\$ 1,181,563</b> | <b>\$ 115,992</b> | <b>10</b>      |

Net sales for North American operations increased five percent between years. Higher selling prices and the favorable effect of foreign currency translation positively affected the year-over-year change in net sales by \$58.8 million and \$0.6 million, respectively. A three percent decline in sales volume offset the impacts of selling prices and currency translations by \$21.0 million. Selling prices increased eight percent year-over-year mainly due to the pass through of certain increased raw material costs to customers and to a more favorable mix of sales. The three percent decline in sales volume reflected decreased sales of commodity products used in laundry and cleaning and personal care applications partially offset by increased sales of products used in HI&I, agricultural and oilfield applications. The foreign currency impact reflected a weaker U.S. dollar relative to the Canadian dollar.

Net sales for European operations increased 16 percent from 2016 to 2017. Most of this increase was attributable to higher selling prices which favorably affected the year-over-year change in net sales by \$44.4 million. The increase in selling prices primarily resulted from the pass through of higher costs for certain raw materials. A three percent decline in sales volume and the unfavorable effect of foreign currency translation negatively affected the year-over-year change in net sales by \$6.0 million and \$0.8 million, respectively. The decline in sales volume was largely attributable to lower demand for personal care commodity anionics and reduced sales volumes of general surfactants sold through our distribution partners, partially offset by higher demand for agricultural chemicals. A weaker British pound sterling, partially offset by a stronger Euro, relative to the U.S. dollar, accounted for the foreign currency effect. Net sales in 2016 were negatively impacted by \$7.4 million of expense from two customer claims (see Note 23 to the consolidated financial statements for further information) whereas net sales in 2017 were positively impacted by \$4.7 million related to a favorable resolution of one of the prior year claims.

Net sales for Latin American operations increased 26 percent due to higher selling prices, a seven percent increase in sales volume and the favorable impact of foreign currency translation, which accounted for \$23.2 million, \$10.8 million and \$5.6 million, respectively, of the year-over-year increase in net sales. Selling prices increased 14 percent due to the pass through to customers of higher raw material costs and a more favorable mix of sales. The improved sales volume reflected new business associated with the October 2016 acquisition of Tebras and PBC and higher demand for agricultural chemicals, partially offset by lower demand and lost commodity business for products used in laundry and cleaning applications. The year-over-year strengthening of the Brazilian real and the Colombian peso against the U.S. dollar generated the favorable foreign currency effect. Net sales in 2016 included \$4.3 million of compensation for future lost revenue related to a negotiated settlement with a major customer under contract with the region's Bahia, Brazil, plant that exited the product line for which the Company supplied them product (see Note 22 to the consolidated financial statements for further information).

Net sales for Asian operations increased one percent primarily due to a 23 percent increase in average selling prices. Higher average selling prices, primarily resulting from the pass through of certain increased raw material costs, favorably impacted net sales by \$13.3 million. Lower sales volume and the effect of foreign currency translation negatively affected the year-over-year change in net sales by \$9.2 million and \$3.7 million, respectively. The 14 percent sales volume decline was primarily due to weaker demand for commodity laundry and cleaning products. A weaker Philippine peso relative to the U.S. dollar caused the negative foreign currency translation adjustment.

Surfactant operating income for 2017 increased \$20.2 million, or 20 percent, from operating income reported in 2016. The operating income increase was due to higher 2017 gross profit of \$16.4 million and lower operating expenses of \$3.8 million. The eight percent increase in gross profit was largely due to the non-recurrence of the aforementioned European customer claims incurred in 2016, a favorable resolution of one of the customer claims in 2017 and more favorable sales mix resulting from higher sales of products used in HI&I, agricultural and oilfield applications. Gross profit for 2016 was also negatively affected by accelerated depreciation (\$4.5 million) related to the Canadian plant shutdown whereas gross profit for 2017 was negatively impacted by accelerated depreciation (\$1.3 million) related to the Fieldsboro, New Jersey plant restructuring. Lower manufacturing costs resulting from the prior year plant closures in Canada and Brazil also benefited 2017 gross profit. The effects of foreign currency translation had a favorable \$1.2 million impact on the year-over-year gross profit change. Operating expenses decreased \$3.8 million, or four percent. Year-over-year comparisons of gross profit by region and total segment operating expenses and operating income follow:

| (In thousands)                           | For the Year Ended   |                         | Increase<br>(Decrease) | Percent<br>Change |
|--|----------------------|-------------------------|------------------------|-------------------|
|  | December 31,<br>2017 | December 31,<br>2016(a) |                        |                   |
| <u>Gross Profit and Operating Income</u> |                      |                         |                        |                   |
| North America                            | \$ 132,568           | \$ 124,072              | \$ 8,496               | 7                 |
| Europe                                   | 31,706               | 23,246                  | 8,460                  | 36                |
| Latin America                            | 28,929               | 28,508                  | 421                    | 1                 |
| Asia                                     | 19,387               | 20,397                  | (1,010)                | -5                |
| Surfactants Segment Gross Profit         | \$ 212,590           | \$ 196,223              | \$ 16,367              | 8                 |
| Operating Expenses                       | 92,600               | 96,427                  | (3,827)                | -4                |
| Operating Income                         | \$ 119,990           | \$ 99,796               | \$ 20,194              | 20                |

- (a) In 2017, the Company changed its internal financial statement classification for certain transportation costs, transferring such costs from operating expenses to cost of sales. In this segment discussion, the 2016 North America gross profit and total operating expenses have been changed from the amounts presented in 2016 to make such amounts consistent with the current year classification. Surfactant segment operating income remained unchanged.

Gross profit for North American operations increased seven percent principally due to improved product mix. The improved product mix primarily reflects decreased sales of commodity products used in laundry and cleaning and personal care applications partially offset by increased sales of products used in HI&I, agricultural and oilfield applications. The current year also benefited from lower manufacturing costs resulting from the closure of the Company's Canada manufacturing operations in the fourth quarter of 2016. The Company incurred \$4.5 million of accelerated depreciation associated with the Canadian plant closure in 2016 versus \$1.3 million of accelerated depreciation associated with the restructuring of the Fieldsboro, New Jersey plant in 2017.

Gross profit for European operations increased 36 percent between years largely due to the aforementioned non-recurring \$7.4 million customer claims incurred in 2016 and a favorable customer claim resolution in 2017 of \$4.7 million. Gross profit also improved due to more favorable product mix principally resulting from higher demand for agricultural chemicals. Prior year manufacturing costs also included approximately \$0.6 million of expenses associated with the planned 30-day mandatory inspection shutdown of the Company's plant in Germany. There was no such inspection in 2017. Foreign currency translation positively affected the change in gross profit by \$0.8 million.

Gross profit for Latin American operations improved one percent mainly due to a more profitable mix of sales, the full year contribution of the October 2016 Tebras and PBC acquisitions and lower manufacturing costs resulting from the prior year Bahia, Brazil plant closure. Gross profit in 2016 included \$4.3 million of income resulting from a negotiated customer contract termination settlement related to the Bahia, Brazil plant closure. Foreign currency translation positively impacted the change in gross profit by \$1.0 million.

Asia gross profit decreased five percent largely due to the 14 percent decrease in sales volume mostly related to the Company's Philippine operations. Foreign currency translation, mostly related to a weaker Philippine peso relative to the U.S. dollar, negatively impacted the change in gross profit by \$0.7 million.

Operating expenses for the Surfactants segment decreased \$3.8 million, or four percent, year-over-year. Most of this decrease was attributable to lower North American expenses. North American expenses were down primarily due to lower U.S. incentive-based compensation, primarily related to stock-based compensation and bonuses. The North American decrease was partially offset by higher Latin American expenses resulting from the full year impact of the October 2016 Tebras and PBC acquisitions.

## Polymers

Polymer net sales for 2017 increased \$47.8 million, or 10 percent, over net sales for 2016. Higher selling prices, resulting from the pass through of increased costs for certain raw materials, and the positive effect of foreign currency translation favorably affected the year-over-year net sales change by \$40.9 million and \$7.9 million, respectively. Sales volume, essentially flat between years, had a \$1.0 million unfavorable effect on the year-over-year net sales change. A decline in North American sales volume was offset by sales volume improvement in Europe and Asia. The foreign currency translation effect reflected a weaker U.S. dollar relative to the Polish zloty. A year-over-year comparison of net sales by region follows:

| (In thousands)         | For the Year Ended |                   | Increase  | Percent Change |
|------------------------|--------------------|-------------------|-----------|----------------|
|                        | December 31, 2017  | December 31, 2016 |           |                |
| North America          | \$ 329,629         | \$ 319,769        | \$ 9,860  | 3              |
| Europe                 | 188,244            | 153,986           | 34,258    | 22             |
| Asia and Other         | 28,761             | 25,071            | 3,690     | 15             |
| Total Polymers Segment | \$ 546,634         | \$ 498,826        | \$ 47,808 | 10             |

Net sales for North American operations increased three percent due to higher selling prices, partially offset by lower sales volumes. Selling prices increased five percent, which had a \$15.4 million positive effect on the year-over-year change in net sales. The pass through of certain higher raw material costs to customers led to increased selling prices. Sales volume declined two percent which unfavorably impacted the net sales change by \$5.5 million. Sales volume of polyols used in rigid foam applications declined two percent mainly due to lost share from one major customer. Phthalic anhydride sales volume declined seven percent. Sales volume of specialty polyols increased eight percent due to greater demand for product used in CASE applications and powdered resins.

Net sales for European operations increased 22 percent due to higher selling prices, the favorable effect of foreign currency translation and a three percent increase in sales volumes, which accounted for \$22.4 million, \$7.9 million and \$4.0 million, respectively, of the year-over-year net sales increase. Selling prices increased 14 percent primarily due to the pass through to customers of cost increases for certain raw materials. The sales volume improvement was primarily attributable to increased sales of specialty polyols, which reflected the Company's successful efforts to utilize the production capacity of its new reactor in Poland. Sales volume also grew slightly due to increased demand for polyols used in rigid foam insulation and insulated metal panels.

Net sales for Asia and Other operations increased 15 percent between years due to higher selling prices, a two percent increase in sales volume and the favorable effect of foreign currency, which accounted for \$3.1 million, \$0.5 million and \$0.1 million, respectively, of the year-over-year net sales increase.

Polymer operating income for 2017 declined \$14.0 million, or 14 percent, compared to operating income for 2016. Gross profit decreased \$14.8 million, or 12 percent, primarily due to reduced margins and lower sales volumes in North American operations. European operations reported a 14 percent gross profit improvement due to sales volume growth and lower manufacturing costs. Operating expenses declined \$0.9 million, or three percent, versus prior year. Year-over-year comparisons of gross profit by region and total segment operating expenses and operating income follow:

| (In thousands)                           | For the Year Ended |                      | Increase (Decrease) | Percent Change |
|--|--------------------|----------------------|---------------------|----------------|
|  | December 31, 2017  | December 31, 2016(a) |                     |                |
| <u>Gross Profit and Operating Income</u> |                    |                      |                     |                |
| North America                            | \$ 79,576          | \$ 96,548            | \$ (16,972)         | -18            |
| Europe                                   | 31,451             | 27,702               | 3,749               | 14             |
| Asia and Other                           | 114                | 1,737                | (1,623)             | -93            |
| Polymers Segment Gross Profit            | \$ 111,141         | \$ 125,987           | \$ (14,846)         | -12            |
| Operating Expenses                       | 28,340             | 29,199               | (859)               | -3             |
| Operating Income                         | \$ 82,801          | \$ 96,788            | \$ (13,987)         | -14            |

- (a) In 2017, the Company changed its internal financial statement classification for certain transportation costs, transferring such costs from operating expenses to cost of sales. In this segment discussion, the 2016 North America gross profit and total operating expenses have been changed from the amounts presented in 2016 to make such amounts consistent with the current year classification. Polymer segment operating income remained unchanged.

Gross profit for North American operations declined 18 percent year over year primarily due to reduced margins and a two percent decline in sales volume. The decline in margins reflected the effect of higher raw material costs that, due to competitive reasons, could not entirely be passed on to customers.

Gross profit for European operations increased 14 percent primarily due to a three percent increase in sales volume and lower unit manufacturing costs. The 2016 results were negatively affected by higher plant expenses that resulted from the planned 30-day mandatory inspection shutdown of manufacturing operations in Germany during the third quarter of 2016. As a result of the shutdown, 2016 plant expenses included \$2.4 million of inspection and storage expenses not incurred in 2017. The favorable effects of foreign currency translation positively impacted the year-over-year change in gross profit by \$1.2 million.

Gross profit for Asia and Other operations declined 93 percent despite a two percent increase in sales volume. Most of the decline was attributable to higher overhead costs incurred in 2017. Overhead costs were lower in 2016 as the Nanjing plant benefited from higher throughput to supply material to the Company's European market to compensate for the mandatory shutdown at the German plant. The intercompany production reduced site overhead in 2016.

Operating expenses for the Polymers segment decreased \$0.9 million, or three percent, year over year largely due to lower U.S. incentive-based compensation expense.

#### *Specialty Products*

Net sales for 2017 declined \$5.0 million, or six percent, compared to net sales for 2016. A seven percent decrease in sales volume accounted for most of the net sales decline. Most of the sales volume decrease was attributable to lower demand for food ingredient applications and nutritional supplemental products. Operating income decreased \$0.7 million year over year primarily due to the lower sales volume partially offset by more favorable product mix.

#### *Corporate Expenses*

Corporate expenses, which are comprised of deferred compensation and other operating expenses that are not allocated to the reportable segments, declined \$14.5 million year-over-year to \$66.6 million in 2017 from \$81.1 million in 2016. The decline in corporate expense was primarily attributable to lower deferred compensation expense (\$11.9 million), U.S. incentive-based compensation (\$2.4 million) and the previously discussed restructuring and impairment charges (\$4.0 million). These decreases were partially offset by higher legal and consulting related expenses (\$3.6 million) in 2017.

Deferred compensation was \$4.9 million of expense for 2017 compared to \$16.8 million of expense for 2016. The lower expense primarily resulted from a \$2.51 per share decrease in the value of Company common stock over the twelve months ended December 31, 2017, compared to a \$31.79 per share increase for the same period of 2016. The following table presents the year-end Company common stock market prices used in the computation of deferred compensation expense:

|                     | December 31 |          |          |          |
|---------------------|-------------|----------|----------|----------|
|                     | 2017        | 2016     | 2015     | 2014     |
| Company Stock Price | \$ 78.97    | \$ 81.48 | \$ 49.69 | \$ 40.08 |

#### **2016 Compared with 2015**

##### **Summary**

Net income attributable to the Company for 2016 increased 13 percent to \$86.2 million, or \$3.73 per diluted share, from \$76.0 million, or \$3.32 per diluted share, for 2015. Adjusted net income increased 24 percent to \$98.2 million, or \$4.25 per diluted share, from \$79.4 million, or \$3.46 per diluted share (See the "Reconciliations of Non-GAAP Adjusted Net Income and Diluted Earnings per Share" section of this MD&A for reconciliations between reported net income attributable to the Company and reported earnings per diluted share and non-GAAP adjusted net income and adjusted earnings per diluted share). Below is a summary discussion of the major factors leading to the year-over-year changes in net sales, profits and expenses. A detailed discussion of segment operating performance for 2016 compared to 2015 follows the summary.

Consolidated net sales declined \$10.0 million, or one percent, between years. Sales volume increased six percent, which had a \$114.0 million favorable effect on the year-over-year change in net sales. All three reportable segments contributed to the consolidated sales volume improvement. By segment, sales volume increased five percent, 12 percent and eight percent for Surfactants, Polymers and Specialty Products, respectively. The effect of increased consolidated sales volume was more than offset by lower selling prices and the unfavorable effects of foreign selling currency translation, which negatively affected the year-over-year net sales change by \$81.1 million and \$42.9 million, respectively. The decreased selling prices were primarily attributable to declines in raw material costs. Overall unit margins improved slightly between years. The unfavorable foreign currency translation effect reflected a stronger U.S. dollar against all currencies for countries where the Company has foreign operations.

Operating income for 2016 improved \$3.4 million, or three percent, over operating income for 2015 despite 2016 restructuring and asset impairment charges of \$7.1 million and increased deferred compensation expense of \$10.3 million. Operating income improved for Polymers and Specialty Products. Surfactant segment operating income declined four percent largely due to the settlement of two customer claims and accelerated depreciation related to the cessation of manufacturing operations at the Company's Canadian plant. 2015 operating income included a \$2.9 million gain on the sale of the Company's specialty polyurethane systems product line. Foreign currency translation had an unfavorable \$3.7 million effect on the year-over-year consolidated operating income change.

Operating expenses (including the business restructuring and asset impairment expenses) increased \$24.0 million, or 13 percent, between years. Changes in the individual income statement line items that comprise the Company's operating expenses were as follows:

- Selling expenses increased \$1.7 million, or three percent, year over year largely due to higher U.S. fringe benefit expenses (\$1.0 million), which reflected increased incentive-based compensation (which includes stock-based compensation, bonuses and profit sharing) recognized as a result of the year-over-year improvement in Company financial performance and in Company common stock value.
- Administrative expenses declined \$0.9 million, or one percent, year over year. The decrease was attributable to lower consulting expense (\$5.2 million) as external resources related to the initiative to improve efficiency across the Company's global organization (referred to as DRIVE) were not used in 2016. Partially offsetting the lower consulting expense were higher fringe benefit (\$2.3 million) and salary (\$1.2 million) expenses. Higher U.S. incentive-based compensation led to the increase in fringe benefit expense. Legal and environmental expense also increased by \$0.9 million primarily due to adjustments to Company environmental liabilities.
- Research, development and technical service (R&D) expenses increased \$5.8 million, or 12 percent, year over year. Higher expense for U.S. salaries and the related fringe benefits (\$3.9 million) was the major contributor to the increase. In addition, foreign R&D expenses grew \$0.4 million, as some of the Company's non-U.S. subsidiaries have added product development resources to support their local needs. The accumulation of increases for a number of other expense items accounted for the remainder of the year-over-year variance.
- Deferred compensation plan expense was \$10.3 million higher in 2016 than in 2015 due to a significantly larger increase in the value of Company common stock during 2016 than for 2015. See the "Overview" and "Corporate Expenses" sections of this MD&A for further details.
- Business restructuring and asset impairment charges totaled \$7.1 million in 2016. There were no such charges in 2015. Restructuring expenses related to the closure of the Company's surfactant plant in Canada amounted to \$2.8 million. In addition, the Company recognized impairment charges of \$4.3 million. See Note 22 to the consolidated financial statements for additional information. The business restructuring and asset impairment charges were excluded from the determination of segment operating income.

Net interest expense for 2016 declined \$1.3 million, or nine percent, from net interest expense for 2015. The decline in interest expense was principally attributable to higher interest income earned on excess cash. Lower average debt levels due to scheduled repayments also contributed.

In the fourth quarter of 2015, the Company and its partner agreed to dissolve the TIORCO joint venture and, therefore, the Company has reported no results in the loss from equity joint venture line in 2016. The Company's share of TIORCO's loss for the 2015 was \$7.0 million.

Other, net income for 2016 declined \$0.8 million, or 48 percent, from other, net income for 2015. Foreign exchange activity resulted in an insignificant loss in 2016 compared to a \$0.7 million gain in 2015. Investment income (including realized and unrealized gains and losses) for the Company's deferred compensation and supplemental defined contribution mutual fund assets declined \$0.1 million between years to \$0.8 million in 2016 from \$0.9 million in 2015.

The effective tax rate was 24.3 percent in 2016 compared to 26.1 percent in 2015. The decrease was attributable to the following items: 1) a tax benefit derived from the early adoption of Accounting Standards Update No. 2016-9, *Compensation – Stock Compensation (Topic 718): Improvement to Employee Share-Based Payment Accounting*; 2) an unrecognized tax benefit recorded in 2015 that was nonrecurring in 2016; and 3) a more favorable geographical mix of income in 2016. This decrease was partially offset by the 2011 and 2012 Agricultural Chemicals Security Credit tax benefit recorded in 2015 that was nonrecurring in 2016. See Note 9 to the consolidated financial statements for a reconciliation of the statutory U.S. federal income tax rate to the effective tax rate.

## Segment Results

| (In thousands)  | For the Year Ended |                   | (Decrease)  | Percent Change |
|---|--------------------|-------------------|-------------|----------------|
|   | December 31, 2016  | December 31, 2015 |             |                |
| <b>Net Sales</b>  |                    |                   |             |                |
| Surfactants   | \$ 1,181,563       | \$ 1,205,849      | \$ (24,286) | -2             |
| Polymers  | 498,826            | 491,488           | 7,338       | 1              |
| Specialty Products  | 85,777             | 78,830            | 6,947       | 9              |
| Total Net Sales   | \$ 1,766,166       | \$ 1,776,167      | \$ (10,001) | -1             |
| <b>Operating Income</b>   |                    |                   |             |                |
| Surfactants   | \$ 99,796          | \$ 104,080        | \$ (4,284)  | -4             |
| Polymers  | 96,788             | 80,942            | 15,846      | 20             |
| Specialty Products  | 10,698             | 4,397             | 6,301       | 143            |
| Segment Operating Income  | \$ 207,282         | \$ 189,419        | \$ 17,863   | 9              |
| Corporate Expenses, Excluding Deferred Compensation and Restructuring | 57,220             | 60,129            | (2,909)     | -5             |
| Deferred Compensation Expense (Income)                                | 16,805             | 6,500             | 10,305      | NM             |
| Business Restructuring  | 7,064              | —                 | 7,064       | NM             |
| Total Operating Income  | \$ 126,193         | \$ 122,790        | \$ 3,403    | 3              |

### Surfactants

Surfactants 2016 net sales declined \$24.3 million, or two percent, from net sales reported in 2015. Sales volume increased five percent between years, which had a \$58.5 million positive effect on the year-over-year net sales change. All regions, except Europe, contributed to the sales volume improvement. Decreased selling prices and foreign currency translation had negative effects of \$48.3 million and \$34.5 million, respectively, on the net sales change. North American operations accounted for most of the decline in selling prices, which reflected lower year-over-year costs for major raw materials and a less favorable sales mix. The foreign currency translation effect resulted from a stronger U.S. dollar compared to all currencies of the segment's foreign operations. A year-over-year comparison of net sales by region follows:

| (In thousands)            | For the Year Ended |                   | Increase (Decrease) | Percent Change |
|---------------------------|--------------------|-------------------|---------------------|----------------|
|                           | December 31, 2016  | December 31, 2015 |                     |                |
| North America             | \$ 724,619         | \$ 737,713        | \$ (13,094)         | -2             |
| Europe                    | 237,489            | 258,841           | (21,352)            | -8             |
| Latin America             | 151,229            | 148,812           | 2,417               | 2              |
| Asia                      | 68,226             | 60,483            | 7,743               | 13             |
| Total Surfactants Segment | \$ 1,181,563       | \$ 1,205,849      | \$ (24,286)         | -2             |

Net sales for North American operations declined two percent between years. Sales volume increased seven percent, which favorably affected the year-over-year change in net sales by \$49.7 million. The effect of the increased sales volume was more than offset by an eight percent decline in selling prices and the unfavorable impact of foreign currency translation, which negatively affected the change in net sales by \$61.1 million and \$1.7 million, respectively. Most of the sales volume growth occurred in the first three quarters of 2016. For the full year, laundry and cleaning products were the largest contributors to the sales volume improvement, as the Company derived the full-year benefits of a supply agreement with a large customer that commenced during the third quarter of 2015. Sales volume for products used in personal care applications declined, primarily due to weaker demand in the second half of 2016 coupled with some lost business. In addition, lower crude oil prices led to a decrease in sales volumes of oil field products used in EOR applications. The year-over-year decline in sales prices primarily reflected decreased raw material costs, particularly for the first half of 2016, and a less favorable sales mix. The foreign currency impact reflected a stronger U.S. dollar relative to the Canadian dollar.

Net sales for European operations declined eight percent. Reducing 2016 net sales was \$7.4 million of settlements for two customer claims (see Note 23 to the consolidated financial statements for further information). In addition, the unfavorable effects of foreign currency translation and a two percent decline in sales volume unfavorably impacted the change in net sales by \$12.5 million and \$4.6 million, respectively. Selling prices averaged one percent higher, which had a \$3.1 million favorable effect on the year-over-



year net sales change. A weaker British pound sterling relative to the U.S. dollar accounted for most of the foreign currency effect. The decline in sales volume was mainly attributable to weaker demand for agricultural chemicals, laundry and cleaning products and personal care products. Sales volumes of general surfactants sold through distributors increased year over year.

Net sales for Latin American operations increased two percent. Included in fourth quarter and full year 2016 net sales was \$4.3 million in compensation for future lost revenue related to a negotiated settlement with a major customer under contract with the region's Bahia, Brazil, plant that exited the product line for which the Company supplied them product (see Note 22 to the consolidated financial statements for further information). A six percent increase in sales volume and higher selling prices favorably affected the year-over-year change in net sales by \$8.7 million and \$6.4 million, respectively. The unfavorable effects of currency translation offset the positive impacts of increased sales prices and volumes by \$17.0 million. Improved laundry and cleaning and agricultural chemical sales volumes in Brazil accounted for most of the improvement in Latin America. New business related to the fourth quarter 2016 acquisitions of Tebras and PBC also contributed to the growth in sales volumes and net sales dollars. The higher selling prices reflected increased raw material costs and a more favorable mix of sales. The year-over-year weakening of the Brazilian real, Mexican peso and Colombian peso against the U.S. dollar led to the foreign currency translation effect.

Net sales for Asian operations increased 13 percent primarily due to a nine percent increase in average selling prices and a seven percent growth in sales volume, which positively affected the year-over-year change in net sales by \$6.1 million and \$4.4 million, respectively. An improved mix of sales coupled with the effects of increased raw material costs led to the higher average selling prices. Most of the sales volume improvement was attributable to new business and increased demand from existing customers of the Company's Philippine operations. Sales volume also increased from Singapore. Foreign currency translation had a \$2.8 million unfavorable effect on the net sales change.

Surfactant operating income for 2016 declined \$4.3 million, or four percent, from operating income reported in 2015. Operating income for 2016 was negatively affected by accelerated depreciation related to the Canadian plant shutdown and by the settlement of customer claims in Europe. Gross profit increased \$4.5 million, or two percent, largely due to higher sales volumes. The effects of foreign currency translation had an unfavorable \$4.6 million impact on the year-over-year gross profit change. Operating expenses increased \$8.8 million, or 10 percent. Year-over-year comparisons of gross profit by region and total segment operating expenses and operating income follow:

| (In thousands)                           | For the Year Ended      |                         | Increase<br>(Decrease) | Percent<br>Change |
|--|-------------------------|-------------------------|------------------------|-------------------|
|  | December 31,<br>2016(a) | December 31,<br>2015(a) |                        |                   |
| <u>Gross Profit and Operating Income</u> |                         |                         |                        |                   |
| North America                            | \$ 124,072              | \$ 123,653              | \$ 419                 | 0                 |
| Europe                                   | 23,246                  | 31,363                  | (8,117)                | -26               |
| Latin America                            | 28,508                  | 25,366                  | 3,142                  | 12                |
| Asia                                     | 20,397                  | 12,254                  | 8,143                  | 66                |
| Surfactants Segment Gross Profit         | \$ 196,223              | \$ 192,636              | \$ 3,587               | 2                 |
| Operating Expenses                       | 96,427                  | 88,556                  | 7,871                  | 9                 |
| Operating Income                         | \$ 99,796               | \$ 104,080              | \$ (4,284)             | -4                |

(a) In 2017, the Company changed its internal financial statement classification for certain transportation costs, transferring such costs from operating expenses to cost of sales. In this segment discussion, the 2016 and 2015 North America gross profit and total operating expenses have been changed from the amounts presented before to make such amounts consistent with the current year classification. Surfactant segment operating income remained unchanged.

Gross profit for North American operations was flat between years despite the seven percent year-over-year improvement in sales volume. The favorable effect of the growth in sales volume was offset by \$4.5 million of accelerated depreciation associated with the shutdown of manufacturing operations at the Company's Canadian plant.

Gross profit for European operations declined 26 percent between years largely due to the aforementioned \$7.4 million customer claim settlements and a two percent decline in sales volume. The region also incurred approximately \$0.6 million of expenses associated with a planned 30-day mandatory inspection shutdown of the Company's plant in Germany. There was no such inspection in 2015. Foreign currency translation negatively affected the change in gross profit by \$1.0 million.

Gross profit for Latin American operations improved twelve percent mainly due to the \$4.3 million settlement noted earlier and the effects of the six percent increase in sales volume. Foreign currency translation negatively impacted gross profit by \$2.8 million. The contribution from the Tebras and PBC acquisitions was insignificant for 2016.

Asia gross profit increased 66 percent largely due to the seven percent increase in sales volume and to margin improvement, particularly for the Company's Philippine operations. A more favorable product mix, higher selling prices and greater utilization of the plant in the Philippines led to the margin improvement.

Operating expenses for the Surfactants segment increased \$7.9 million, or 9 percent, year over year. Expenses increased for all regions, reflecting the additional resources and expenditures necessary to support the segment's global organization and growth initiatives. In addition, U.S. incentive-based compensation (which includes stock-based compensation, bonuses and profit sharing) increased between years due to improved Company financial performance and higher common stock prices. The favorable effects of foreign currency translation reduced the year-over-year change in operating expenses by \$1.6 million.

### Polymers

Polymer net sales for 2016 increased \$7.3 million, or one percent, over net sales for 2015. Sales volume increased 12 percent, which had a \$58.5 million favorable effect on the year-over-year net sales change. All regions contributed to the sales volume improvement. Lower selling prices and the effects of foreign currency translation unfavorably affected the net sales change by \$42.9 million and \$8.3 million, respectively. Year-over-year raw material cost declines led to the decrease in selling prices. The foreign currency translation effect reflected a stronger U.S. dollar against the currencies of the segment's foreign operations. A year-over-year comparison of net sales by region follows:

| <i>(In thousands)</i>  | For the Year Ended |                   | Increase | Percent Change |
|------------------------|--------------------|-------------------|----------|----------------|
|                        | December 31, 2016  | December 31, 2015 |          |                |
| North America          | \$ 319,769         | \$ 317,580        | \$ 2,189 | 1              |
| Europe                 | 153,986            | 150,654           | 3,332    | 2              |
| Asia and Other         | 25,071             | 23,254            | 1,817    | 8              |
| Total Polymers Segment | \$ 498,826         | \$ 491,488        | \$ 7,338 | 1              |

Net sales for North American operations increased one percent. Sales volume increased nine percent, which had a \$29.7 million favorable effect on the year-over-year net sales change. Selling prices declined eight percent, which offset the impact of higher sales volume by \$27.5 million. The sales volume improvement was attributable to a 20 percent increase for polyols used in rigid foam applications. New business and the continued growth in demand for rigid foam insulation led to the polyol sales volume growth. Sales volume of phthalic anhydride and specialty polyols declined three and five percent, respectively, between years. Year-over-year decreases in the cost of raw materials drove the decline in selling prices.

Net sales for European operations increased two percent. Sales volume grew 14 percent, which had a \$20.8 million favorable effect on the year-over-year net sales change. The sales volume improvement was driven by new business and increased demand for polyols used in rigid foam insulation and insulated metal panels. The impact of higher sales volume was partially offset by the effects of lower selling prices and foreign currency translation, which negatively affected the change in net sales by \$10.6 million and \$6.9 million, respectively. Lower raw material costs led to the decline in selling prices.

Net sales for Asia and Other operations increased eight percent between years due to a 29 percent increase in sales volume, which had a \$6.8 million positive impact on the year-over-year net sales change. Business gained from efforts to fill the capacity of the Company's new plant in Nanjing, China, accounted for most of the sales volume increase. The unfavorable effects of lower selling prices and foreign currency translation negatively impacted the change in net sales by \$3.5 million and \$1.5 million, respectively.

Polymer operating income for 2016 increased \$15.8 million, or 20 percent, over operating income for 2015. Results for 2015 included a \$2.9 million gain from the sale of Company's specialty polyurethane systems product line. Gross profit increased \$20.3 million, or 19 percent, due to the 12 percent increase in sales volume and to improved margins resulting primarily from lower raw material costs and an improved product mix. Year-over-year comparisons of gross profit by region and total segment operating expenses and operating income follow:

| (In thousands)                           | For the Year Ended      |                         | Increase<br>(Decrease) | Percent<br>Change |
|--|-------------------------|-------------------------|------------------------|-------------------|
|  | December 31,<br>2016(a) | December 31,<br>2015(a) |                        |                   |
| <u>Gross Profit and Operating Income</u> |                         |                         |                        |                   |
| North America                            | \$ 96,548               | \$ 81,055               | \$ 15,493              | 19                |
| Europe                                   | 27,702                  | 22,357                  | 5,345                  | 24                |
| Asia and Other                           | 1,737                   | 2,276                   | (539)                  | -24               |
| Polymers Segment Gross Profit            | \$ 125,987              | \$ 105,688              | \$ 20,299              | 19                |
| Less: Operating Expenses                 | 29,199                  | 27,608                  | 1,591                  | 6                 |
| Add: Gain on Sale of Product Line        | —                       | 2,862                   | (2,862)                | -100              |
| Operating Income                         | \$ 96,788               | \$ 80,942               | \$ 15,846              | 20                |

(a) In 2017, the Company changed its internal financial statement classification for certain transportation costs, transferring such costs from operating expenses to cost of sales. In this segment discussion, the 2016 and 2015 North America gross profit and total operating expenses have been changed from the amounts presented before to make such amounts consistent with the current year classification. Polymer segment operating income remained unchanged.

Gross profit for North American operations increased 19 percent year over year. The nine percent increase in sales volume, the positive effects of lower raw material costs and a more favorable mix of sales all contributed to the improved gross profit. Production efficiencies were also a positive factor as unit manufacturing overhead costs declined as a result of production volume increases that outpaced a five percent year-over-year increase in plant expenses.

Gross profit for European operations increased 24 percent primarily due to the 14 percent increase in sales volume and to lower raw material costs. The 2016 results were negatively affected by higher plant expenses that resulted from the planned 30-day mandatory inspection shutdown of manufacturing operations in Germany during the third quarter of 2016. As a result of the shutdown, 2016 plant expenses included \$2.4 million of inspection and storage expenses not incurred in 2015. The unfavorable effects of foreign currency translation negatively impacted the year-over-year change in gross profit by \$1.0 million.

Gross profit for Asia and Other operations declined 24 percent despite a 29 percent increase in sales volume. Higher overhead costs due to operating the new China plant at partial capacity led to the decline in gross profit. Most of the decline occurred in the fourth quarter when it was no longer necessary for the plant to manufacture product for other Company locations as it had done for a large period of 2016.

Operating expenses for the Polymers segment increased \$1.6 million, or six percent, year over year largely due to higher U.S. incentive-based compensation resulting from improved year-over-year Company financial performance and common stock prices.

#### Specialty Products

Net sales for 2016 increased \$6.9 million, or nine percent, over net sales for 2015. An eight percent increase in sales volume accounted for most of the net sales improvement. Selling prices increased approximately one percent. Most of the sales volume increase was attributable to increased demand for products used in food ingredient applications. Operating income increased \$6.3 million year over year due to increased sales volume and lower manufacturing and operating expenses. The decline in expenses reflected actions taken in 2015 to reduce the segment's cost structure. Approximately half of the year-over-year operating income improvement occurred in the fourth quarter due to higher sales volumes and selling prices and lower costs for food ingredient products.

#### Corporate Expenses

Corporate expenses increased \$14.5 million to \$81.1 million for 2016 from \$66.6 million for 2015. The increase was primarily attributable to increased expenses for deferred compensation (\$10.3 million), fringe benefits (\$1.4 million) and salaries (\$1.2 million) expenses and the previously discussed restructuring and impairment charges (\$7.1 million). Increased incentive-based compensation expenses, driven by improved year-over-year Company financial results and increased Company common stock values, led to the higher fringe benefit expenses. Consulting expenses declined \$5.2 million between years principally due to no external resources being used in 2016 for the Company's DRIVE efficiency efforts.

Deferred compensation was \$16.8 million of expense for 2016 compared to \$6.5 million of expense for 2015. The higher expense primarily resulted from a \$31.79 per share increase in the value of Company common stock over the twelve months ended December 31, 2016, compared to a \$9.61 per share increase for the same period of 2015. The following table presents the year-end Company common stock market prices used in the computation of deferred compensation expense:

| Company Stock Price | December 31 |          |          |
|---------------------|-------------|----------|----------|
|                     | 2016        | 2015     | 2014     |
|                     | \$ 81.48    | \$ 49.69 | \$ 40.08 |

## Liquidity and Capital Resources

### Overview

Historically, the Company's principal sources of liquidity have included cash flows from operating activities, available cash and cash equivalents and the use of available borrowing facilities. The Company's principal uses of cash have included funding operating activities, capital investments and acquisitions.

For the twelve months ended December 31, 2017, operating activities were a cash source of \$198.9 million versus a source of \$212.2 million for the comparable period in 2016. For the current year, investing cash outflows totaled \$82.7 million, as compared to an outflow of \$130.5 million in the prior year, and financing activities were a use of \$50.5 million, as compared to a use of \$29.8 million in the prior year. Cash and cash equivalents increased by \$73.2 million compared to December 31, 2016, including a favorable exchange rate impact of \$7.5 million.

As of December 31, 2017, the Company's cash and cash equivalents totaled \$298.9 million, including \$15.1 million in a money market fund rated AAAm by Standard and Poor's. Cash in U.S. demand deposit accounts totaled \$131.9 million and cash of the Company's non-U.S. subsidiaries held outside the U.S. totaled \$151.9 million as of December 31, 2017.

### Operating Activity

Net income in 2017 increased by \$5.3 million versus the comparable period in 2016. Working capital was a cash source of \$19.3 million in 2017 versus a source of \$18.8 million in 2016.

Accounts receivable were a use of \$16.4 million in 2017 compared to a use of \$17.2 million in 2016. Inventories were a source of \$5.7 million in 2017 versus a use of \$3.8 million in 2016. Accounts payable and accrued liabilities were a source of \$30.5 million in 2017 compared to a source of \$38.3 million for the same period in 2016.

Working capital requirements were lower in 2017 compared to 2016 primarily due to the above noted change in inventories. The change in inventories was mainly due to reduced quantities. It is management's opinion that the Company's liquidity is sufficient to provide for potential increases in working capital during 2018.

### Investing Activity

Cash outflows for investing activities decreased by \$47.8 million year-over-year.

Cash outflows from investing activities in 2017 included capital expenditures of \$78.6 million compared to \$103.1 million in 2016. Other investing activities were a use of \$4.1 million in 2017 versus a use of \$27.4 million in 2016, when the higher cash usage was primarily attributable to \$23.5 million used to acquire a production facility (Tebras) and a commercial business (PBC) in Brazil.

For 2018, the Company estimates that total capital expenditures will range from \$105 million to \$115 million including infrastructure spending and capacity expansions in the United States, Germany and Brazil.

### Financing Activity

Cash flow from financing activities was a use of \$50.5 million in 2017 versus a use of \$29.8 million in 2016. The higher cash outflow was primarily the result of repayment of foreign credit line borrowing, scheduled principal repayment of private placement debt and increased share repurchases.

The Company purchases its common stock in the open market or from its benefit plans from time to time to fund its own benefit plans and also to mitigate the dilutive effect of new shares issued under its benefit plans. The Company may, from time to time, seek to retire or purchase additional amounts of the Company's outstanding equity and/or debt securities through cash purchases and/or exchanges for other securities, in open market purchases, privately negotiated transactions or otherwise, including pursuant to a Rule 10b5-1 plan. Such repurchases or exchanges, if any, will depend on prevailing market conditions, the Company's liquidity requirements, contractual restrictions and other factors. The amounts involved may be material. For the twelve months ended December 31, 2017, the Company purchased 76,790 shares at a total cost of \$6.0 million. At December 31, 2017, there were 641,139 shares remaining under the current share repurchase authorization.

#### *Debt and Credit Facilities*

Consolidated balance sheet debt decreased by \$26.2 million for the current year, from \$317.0 million to \$290.8 million, due to a decrease of both domestic and foreign debt. In 2017, net debt (which is defined as total debt minus cash – See the “Reconciliation of Non-GAAP Net Debt” section of this MD&A) decreased by \$99.4 million, from \$91.3 million to a negative \$8.1 million.

As of December 31, 2017, the ratio of total debt to total debt plus shareholders' equity was 28.2 percent compared to 33.3 percent at December 31, 2016. As of December 31, 2017, the ratio of net debt to net debt plus shareholders' equity was a negative 1.1 percent, compared to 12.6 percent at December 31, 2016. At December 31, 2017, the Company's debt included \$290.0 million of unsecured private placement loans with maturities ranging from 2018 through 2027. These loans are the Company's primary source of long-term debt financing and are supplemented by bank credit facilities to meet short and medium-term needs.

On December 31, 2017 the Company had a committed \$125.0 million multi-currency syndicated revolving credit agreement. The credit agreement allowed the Company to make unsecured borrowings, as requested from time to time, for working capital and other corporate purposes. This unsecured facility was the Company's primary source of short-term borrowings and was committed through July 10, 2019, with terms and conditions that were substantially equivalent to those of the Company's other U.S. loan agreements. As of December 31, 2017, the Company had outstanding letters of credit of \$4.7 million under the revolving credit agreement, and no borrowings, with \$120.3 million remaining available.

On January 30, 2018, the Company entered into a five year committed \$350 million multi-currency revolving credit facility that matures on January 30, 2023 with a syndicate of banks. This credit facility replaced the Company's prior \$125 million credit agreement. The Company anticipates that cash from operations, committed credit facilities and cash on hand will be sufficient to fund anticipated capital expenditures, working capital, dividends and other planned financial commitments for the foreseeable future.

Certain foreign subsidiaries of the Company maintain term loans and short-term bank lines of credit in their respective local currencies to meet working capital requirements as well as to fund capital expenditure programs and acquisitions. At December 31, 2017, the Company's foreign subsidiaries had outstanding debt of \$1.8 million.

The Company has material debt agreements that require the maintenance of minimum interest coverage and minimum net worth. These agreements also limit the incurrence of additional debt as well as the payment of dividends and repurchase of treasury shares. As of December 31, 2017, testing for these agreements was based on the combined financial statements of the U.S. operations of the Company, Stepan Canada Inc., Stepan Quimica Ltda., Tebras Tensoativos do Brasil Ltda., PBC Industria Quimica Ltda., Stepan Specialty Products, LLC, Stepan Specialty Products B.V., Stepan Chemical (Nanjing) Co., Ltd., Stepan (Nanjing) Chemical R&D Co., Ltd., Stepan Holdings Asia Pte. Ltd. and Stepan Asia Pte. Ltd. (the “Restricted Group”). Under the most restrictive of these debt covenants:

1. The Restricted Group was required to maintain a minimum interest coverage ratio, as defined within the agreements, of 1.75 to 1.00, for the preceding four calendar quarters.
2. The Restricted Group was required to maintain net worth of at least \$325.0 million.
3. The Restricted Group was required to maintain a ratio of long-term debt to total capitalization, as defined in the agreements, not to exceed 60 percent.
4. The Restricted Group was permitted to pay dividends and purchase treasury shares after December 31, 2013, in amounts of up to \$100.0 million plus 100 percent of net income and cash proceeds of stock option exercises, measured cumulatively after June 30, 2014. The maximum amount of dividends that could have been paid within this limitation is disclosed as unrestricted retained earnings in Note 6 to the condensed consolidated financial statements.

The Company believes it was in compliance with all of its loan agreements as of December 31, 2017.

## Contractual Obligations

At December 31, 2017, the Company's contractual obligations, including estimated payments by period, were as follows:

| (In thousands)                                       | Payments Due by Period |                     |                  |                   |                      |
|--|------------------------|---------------------|------------------|-------------------|----------------------|
|  | Total                  | Less than<br>1 year | 1-3 years        | 3 – 5 years       | More than<br>5 years |
| Long-term debt obligations <sup>(a)</sup>            | \$ 291,786             | \$ 22,500           | \$ 58,572        | \$ 87,144         | \$ 123,570           |
| Interest payments on debt obligations <sup>(b)</sup> | 59,022                 | 12,354              | 20,594           | 14,676            | 11,398               |
| Operating lease obligations                          | 50,531                 | 8,950               | 12,626           | 8,782             | 20,173               |
| Purchase obligations <sup>(c)</sup>                  | 5,527                  | 4,024               | 1,503            | —                 | —                    |
| Other <sup>(d)</sup>                                 | 47,279                 | 10,777              | 5,394            | 4,942             | 26,166               |
| Total  | <u>\$ 454,145</u>      | <u>\$ 58,605</u>    | <u>\$ 98,689</u> | <u>\$ 115,544</u> | <u>\$ 181,307</u>    |

(a) Excludes unamortized debt issuance costs of \$1.0 million.

(b) Interest payments on debt obligations represent interest on all Company debt at December 31, 2017. The interest payment amounts related to the variable rate component of the Company's debt assume that interest will be paid at the rates prevailing at December 31, 2017. Future interest rates may change, and, therefore, actual interest payments could differ from those disclosed in the above table.

(c) Purchase obligations consist of raw material, utility and telecommunication service purchases made in the normal course of business.

(d) The "Other" category comprises deferred revenues that represent commitments to deliver products, expected 2018 required contributions to the Company's funded defined benefit pension plans, estimated payments related to the Company's unfunded defined benefit supplemental executive and outside director pension plans, estimated payments (undiscounted) related to the Company's asset retirement obligations, environmental remediation payments for which amounts and periods can be reasonably estimated and income tax liabilities for which payments and periods can be reasonably estimated.

The above table does not include \$96.6 million of other non-current liabilities recorded on the balance sheet at December 31, 2017, as summarized in Note 15 to the consolidated financial statements. The significant non-current liabilities excluded from the table are defined benefit pension, deferred compensation, environmental and legal liabilities and unrecognized tax benefits for which payment periods cannot be reasonably determined. In addition, deferred income tax liabilities are excluded from the table due to the uncertainty of their timing.

## Pension Plans

The Company sponsors a number of defined benefit pension plans, the most significant of which cover employees in its U.S. and U.K. locations. The U.S. and U.K. plans are frozen, and service benefit accruals are no longer being made. The funded status (pretax) of the Company's defined benefit pension plans improved \$4.0 million year over year, from \$27.3 million underfunded at December 31, 2016, to \$23.3 million underfunded at December 31, 2017. Better pension asset performance led to the improved funded status. A change in the mortality tables also contributed to the better funded status. The impacts of the pension asset returns and the change in mortality tables were partially offset by the effects of year-over-year decreases in the discount rates used to measure pension obligations (50- and 20-basis point decreases for the U.S. and U.K. plans, respectively).

The Company contributed \$2.8 million to its funded defined benefit plans in 2017. In 2018, the Company expects to contribute a total of \$0.5 million to the U.K. defined benefit plan. As a result of pension funding relief included in the Highway and Transportation Funding Act of 2014, the Company has no 2018 contribution requirement to the U.S. pension plans. Payments to participants in the unfunded non-qualified plans should approximate \$0.3 million in 2018, which is the same as payments made in 2017.

## Letters of Credit

The Company maintains standby letters of credit under its workers' compensation insurance agreements and for other purposes as needed. The insurance letters of credit are renewed annually and amended to the amounts required by the insurance agreements. As of December 31, 2017, the Company had a total of \$4.7 million of outstanding standby letters of credit.

## Off-Balance Sheet Arrangements

The Securities and Exchange Commission requires disclosure of off-balance sheet arrangements that either have, or are reasonably likely to have, a current or future effect on the Company's financial condition, changes in financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources that is material to investors. During the periods covered by this Form 10-K, the Company was not party to any such off-balance sheet arrangements.

## Environmental and Legal Matters

The Company's operations are subject to extensive federal, state and local environmental laws and regulations or similar laws in the other countries in which the Company does business. Although the Company's environmental policies and practices are designed to ensure compliance with these regulations, future developments and increasingly stringent environmental regulation may require the Company to make additional unforeseen environmental expenditures. The Company will continue to invest in the equipment and facilities necessary to comply with existing and future regulations. During 2017, the Company's expenditures for capital projects related to the environment were \$3.2 million. Expenditures related to capital projects related to the environment projects are capitalized and depreciated over their estimated useful lives, which are typically 10 years. Recurring costs associated with the operation and maintenance of facilities for waste treatment and disposal and managing environmental compliance in ongoing operations at the Company's manufacturing locations were approximately \$28.2 million for 2017, \$25.0 million for 2016 and \$22.1 million for 2015.

Over the years, the Company has received requests for information related to or has been named by government authorities as a potentially responsible party at a number of waste disposal sites where cleanup costs have been or may be incurred under the U.S. Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) and similar state or foreign statutes. In addition, damages are being claimed against the Company in general liability actions for alleged personal injury or property damage in the case of some disposal and plant sites. The Company believes that it has made adequate provisions for the costs it may incur with respect to the sites. See the Critical Accounting Policies section that follows for a discussion of the Company's environmental liabilities accounting policy. After partial remediation payments at certain sites, the Company has estimated a range of possible environmental and legal losses from \$24.2 million to \$45.4 million at December 31, 2017, compared to \$25.7 million to \$46.5 million at December 31, 2016. At December 31, 2017, the Company's accrued liability for such losses, which represented the Company's best estimate within the estimated range of possible environmental and legal losses, was \$24.2 million compared to \$25.8 million at December 31, 2016. Because the liabilities accrued are estimates, actual amounts could differ from the amounts reported. During 2017, cash outlays related to legal and environmental matters approximated \$2.0 million compared to \$1.4 million expended in 2016.

For certain sites, the Company has responded to information requests made by federal, state or local government agencies but has received no response confirming or denying the Company's stated positions. As such, estimates of the total costs, or range of possible costs, of remediation, if any, or the Company's share of such costs, if any, cannot be determined with respect to these sites. Consequently, the Company is unable to predict the effect thereof on the Company's financial position, cash flows and results of operations. Given the information available, management believes the Company has no liability at these sites. However, in the event of one or more adverse determinations with respect to such sites in any annual or interim period, the effect on the Company's cash flows and results of operations for those periods could be material. Based upon the Company's present knowledge with respect to its involvement at these sites, the possibility of other viable entities' responsibilities for cleanup, and the extended period over which any costs would be incurred, the Company believes that these matters, individually and in the aggregate, will not have a material effect on the Company's financial position.

See Item 3, Legal Proceedings, in this Form 10-K and Note 16, Contingencies, in the Notes to Consolidated Financial Statements for a summary of the significant environmental proceedings related to certain environmental sites.

## Outlook

After record results in 2016 and 2017, management believes that Surfactants will continue to benefit from the segment's diversification efforts into functional products, new technologies, expanded sales into its broad customer base globally and the stabilization of commodity surfactant volumes. Management believes that headwinds in the North American Polymer business related to lost share and lower margins will continue to be a challenge in 2018. The Company should positively benefit from the lower U.S. corporate tax rate in 2018.

## Climate Change Legislation

Based on currently available information, the Company does not believe that existing or pending climate change legislation or regulation is reasonably likely to have a material effect on the Company's financial condition, results of operations or cash flows.

## Critical Accounting Policies

The Company prepares its financial statements in accordance with accounting principles generally accepted in the United States of America (generally accepted accounting principles or GAAP). Preparation of financial statements in accordance with generally accepted accounting principles requires the Company to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. The following is a summary of the accounting policies the Company believes are the most important to aid in understanding its financial results:

### *Deferred Compensation*

The Company sponsors deferred compensation plans that allow management employees to defer receipt of their annual bonuses and outside directors to defer receipt of their fees until retirement, departure from the Company or as elected by the participant. The plans allow for the deferred compensation to grow or decline based on the results of investment options chosen by the participants. The investment options include Company common stock and a limited selection of mutual funds. The Company funds the obligations associated with these plans by purchasing investment assets that match the investment choices made by the plan participants. A sufficient number of shares of treasury stock are maintained on hand to cover the equivalent number of shares that result from participants electing the Company common stock investment option. As a result, the Company must periodically purchase its common shares in the open market or in private transactions. Upon retirement or departure from the Company, participants receive cash amounts equivalent to the payment date value of the investment choices they have made or Company common stock shares equal to the number of share equivalents held in the accounts.

Some plan distributions may be made in cash or Company common stock at the option of the participant. Other plan distributions can only be made in Company common stock. For deferred compensation obligations that may be settled in cash, the Company must record appreciation in the market value of the investment choices made by participants as additional compensation expense. Conversely, declines in the value of Company stock or the mutual funds result in a reduction of compensation expense since such declines reduce the cash obligation of the Company as of the date of the financial statements. These market price movements may result in significant period-to-period fluctuations in the Company's income. The increases or decreases in compensation expenses attributable to market price movements are reported in the operating expenses section of the consolidated statements of income. Because the obligations that must be settled only in Company common stock are treated as equity instruments, fluctuations in the market price of the underlying Company stock do not affect earnings.

At December 31, 2017 and December 31, 2016, the Company's deferred compensation liability was \$58.9 million and \$60.3 million, respectively. In 2017, approximately 55 percent of deferred compensation liability represented deferred compensation tied to the performance of the Company's common stock. In 2016, approximately 63 percent of deferred liability represented deferred compensation tied to the performance of the Company's common stock. The remainder of the deferred compensation liability was tied to the chosen mutual fund investment assets. A \$1.00 increase in the market price of the Company's common stock will result in approximately \$0.4 million of additional compensation expense. A \$1.00 reduction in the market price of the common stock will reduce compensation expense by a like amount. The expense or income associated with the mutual fund component will generally fluctuate in line with the overall percentage increase or decrease of the U.S. stock markets.

The mutual fund assets related to the deferred compensation plans are recorded on the Company's balance sheet at cost when acquired and adjusted to their market values at the end of each reporting period. As allowed by generally accepted accounting principles, the Company elected the fair value option for recording the mutual fund investment assets. Therefore, market value changes for the mutual fund investment assets are recorded in the income statement in the same periods that the offsetting changes in the deferred compensation liabilities are recorded. Dividends, capital gains distributed by the mutual funds and realized and unrealized gains and losses related to mutual fund shares are recognized as investment income or loss in the other, net line of the consolidated statements of income.

### *Environmental Liabilities*

It is the Company's accounting policy to record environmental liabilities when environmental assessments and/or remedial efforts are probable and the cost or range of possible costs can be reasonably estimated. When no amount within a range of possible costs is a better estimate than any other amount, the minimum amount in the range is accrued. Some of the factors on which the Company bases its estimates include information provided by feasibility studies, potentially responsible party negotiations and the development of remedial action plans.

Estimates for environmental liabilities are subject to potentially significant fluctuations as new facts emerge related to the various sites where the Company is exposed to liability for the remediation of environmental contamination. See the Environmental and Legal Matters section of this MD&A for discussion of the Company's recorded liabilities and range of loss estimates.

### *Revenue Recognition*

Revenue is recognized upon shipment of goods to customers at the time title and risk of loss pass to the customer. In the majority of instances, this occurs when goods are provided to a carrier for shipment. For arrangements where the Company consigns product to a customer location, revenue is recognized when the customer uses the inventory. The Company records shipping and handling billed to a customer in a sales transaction as revenue. Costs incurred for shipping and handling are recorded in cost of sales. Volume and cash discounts due customers are estimated and recorded in the same period as the sales to which the discounts relate and are reported as reductions of revenue in the consolidated statements of income.



## Recent Accounting Pronouncements

See Note 1 to the consolidated financial statements, included in Part II, Item 8, for information on recent accounting pronouncements which affect the Company.

## Reconciliations of Non-GAAP Adjusted Net Income and Dilutive Earnings per Share

(In millions, except per share amounts)

|   | Twelve Months Ended December 31 |                |                |                |                |                |
|---|---------------------------------|----------------|----------------|----------------|----------------|----------------|
|   | 2017                            |                | 2016           |                | 2015           |                |
|   | Net Income                      | Diluted EPS    | Net Income     | Diluted EPS    | Net Income     | Diluted EPS    |
| <b>Net Income Attributable to the Company as Reported</b> | <b>\$ 91.6</b>                  | <b>\$ 3.92</b> | <b>\$ 86.2</b> | <b>\$ 3.73</b> | <b>\$ 76.0</b> | <b>\$ 3.32</b> |
| Deferred Compensation Expense                             | (0.1)                           | —              | 16.1           | 0.70           | 5.6            | 0.24           |
| Business Restructuring and Asset Impairments              | 3.1                             | 0.13           | 7.1            | 0.30           | —              | —              |
| Contract Termination Settlement                           | —                               | —              | (4.3)          | (0.18)         | —              | —              |
| Environmental Remediation Expense                         | —                               | —              | —              | —              | 0.5            | 0.02           |
| Gain on Divestiture of Product Line                       | —                               | —              | —              | —              | (2.9)          | (0.13)         |
| TIORCO JV Dissolution                                     | —                               | —              | —              | —              | 2.4            | 0.10           |
| Cumulative Tax Effect on Above Adjustment Items           | (0.8)                           | (0.04)         | (6.9)          | (0.30)         | (2.2)          | (0.09)         |
| Tax Reform Impact   | 14.9                            | 0.64           | —              | —              | —              | —              |
| <b>Adjusted Net Income</b>                                | <b>108.7</b>                    | <b>\$ 4.65</b> | <b>\$ 98.2</b> | <b>\$ 4.25</b> | <b>\$ 79.4</b> | <b>\$ 3.46</b> |

The Company believes that certain non-GAAP measures, when presented in conjunction with comparable GAAP measures, are useful for evaluating the Company's operating performance and provide better clarity on the impact of non-operational items. Internally, the Company uses this non-GAAP information as an indicator of business performance and evaluates management's effectiveness with specific reference to these indicators. These measures should be considered in addition to, not a substitute for or superior to, measures of financial performance prepared in accordance with GAAP. The cumulative tax effect was calculated using the statutory tax rates for the jurisdictions in which the transactions occurred.

## Reconciliations of Non-GAAP Net Debt

(In millions)

|  | December 31      |                 |
|--|------------------|-----------------|
|  | 2017             | 2016            |
| Current Maturities of Long-Term Debt as Reported | \$ 22.50         | \$ 28.10        |
| Long-Term Debt as Reported                       | 268.30           | 288.90          |
| Total Debt as Reported                           | 290.80           | 317.00          |
| Less Cash and Cash Equivalents as Reported       | (298.90)         | (225.70)        |
| <b>Net Debt</b>                                  | <b>\$ (8.10)</b> | <b>\$ 91.30</b> |

Management uses the non-GAAP net debt metric to show a more complete picture of the Company's overall liquidity, financial flexibility and leverage level. This adjusted measure should be considered supplemental to and not a substitute for financial information prepared in accordance with GAAP. The Company's definition of this adjusted measure may differ from similarly titled measures used by other entities.

## **Item 7A. Quantitative and Qualitative Disclosures About Market Risk**

### **Foreign Currency Exchange Risk**

Because the Company operates globally, its cash flows and operating results are subject to movements in foreign currency exchange rates. Except for the financial transactions, balances and forward contracts referred to below, most of the Company's foreign subsidiaries' financial instruments are denominated in their respective functional currencies.

The Company uses forward contracts to mitigate the exposure of certain foreign currency transactions and balances to fluctuating exchange rates. At December 31, 2017, the Company had forward contracts with an aggregated notional amount of \$41.2 million. Except for the Company's subsidiaries in Brazil, China and Colombia, foreign currency exposures are substantially hedged by forward contracts. The fair value of all forward contracts as of December 31, 2017, was a net asset of \$0.2 million. As of December 31, 2017, the potential reduction in the Company's earnings resulting from the impact of hypothetical adverse changes in exchange rates on the fair value of its outstanding foreign currency contracts of 10 percent for all currencies would have been \$3.9 million.

### **Interest Rates**

The Company's debt was made up of fixed-rate and variable-rate borrowings totaling \$290.0 million and \$1.8 million, respectively, as of December 31, 2017. For 2018, it is projected that interest related expenses on short-term variable-rate borrowings will total approximately \$0.7 million. A hypothetical 10 percent average change to short-term interest rates would result in less than a \$0.1 million increase or decrease to interest expense for 2018.

The fair value of the Company's long term fixed-rate debt, including current maturities, was estimated to be \$291.5 million as of December 31, 2017, which was approximately \$1.5 million above the carrying value. Market risk was estimated as the potential increase to the fair value that would result from a hypothetical 10 percent decrease in the Company's weighted average long-term borrowing rates at December 31, 2017, or \$12.2 million.

### **Commodity Price Risk**

Certain raw materials used in the manufacture of the Company's products are subject to price volatility caused by weather, petroleum price fluctuations, general economic demand and other unpredictable factors. Increased raw material costs are recovered from customers as quickly as the marketplace allows; however, certain contractual arrangements allow for price changes only on a quarterly basis, and competitive pressures sometimes prevent the recovery of cost increases from customers, particularly in periods where there is excess industry capacity. As a result, for some product lines or market segments it may take time to recover raw material price increases. Periodically, firm purchase commitments are entered into which fix the price of a specific commodity that will be delivered at a future time. Forward purchase contracts are used to aid in managing the Company's natural gas costs. At December 31, 2017, the Company had open forward contracts for the purchase of 0.8 million dekatherms of natural gas at a cost of \$2.5 million. Because the Company has agreed to fixed prices for the noted quantity of natural gas, a hypothetical 10 percent fluctuation in the price of natural gas would cause the Company's actual natural gas cost to be \$0.3 million higher or lower than the cost at market price.

## Item 8. Financial Statements and Supplementary Data

The following statements and data are included in this item:

|  |    |
|--|----|
| <a href="#">Report of Independent Registered Public Accounting Firm</a>  | 42 |
| <a href="#">Consolidated Statements of Income (For years ended December 31, 2017, 2016 and 2015)</a>               | 43 |
| <a href="#">Consolidated Statements of Comprehensive Income (For years ended December 31, 2017, 2016 and 2015)</a> | 44 |
| <a href="#">Consolidated Balance Sheets (December 31, 2017 and 2016)</a>   | 45 |
| <a href="#">Consolidated Statements of Cash Flow (For years ended December 31, 2017, 2016 and 2015)</a>            | 46 |
| <a href="#">Consolidated Statements of Stockholders' Equity (For years ended December 31, 2017, 2016 and 2015)</a> | 47 |
| <a href="#">Notes to Consolidated Financial Statements</a>   | 50 |
| <a href="#">Selected Quarterly Financial Data</a>  | 86 |

## Report of Independent Registered Public Accounting Firm

To the Shareholders and Board of Directors of:  
Stepan Company  
Northfield, Illinois

### Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Stepan Company and subsidiaries (the “Company”) as of December 31, 2017 and 2016, the related consolidated statements of income, comprehensive income, equity, and cash flows for each of the three years in the period ended December 31, 2017, and the related notes (collectively referred to as the “financial statements”). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2017 and 2016, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2017, in conformity with accounting principles generally accepted in the United States of America.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company’s internal control over financial reporting as of December 31, 2017, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated February 27, 2018, expressed an unqualified opinion on the Company’s internal control over financial reporting.

### Basis for Opinion

These financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on the Company’s financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatements of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ Deloitte & Touche LLP  
DELOITTE & TOUCHE LLP

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Chicago, Illinois  
February 27, 2018

We have served as the Company’s auditor since 2002.

**Stepan Company**  
**Consolidated Statements of Income**  
**For the years ended December 31, 2017, 2016 and 2015**

(In thousands, except per share amounts)

|  | 2017                    | 2016                    | 2015                    |
|--|-------------------------|-------------------------|-------------------------|
| <b>Net Sales (Note 1)</b>  | <b>\$ 1,925,007</b>     | <b>\$ 1,766,166</b>     | <b>\$ 1,776,167</b>     |
| Cost of Sales  | <u>1,586,742</u>        | <u>1,427,621</u>        | <u>1,467,926</u>        |
| Gross Profit   | <b>338,265</b>          | 338,545                 | 308,241                 |
| Operating Expenses:  |                         |                         |                         |
| Selling (Note 1)   | 54,271                  | 57,212                  | 55,522                  |
| Administrative (Note 1)  | 76,041                  | 75,185                  | 76,048                  |
| Research, development and technical services (Note 1)  | 53,867                  | 56,086                  | 50,243                  |
| Deferred compensation expense  | 4,857                   | 16,805                  | 6,500                   |
|  | <u>189,036</u>          | <u>205,288</u>          | <u>188,313</u>          |
| Gain on sale of product line   | —                       | —                       | 2,862                   |
| Business restructuring and asset impairments (Note 22)                                       | <u>(3,069)</u>          | <u>(7,064)</u>          | <u>—</u>                |
| Operating Income   | <b>146,160</b>          | 126,193                 | 122,790                 |
| Other Income (Expense):  |                         |                         |                         |
| Interest, net (Note 6)   | (11,444)                | (13,205)                | (14,533)                |
| Loss from equity in joint ventures (Notes 1 and 25)  | —                       | —                       | (6,985)                 |
| Other, net (Note 8)  | 4,521                   | 828                     | 1,584                   |
|  | <u>(6,923)</u>          | <u>(12,377)</u>         | <u>(19,934)</u>         |
| Income Before Provision for Income Taxes   | <b>139,237</b>          | 113,816                 | 102,856                 |
| Provision for Income Taxes (Note 9)  | 47,690                  | 27,618                  | 26,819                  |
| Net Income   | <b>91,547</b>           | 86,198                  | 76,037                  |
| Net (Income) Loss Attributable to Noncontrolling Interests (Note 1)                          | 31                      | (7)                     | (69)                    |
| <b>Net Income Attributable to Stepan Company</b>   | <b><u>\$ 91,578</u></b> | <b><u>\$ 86,191</u></b> | <b><u>\$ 75,968</u></b> |
| Net Income Per Common Share Attributable to Stepan Company (Note 18):                        |                         |                         |                         |
| Basic  | <u>\$ 3.99</u>          | <u>\$ 3.78</u>          | <u>\$ 3.34</u>          |
| Diluted  | <u>\$ 3.92</u>          | <u>\$ 3.73</u>          | <u>\$ 3.32</u>          |
| Shares Used to Compute Net Income Per Common Share Attributable to Stepan Company (Note 18): |                         |                         |                         |
| Basic  | <u>22,946</u>           | <u>22,793</u>           | <u>22,730</u>           |
| Diluted  | <u>23,377</u>           | <u>23,094</u>           | <u>22,858</u>           |

*The accompanying Notes to Consolidated Financial Statements are an integral part of these statements.*

**Stepan Company**  
**Consolidated Statements of Comprehensive Income**  
**For the years ended December 31, 2017, 2016 and 2015**

| <i>(In thousands)</i>  | 2017              | 2016             | 2015             |
|--|-------------------|------------------|------------------|
| <b>Net Income</b>  | <b>\$ 91,547</b>  | <b>\$ 86,198</b> | <b>\$ 76,037</b> |
| <b>Other Comprehensive Income (Loss):</b>  |                   |                  |                  |
| Foreign currency translation adjustments (Note 19)   | 26,293            | (8,533)          | (45,490)         |
| Defined benefit pension plans:   |                   |                  |                  |
| Net actuarial gain (loss) arising in period (net of taxes of \$771, \$3,391, and \$568 for 2017, 2016 and 2015, respectively)                    | (582)             | 3,818            | 1,311            |
| Amortization of prior service cost included in pension expense (net of taxes of \$4, \$4, and \$6 for 2017, 2016 and 2015, respectively)         | 10                | 10               | 11               |
| Amortization of actuarial loss included in pension expense (net of taxes of \$1,240, \$1,301, and \$1,755 for 2017, 2016 and 2015, respectively) | 2,269             | 2,207            | 3,002            |
| Net defined benefit pension plan activity (Note 19)  | 1,697             | 6,035            | 4,324            |
| Cash flow hedges:  |                   |                  |                  |
| Losses arising in period (net of taxes of \$0, \$9, and \$26 in 2017, 2016 and 2015, respectively)   | —                 | (19)             | (49)             |
| Reclassifications to income in period (net of taxes of \$0, \$28, and \$8 in 2017, 2016 and 2015, respectively)                                  | (9)               | 45               | 5                |
| Net cash flow hedge activity (Note 19)   | (9)               | 26               | (44)             |
| <b>Other Comprehensive Income (Loss)</b>   | <b>27,981</b>     | <b>(2,472)</b>   | <b>(41,210)</b>  |
| <b>Comprehensive Income</b>  | <b>119,528</b>    | <b>83,726</b>    | <b>34,827</b>    |
| Comprehensive (Income) Loss Attributable to Noncontrolling Interests   | (48)              | 88               | (2)              |
| <b>Comprehensive Income Attributable to Stepan Company</b>   | <b>\$ 119,480</b> | <b>\$ 83,814</b> | <b>\$ 34,825</b> |

*The accompanying Notes to Consolidated Financial Statements are an integral part of these statements.*

**Stepan Company**  
**Consolidated Balance Sheets**  
**December 31, 2017 and 2016**

(Dollars in thousands)

|   | 2017                | 2016                |
|---|---------------------|---------------------|
| <b>Assets</b>   |                     |                     |
| <b>Current Assets:</b>  |                     |                     |
| Cash and cash equivalents   | \$ 298,894          | \$ 225,743          |
| Receivables, less allowances of \$10,116 in 2017 and \$9,755 in 2016  | 293,541             | 263,408             |
| Inventories (Note 5)  | 172,748             | 173,663             |
| Other current assets  | 23,553              | 22,727              |
| Total current assets  | <u>788,736</u>      | <u>685,541</u>      |
| <b>Property, Plant and Equipment:</b>   |                     |                     |
| Land  | 17,136              | 15,779              |
| Buildings and improvements  | 203,879             | 184,773             |
| Machinery and equipment   | 1,324,415           | 1,241,838           |
| Construction in progress  | 57,856              | 71,088              |
|   | <u>1,603,286</u>    | <u>1,513,478</u>    |
| Less: accumulated depreciation  | <u>(1,004,843)</u>  | <u>(930,764)</u>    |
| Property, plant and equipment, net  | <u>598,443</u>      | <u>582,714</u>      |
| Goodwill, net (Note 4)  | 25,118              | 25,308              |
| Other intangible assets, net (Note 4)   | 18,538              | 22,339              |
| Long-term investments (Note 2)  | 28,270              | 24,055              |
| Other non-current assets  | 11,756              | 13,933              |
| Total Assets  | <u>\$ 1,470,861</u> | <u>\$ 1,353,890</u> |
| <b>Liabilities and Equity</b>   |                     |                     |
| <b>Current Liabilities:</b>   |                     |                     |
| Current maturities of long-term debt (Note 6)   | \$ 22,500           | \$ 28,154           |
| Accounts payable  | 204,977             | 158,316             |
| Accrued liabilities (Note 14)   | 92,776              | 110,795             |
| Total current liabilities   | <u>320,253</u>      | <u>297,265</u>      |
| Deferred income taxes (Note 9)  | 10,962              | 12,497              |
| Long-term debt, less current maturities (Note 6)  | 268,299             | 288,859             |
| Other non-current liabilities (Note 15)   | 130,433             | 119,353             |
| <b>Commitments and Contingencies (Note 16)</b>  |                     |                     |
| <b>Equity (Note 10):</b>  |                     |                     |
| Common stock, \$1 par value; authorized 60,000,000 shares; issued 26,070,787 shares in 2017 and 25,894,782 shares in 2016 | 26,071              | 25,895              |
| Additional paid-in capital  | 170,408             | 158,042             |
| Accumulated other comprehensive loss (Note 19)  | (99,563)            | (127,465)           |
| Retained earnings   | 721,741             | 649,070             |
| Less: Common treasury stock, at cost, 3,561,509 shares in 2017 and 3,470,084 shares in 2016                               | <u>(78,561)</u>     | <u>(70,938)</u>     |
| Total Stepan Company stockholders' equity   | <u>740,096</u>      | <u>634,604</u>      |
| Noncontrolling interests  | 818                 | 1,312               |
| Total equity  | <u>740,914</u>      | <u>635,916</u>      |
| Total Liabilities and Equity  | <u>\$ 1,470,861</u> | <u>\$ 1,353,890</u> |

*The accompanying Notes to Consolidated Financial Statements are an integral part of these statements.*

**Stepan Company**  
**Consolidated Statements of Cash Flows**  
For the years ended December 31, 2017, 2016 and 2015

| <i>(In thousands)</i>   | 2017              | 2016              | 2015              |
|---|-------------------|-------------------|-------------------|
| <b>Cash Flows From Operating Activities</b>                                       |                   |                   |                   |
| Net income  | \$ 91,547         | \$ 86,198         | \$ 76,037         |
| Adjustments to reconcile net income to net cash provided by operating activities: |                   |                   |                   |
| Depreciation and amortization   | 79,022            | 74,967            | 66,985            |
| Deferred compensation   | 4,857             | 16,805            | 6,500             |
| Realized and unrealized gain on long-term investments                             | (4,178)           | (152)             | (21)              |
| Stock-based compensation  | 7,151             | 12,618            | 4,374             |
| Deferred income taxes   | 550               | (8,426)           | 3,001             |
| Other non-cash items  | 4,857             | 7,334             | 3,830             |
| Changes in assets and liabilities, excluding effects of acquisitions:             |                   |                   |                   |
| Receivables, net  | (16,358)          | (17,180)          | 4,160             |
| Inventories   | 5,655             | (3,774)           | 2,851             |
| Other current assets  | (489)             | 1,471             | (3,410)           |
| Accounts payable and accrued liabilities  | 30,476            | 38,261            | 21,219            |
| Pension liabilities   | (1,960)           | 607               | 932               |
| Environmental and legal liabilities   | (1,142)           | 4,561             | (1,398)           |
| Deferred revenues   | (1,125)           | (1,128)           | (1,345)           |
| Net Cash Provided By Operating Activities   | <u>198,863</u>    | <u>212,162</u>    | <u>183,715</u>    |
| <b>Cash Flows From Investing Activities</b>                                       |                   |                   |                   |
| Expenditures for property, plant and equipment                                    | (78,613)          | (103,076)         | (119,349)         |
| Business acquisitions, net of cash acquired (Note 20)                             | (4,339)           | (23,510)          | (5,133)           |
| Proceeds from sale of product line (Note 21)                                      | —                 | —                 | 3262              |
| Other, net  | 269               | (3,935)           | (4,750)           |
| Net Cash Used In Investing Activities   | <u>(82,683)</u>   | <u>(130,521)</u>  | <u>(125,970)</u>  |
| <b>Cash Flows From Financing Activities</b>                                       |                   |                   |                   |
| Revolving debt and bank overdrafts, net   | (6,008)           | 1,292             | (26,217)          |
| Other debt borrowings   | —                 | —                 | 100,000           |
| Other debt repayments   | (20,714)          | (15,069)          | (13,098)          |
| Dividends paid  | (18,907)          | (17,329)          | (16,300)          |
| Company stock repurchased   | (6,000)           | (2,408)           | (2,000)           |
| Stock option exercises  | 3,370             | 4,017             | 777               |
| Other, net  | (2,238)           | (275)             | (673)             |
| Net Cash Provided By (Used In) Financing Activities                               | <u>(50,497)</u>   | <u>(29,772)</u>   | <u>42,489</u>     |
| Effect of Exchange Rate Changes on Cash   | 7,468             | (2,269)           | (9,306)           |
| Net Increase in Cash and Cash Equivalents   | 73,151            | 49,600            | 90,928            |
| Cash and Cash Equivalents at Beginning of Year                                    | 225,743           | 176,143           | 85,215            |
| Cash and Cash Equivalents at End of Year  | <u>\$ 298,894</u> | <u>\$ 225,743</u> | <u>\$ 176,143</u> |
| <b>Supplemental Cash Flow Information</b>   |                   |                   |                   |
| Cash payments of income taxes, net of refunds                                     | \$ 25,661         | \$ 30,581         | \$ 21,784         |
| Cash payments of interest   | \$ 13,889         | \$ 14,730         | \$ 11,943         |

*The accompanying Notes to Consolidated Financial Statements are an integral part of these statements.*



**Stepan Company**  
**Consolidated Statements of Equity**  
**For the years ended December 31, 2017, 2016 and 2015**

| <i>(In thousands, except share and per share amounts)</i>         | STEPAN COMPANY STOCKHOLDERS |                         |   |                           |  |                              |                                    |
|---|-----------------------------|-------------------------|---|---------------------------|--|------------------------------|------------------------------------|
|   | <i>Total</i>                | <i>Common<br/>Stock</i> | <i>Additional<br/>Paid-in<br/>Capital</i> | <i>Treasury<br/>Stock</i> | <i>Accumulated<br/>Other<br/>Comprehensive<br/>Income (Loss)</i> | <i>Retained<br/>Earnings</i> | <i>Noncontrolling<br/>Interest</i> |
| <b>Balance, December 31, 2014</b>                                 | 536,944                     | \$ 25,640               | \$ 139,573                                | \$ (66,262)               | \$ (83,945)  | \$ 520,540                   | \$ 1,398                           |
| Issuance of 45,289 shares of common stock under stock option plan | 777                         | 45                      | 732                                       | —                         | —  | —                            | —                                  |
| Purchase of 41,915 shares of common stock                         | (2,000)                     | —                       | —   | (2,000)                   | —  | —                            | —                                  |
| Stock-based and deferred compensation                             | 3,694                       | 24                      | 3,854                                     | (184)                     | —  | —                            | —                                  |
| Net income  | 76,037                      | —                       | —   | —                         | —  | 75,968                       | 69                                 |
| Other comprehensive income  | (41,210)                    | —                       | —   | —                         | (41,143)   | —                            | (67)                               |
| Cash dividends paid:  |                             |                         |   |                           |  |                              |                                    |
| Common stock (\$0.73 per share)                                   | (16,300)                    | —                       | —   | —                         | —  | (16,300)                     | —                                  |
| Non-qualified stock option and stock award income tax benefit     | 442                         | —                       | 442                                       | —                         | —  | —                            | —                                  |
| <b>Balance, December 31, 2015</b>                                 | <u>\$ 558,384</u>           | <u>\$ 25,709</u>        | <u>\$ 144,601</u>                         | <u>\$ (68,446)</u>        | <u>\$ (125,088)</u>  | <u>\$ 580,208</u>            | <u>\$ 1,400</u>                    |

*The accompanying Notes to Consolidated Financial Statements are an integral part of these statements.*

**Stepan Company**  
**Consolidated Statements of Equity**  
**For the years ended December 31, 2017, 2016 and 2015**

| <i>(In thousands, except share and per share amounts)</i>          | STEPAN COMPANY STOCKHOLDERS |                         |   |                           |  |                              |                                    |
|--|-----------------------------|-------------------------|---|---------------------------|--|------------------------------|------------------------------------|
|  | <i>Total</i>                | <i>Common<br/>Stock</i> | <i>Additional<br/>Paid-in<br/>Capital</i> | <i>Treasury<br/>Stock</i> | <i>Accumulated<br/>Other<br/>Comprehensive<br/>Income (Loss)</i> | <i>Retained<br/>Earnings</i> | <i>Noncontrolling<br/>Interest</i> |
| <b>Balance, December 31, 2015</b>                                  | \$ 558,384                  | \$ 25,709               | \$ 144,601                                | \$ (68,446)               | \$ (125,088)   | \$ 580,208                   | \$ 1,400                           |
| Issuance of 167,675 shares of common stock under stock option plan | 4,017                       | 168                     | 3,849                                     | —                         | —  | —                            | —                                  |
| Purchase of 43,835 shares of common stock                          | (2,408)                     | —                       | —   | (2,408)                   | —  | —                            | —                                  |
| Stock-based and deferred compensation                              | 9,526                       | 18                      | 9,592                                     | (84)                      | —  | —                            | —                                  |
| Net income   | 86,198                      | —                       | —   | —                         | —  | 86,191                       | 7                                  |
| Other comprehensive income   | (2,472)                     | —                       | —   | —                         | (2,377)  | —                            | (95)                               |
| Cash dividends paid:   |                             |                         |   |                           |  |                              |                                    |
| Common stock (\$0.78 per share)                                    | (17,329)                    | —                       | —   | —                         | —  | (17,329)                     | —                                  |
| <b>Balance, December 31, 2016</b>                                  | <b>\$ 635,916</b>           | <b>\$ 25,895</b>        | <b>\$ 158,042</b>                         | <b>\$ (70,938)</b>        | <b>\$ (127,465)</b>  | <b>\$ 649,070</b>            | <b>\$ 1,312</b>                    |

*The accompanying Notes to Consolidated Financial Statements are an integral part of these statements.*

**Stepan Company**  
**Consolidated Statements of Equity**  
**For the years ended December 31, 2017, 2016 and 2015**

| <i>(In thousands, except share and per share amounts)</i>          | STEPAN COMPANY STOCKHOLDERS |                  |                                  |                    |  |                      |                            |
|--|-----------------------------|------------------|----------------------------------|--------------------|--|----------------------|----------------------------|
|  | Total                       | Common<br>Stock  | Additional<br>Paid-in<br>Capital | Treasury<br>Stock  | Accumulated<br>Other<br>Comprehensive<br>Income (Loss) | Retained<br>Earnings | Noncontrolling<br>Interest |
| <b>Balance, December 31, 2016</b>                                  | \$ 635,916                  | \$ 25,895        | \$ 158,042                       | \$ (70,938)        | \$ (127,465)   | \$ 649,070           | \$ 1,312                   |
| Issuance of 104,277 shares of common stock under stock option plan | 3,370                       | 104              | 3,266                            | —                  | —  | —                    | —                          |
| Purchase of 76,790 shares of common stock                          | (6,000)                     | —                | —                                | (6,000)            | —  | —                    | —                          |
| Stock-based and deferred compensation                              | 7,549                       | 72               | 9,100                            | (1,623)            | —  | —                    | —                          |
| Net income   | 91,547                      | —                | —                                | —                  | —  | 91,578               | (31)                       |
| Other comprehensive income   | 27,981                      | —                | —                                | —                  | 27,902   | —                    | 79                         |
| Cash dividends paid:   |                             |                  |                                  |                    |  |                      |                            |
| Common stock (\$0.86 per share)                                    | (18,907)                    | —                | —                                | —                  | —  | (18,907)             | —                          |
| Payment of cash dividends to noncontrolling interest               | (542)                       | —                | —                                | —                  | —  | —                    | (542)                      |
| <b>Balance, December 31, 2017</b>                                  | <b>\$ 740,914</b>           | <b>\$ 26,071</b> | <b>\$ 170,408</b>                | <b>\$ (78,561)</b> | <b>\$ (99,563)</b>                                     | <b>\$ 721,741</b>    | <b>\$ 818</b>              |

*The accompanying Notes to Consolidated Financial Statements are an integral part of these statements.*

## **1. Summary of Significant Accounting Policies**

### **Nature of Operations**

Stepan Company (the Company) operations consist predominantly of the production and sale of specialty and intermediate chemicals, which are sold to other manufacturers for use in a variety of end products. Principal markets for all products are manufacturers of cleaning and washing compounds (including detergents, shampoos, fabric softeners, toothpastes and household cleaners), paints, cosmetics, food, beverages, nutritional supplements, agricultural products, plastics, furniture, automotive equipment, insulation and refrigeration.

### **Use of Estimates**

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America (GAAP) requires Company management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

### **Principles of Consolidation**

The consolidated financial statements include the accounts of the Company and all wholly and majority-owned subsidiaries in which the Company exercises controlling influence. The equity method is used to account for investments in which the Company exercises significant but noncontrolling influence. Intercompany balances and transactions are eliminated in consolidation.

The Company has an 80 percent ownership interest in the Nanjing Stepan Jinling Chemical Limited Liability Company (a joint venture) and exercises controlling influence over the entity. Therefore, Nanjing Stepan Jinling Chemical Limited Liability Company's accounts are included in the Company's consolidated financial statements. The partner's interest in the joint venture's net income is reported in the net income attributable to noncontrolling interests line of the consolidated statements of income. The partner's interest in the net assets of the joint venture is reported in the noncontrolling interests line (a component of equity separate from Company equity) of the consolidated balance sheets.

Prior to 2016, the Company and Nalco Company (a subsidiary of Ecolab Inc.) equally owned and controlled TIORCO, LLC, a joint venture operated out of Denver, Colorado. In October 2015, the Company and Nalco Company made the decision to dissolve TIORCO, LLC. See Note 25 for information regarding the dissolution of the joint venture. Prior to the dissolution of the joint venture, the Company's investment in TIORCO, LLC was accounted for using the equity method and was included in the other non-current assets line on the consolidated balance sheets. The Company's share of joint venture's net earnings was included in the loss from equity in joint ventures line of the consolidated statements of income.

### **Cash and Cash Equivalents**

The Company considers all highly liquid investments with purchased maturities of three months or less to be cash equivalents.

At December 31, 2017, the Company's cash and cash equivalents totaled \$298.9 million including \$15.1 million in a money market fund, each of which was rated AAAM by Standard and Poor's. Cash in U.S. demand deposit accounts totaled \$131.9 million and cash of the Company's non-U.S. subsidiaries held outside the U.S. totaled \$151.9 million as of December 31, 2017.

### **Receivables and Credit Risk**

Receivables are stated net of allowances for doubtful accounts and other allowances and primarily include trade receivables from customers, as well as nontrade receivables from suppliers, governmental tax agencies and others.

The Company is exposed to credit risk on accounts receivable balances. This risk is mitigated by the Company's large, diverse customer base, which is dispersed over various geographic regions and industrial sectors. No single customer comprised more than 10 percent of the Company's consolidated net sales in 2017, 2016 or 2015.

The Company maintains allowances for potential credit losses. Specific customer allowances are recorded when a review of customer creditworthiness and current economic conditions indicate that collection is doubtful. The Company also maintains other customer allowances that occur in the normal course of business. Such allowances are based on historical averages and trade receivable levels.

The following is an analysis of the allowance for doubtful accounts and other accounts receivable allowances for the years ended December 31, 2017, 2016 and 2015:

| <i>(In thousands)</i>                   | 2017             | 2016            | 2015            |
|---|------------------|-----------------|-----------------|
| Balance at January 1                    | \$ 9,755         | \$ 8,046        | \$ 10,011       |
| Provision charged to income             | 45               | 1,917           | 1,106           |
| Accounts written off, net of recoveries | 316              | (208)           | (3,071)         |
| Balance at December 31                  | <u>\$ 10,116</u> | <u>\$ 9,755</u> | <u>\$ 8,046</u> |

## Inventories

Inventories are valued at cost, which is not in excess of market value, and include material, labor and plant overhead costs. The last-in, first-out (LIFO) method is used to determine the cost of the Company's U.S. inventories. The first-in, first-out (FIFO) method is used for all other inventories. Inventories priced at LIFO as of December 31, 2017 and 2016, accounted for 69 and 66 percent of total inventories, respectively.

## Property, Plant and Equipment

Depreciation of property, plant and equipment is provided on a straight-line basis over the estimated useful lives of the assets. Lives used for calculating depreciation are generally 30 years for buildings and 15 years for building improvements. For assets classified as machinery and equipment, lives generally used for calculating depreciation expense range from 10 to 15 years for manufacturing equipment, five to 10 years for furniture and fixtures, three to five years for vehicles and three to 10 years for computer equipment and software. Manufacturing of chemicals is capital intensive with a large majority of the assets included in machinery and equipment representing manufacturing equipment. Major renewals and betterments are capitalized in the property accounts, while maintenance and repairs (\$51,926,000, \$51,530,000, and \$52,549,000 in 2017, 2016 and 2015, respectively), which do not renew or extend the life of the respective assets, are charged to operations as incurred. Land is not depreciated. The cost of property retired or sold and the related accumulated depreciation are removed from the accounts and any resulting gain or loss is reflected in income.

Included in the computer equipment and software component of machinery and equipment are costs related to the acquisition and development of internal-use software. Capitalized costs for internal-use software include external direct costs of materials and services consumed in obtaining and developing the software. For development projects where major internal resources are committed, payroll and payroll-related costs incurred during the application development phase of the project are also capitalized. The capitalized costs are amortized over the useful lives of the software, which are generally three to 10 years. Costs incurred in the preliminary project phase are expensed.

Interest charges on borrowings applicable to major construction projects are capitalized.

Property, plant and equipment assets are tested for impairment when events indicate that impairment may have occurred. See Note 22 for 2016 asset impairments.

## Fair Value Measurements

GAAP defines fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Furthermore, GAAP establishes a framework, in the form of a three-level hierarchy, for measuring fair value that prioritizes the inputs to valuation techniques used to measure fair value. The following describes the hierarchy levels:

**Level 1** - quoted prices in active markets for identical assets and liabilities.

**Level 2** - inputs other than quoted prices included within Level 1 that are directly or indirectly observable for the asset or liability, such as quoted prices for similar assets or liabilities in active markets, quoted prices for identical or similar assets and liabilities in markets that are not active, or other inputs that are observable or can be corroborated by observable market data.

**Level 3** - unobservable inputs which reflect the entity's own assumptions about the assumptions market participants use in pricing the assets and liabilities.

The Company applies the fair value measurement provisions of GAAP to any of its financial assets and liabilities that are carried at fair value on the consolidated balance sheets (see Note 2), its outstanding debt for disclosure purposes (also Note 2) and its pension plan assets (see Note 13).

The Company also applies the fair value measurement requirements to nonrecurring fair value measurements of nonfinancial assets and liabilities recorded in conjunction with business combinations and as part of impairment reviews for goodwill and other long-lived assets.

### **Revenue Recognition**

Revenue is recognized upon shipment of goods to customers at the time title and risk of loss pass to the customer. In a majority of instances this occurs when goods are provided to a carrier for shipment. For arrangements where the Company consigns product to a customer location, revenue is recognized when the customer uses the inventory. The Company records shipping and handling billed to a customer in a sales transaction as revenue. Costs incurred for shipping and handling are reported in cost of sales. Volume and cash discounts due customers are estimated and recorded in the same period as the sales to which the discounts relate and reported as reductions of revenue in the consolidated statements of income.

### **Cost of Sales**

Cost of sales comprises raw material costs (including inbound freight expense to deliver the raw materials), manufacturing plant labor expenses and various manufacturing overhead expenses, such as utility, maintenance, operating supply, amortization and manufacturing asset depreciation expenses. Cost of sales also includes outbound shipping and handling expenses, inter-plant transfer costs, warehouse expenses and rail car rental expenses.

### **Operating Expenses**

Selling expense comprises salary and the related fringe benefit expenses for marketing and sales personnel and operating costs, such as outside agent commissions, automobile rental and travel-related expenses, which support the sales and marketing functions. Bad debt charges and any depreciation expenses related to marketing assets (e.g., computers) are also classified as selling expense.

Administrative expense comprises salary and the related fringe benefit expenses and operating costs for the Company's various administrative functions, which include information services, finance, legal, and human resources. Environmental remediation expenses are also classified as administrative expense.

The Company's research and development costs are expensed as incurred. These expenses are aimed at discovery and commercialization of new knowledge with the intent that such effort will be useful in developing a new product or in bringing about a significant improvement to an existing product or process. Total research and development expenses were \$33,169,000, \$34,856,000, and \$30,315,000 in 2017, 2016 and 2015, respectively. The remainder of research, development and technical service expenses reflected on the consolidated statements of income relates to technical services, which include routine product testing, quality control and sales support service.

Compensation expense or income related to the Company's deferred compensation plans is presented in the deferred compensation expense line in the Consolidated Statements of Income.

### **Environmental Expenditures**

Environmental expenditures that relate to current operations are expensed in cost of sales. Expenditures that mitigate or prevent environmental contamination and that benefit future operations are capitalized as assets and depreciated on a straight-line basis over the estimated useful lives of the assets, which are typically 10 years.

Estimated future expenditures that relate to an existing condition caused by past operations, and which do not contribute to current or future revenue generation, are recorded as liabilities, with the corresponding charge recorded in administrative expenses, when environmental assessments and/or remedial efforts are probable and the cost or range of possible costs can be reasonably estimated. When no amount within the range is a better estimate than any other amount, the minimum amount in the range is accrued. Some of the factors on which the Company bases its estimates include information provided by feasibility studies, potentially responsible party negotiations and the development of remedial action plans. Legal costs related to environmental matters are expensed as incurred (see Note 16 for environmental contingencies).

## Goodwill and Other Intangible Assets

The Company's intangible assets include patents, agreements not to compete, trademarks, customer lists and relationships, technological and manufacturing know-how, supply contracts and goodwill, all of which were acquired as part of business or product line acquisitions. Intangible assets other than goodwill are determined to have either finite or indefinite useful lives. The Company currently has no indefinite-life intangible assets other than goodwill. The values for intangible assets with finite lives are amortized over the useful lives of the assets. Currently, the useful lives for the Company's finite-lived intangible assets are as follows: patents – 10-15 years; non-compete agreements – five years; trademarks – 11 years; customer relationships – 10-13 years; supply contracts – four years and know-how – eight years. In addition, finite-life intangible assets are tested for impairment when events or changes in circumstances indicate that the carrying value of an intangible asset may not be recoverable. Goodwill is not amortized but is tested for impairment at least annually or more frequently if an event occurs or circumstances change that would more likely than not reduce the fair value of a reporting unit to which goodwill relates below the reporting unit's carrying value. See Note 4 for detailed information about goodwill and other intangible assets.

## Income Taxes

Income taxes are accounted for under the asset and liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the financial statements. Under this method, deferred tax assets and liabilities are determined on the basis of the differences between the financial statement and tax bases of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in income in the period that includes the enactment date.

Deferred tax assets are recognized to the extent that we believe these assets are more likely than not to be realized. In making such a determination, we consider all available positive and negative evidence, including future reversals of existing taxable temporary differences, projected future taxable income, tax-planning strategies, and results of recent operations. If we determine that we would be able to realize our deferred tax assets in the future in excess of their net recorded amount, we would make an adjustment to the deferred tax asset valuation allowance, which would reduce the provision for income taxes.

Uncertain tax positions are recorded in accordance with ASC 740 on the basis of a two-step process whereby (1) we determine whether it is more likely than not that the tax positions will be sustained on the basis of the technical merits of the position and (2) for those tax positions that meet the more-likely-than-not recognition threshold, we recognize the largest amount of tax benefit that is more than 50 percent likely to be realized upon ultimate settlement with the related tax authority.

The Company recognizes interest and penalties related to unrecognized tax benefits within the income tax expense line in the accompanying Consolidated Statement of Operations. Accrued interest and penalties are included within the related tax liability line in the Consolidated Balance Sheet.

The SEC staff issued Staff Accounting Bulletin 118 ("SAB 118"), which provides guidance on accounting for the tax effects of the U.S. Tax Cuts and Jobs Act ("Tax Act"). SAB 118 provides a measurement period that should not extend beyond one year from the Tax Act enactment date for companies to complete the accounting under ASC 740. In accordance with SAB 118, a company must reflect the income tax effects of those aspects of the Act for which the accounting under ASC 740 is complete. To the extent that a company's accounting for certain income tax effects of the Tax Act is incomplete but it is able to determine a reasonable estimate, it must record a provisional estimate in the financial statements. If a company cannot determine a provisional estimate to be included in the financial statements, it should continue to apply ASC 740 on the basis of the provisions of the tax laws that were in effect immediately before the enactment of the Tax Act.

See Note 9 for detailed information about income taxes including SAB 118 disclosures.

## Translation of Foreign Currencies

For the Company's consolidated foreign subsidiaries whose functional currency is the local foreign currency, assets and liabilities are translated into U.S. dollars at exchange rates in effect at year end and revenues and expenses are translated at average exchange rates for the year. Any resulting translation adjustments are included in the consolidated balance sheets in the accumulated other comprehensive loss line of stockholders' equity. Gains or losses on foreign currency transactions are reflected in the other, net caption of the consolidated statements of income. The Company has two foreign subsidiaries whose functional currencies are the U.S. dollar. For these subsidiaries, nonmonetary assets and liabilities are translated at historical rates, monetary assets and liabilities are translated at exchange rates in effect at year end, revenues and expenses are translated at average exchange rates for the year and translation gains and losses are included in the other, net caption of the consolidated statements of income.

## **Stock-Based Compensation**

The Company grants stock options, stock awards (including performance-based stock awards) and stock appreciation rights (SARs) to certain employees under its incentive compensation plans. The Company calculates the fair values of stock options, stock awards and SARs on the date such instruments are granted. The fair values of the stock options and stock awards are then recognized as compensation expense over the vesting periods of the instruments. The Company's SARs granted before 2015 settle in cash. The cash-settled SARs are accounted for as liabilities that must be re-measured at fair value at the end of each reporting period. Compensation expense for each reporting period is calculated as the period-to-period change (or portion of the change, depending on the proportion of the vesting period that has been completed at the reporting date) in the fair value of the cash-settled SARs. SARs granted subsequent to 2014 are settled in shares of Company common stock. Compensation expense for the stock-settled SARs is calculated in the same way as compensation expense for stock options. See Note 11 for detailed information about the Company's stock-based compensation.

## **Earnings Per Share**

Basic earnings per share amounts are computed as net income attributable to the Company divided by the weighted-average number of common shares outstanding. Diluted earnings per share amounts are based on the weighted-average number of common shares outstanding plus the weighted-average of net common shares (under the treasury stock method) that would be outstanding assuming the exercise of outstanding stock options and stock-settled SARs, the vesting of unvested stock awards that have no performance or market condition and the issuance of contingent performance stock awards. See Note 18 for detailed information about the Company's earnings per share calculations.

## **Comprehensive Income and Accumulated Other Comprehensive Income**

Comprehensive income includes net income and all other non-owner changes in equity that are not reported in net income. Comprehensive income is disclosed in the consolidated statements of comprehensive income. Accumulated other comprehensive income (AOCI) is reported as a component of stockholders' equity in the Company's consolidated balance sheets. See Note 19 for detailed information regarding changes in the Company's AOCI and reclassifications out of AOCI to income.

## **Segment Reporting**

The Company reports financial and descriptive information about its reportable operating segments. Operating segments are components of the Company that have separate financial information that is regularly evaluated by the chief operating decision maker to assess segment performance and allocate resources. The Company discloses segment revenue, operating income, assets, capital expenditures and depreciation and amortization expenses. Enterprise-wide financial information about the geographic locations in which the Company earns revenues and holds assets is also disclosed (see Note 17).

## **Derivative Instruments**

Derivative instruments are recognized in the consolidated balance sheets as either assets or liabilities measured at fair value. For derivative instruments that are not designated as hedging instruments, changes in the fair values of the derivative instruments are recognized currently in earnings. For derivative instruments designated as hedging instruments, depending on the nature of the hedge, changes in the fair values of the derivative instruments are either offset in earnings against changes in the fair values of the hedged items or recognized in AOCI until the hedged transaction is recognized in earnings. At the time a hedging relationship is designated, the Company establishes the method it will use for assessing the effectiveness of the hedge and the measurement approach for determining the ineffective aspect of the hedge. Company policy prohibits the use of derivative instruments for trading or speculative purposes. See Note 3 for further information regarding the Company's use of derivatives.

At December 31, 2017, the Company held open forward contracts for the purchase of 0.8 million dekatherms of natural gas in 2018 at a cost of \$2,520,970. The Company uses forward contracts to minimize its exposure to volatile natural gas prices. Because the Company anticipates taking delivery of the natural gas for use in its operations, the forward contracts qualify for the normal purchase exception provided under U.S. GAAP for derivative instruments. The Company has elected the exception for such contracts. As a result, the forward contracts are not accounted for as derivative instruments. The cost of natural gas is charged to expense at the time the natural gas is delivered and used.



## Recent Accounting Pronouncements

In May 2014, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) No. 2014-9, *Revenue from Contracts with Customers (Topic 606)*. The new update was later amended by ASU No. 2015-14, *Revenue from Contracts with Customers (Topic 606): Deferral of the Effective Date*. The standard outlines a single comprehensive model for entities to use in accounting for revenue arising from contracts with customers. In addition, the ASU requires expanded disclosures about revenue recognition that enable the users of the financial statements to understand the nature, amount, timing and uncertainty of revenue and cash flows arising from contracts with customers. ASU No. 2014-09 supersedes most of the previous revenue recognition guidance. For public entities, the new guidance, as amended, is effective for annual reporting periods beginning after December 15, 2017, including interim periods within that reporting period. The Company chose the modified retrospective approach to adopt the requirements of the new standard. The Company has finalized its review of existing contracts and determined the effect of the adoption of ASU No. 2014-9 on the Company's financial statements. The adoption of the new guidance will not materially affect the Company's financial position, results of operations or cash flows. The Company's future revenue recognition disclosures will be enhanced to comply with the expanded disclosure requirements of ASU No. 2014-9.

In February 2016, the FASB issued ASU No. 2016-2, *Leases (Topic 842)*. This guidance requires a dual approach for lessee accounting whereby a lessee will account for lease arrangements with terms greater than 12 months as either finance leases or operating leases. Both finance leases and operating leases will be recognized on the lessee's balance sheet as right-of-use assets and corresponding lease liabilities, with differing methodologies for income statement recognition. In addition, the ASU requires expanded qualitative and quantitative disclosures about the Company's lease arrangements. This guidance is effective for public business entities for fiscal years, and interim periods within those years, beginning after December 15, 2018. Early adoption is permitted. A modified retrospective approach is required for all leases existing or entered into after the beginning of the earliest comparative period in the consolidated financial statements. Most of the Company's operating leases will be required to be placed on the balance sheet. The Company is assessing the quantitative impact that adoption of ASU No. 2016-2 will have on its financial position, results of operations and cash flows.

In August 2016, the FASB issued ASU No. 2016-15, *Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments*, which adds or clarifies guidance on the classification of eight specific types of cash flows. The update is intended to reduce the existing diversity in practice with respect to the specific cash flow items. The amendments in ASU No. 2016-15 are effective for fiscal years beginning after December 15, 2017, including interim periods within those fiscal years. Early adoption is permitted. The Company determined that the adoption of ASU No. 2016-15 will not have an impact on the Company's financial position or results of operations and will have an immaterial impact on cash flow presentation.

In October 2016, the FASB issued ASU No. 2016-16, *Income Taxes (Topic 740): Intra-Entity Transfers of Assets Other Than Inventory*. The update requires an entity to recognize the income tax consequences of an intra-entity transfer of an asset other than inventory when the transfer occurs. Current accounting guidance prohibits the recognition of current and deferred income taxes for an intra-entity asset transfer until the asset has been sold to an outside party. The amendments in ASU No. 2016-16 are effective for fiscal years beginning after December 15, 2017, including interim periods within those fiscal years. Early adoption is permitted for all entities as of the beginning of an annual reporting period for which financial statements (interim or annual) have not been issued or made available for issuance. That is, earlier adoption should be in the first interim period if an entity issues interim financial statements. The amendments in this update should be applied on a modified retrospective basis through a cumulative-effect adjustment directly to retained earnings as of the beginning of the period of adoption. The Company determined that this pronouncement will have an immaterial impact on the Company's financial position, results of operations and cash flows.

In January 2017, the FASB issued ASU No. 2017-4, *Intangibles – Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment*, which eliminates Step 2 from the goodwill impairment test. When an indication of impairment was identified after performing the first step of the goodwill impairment test, Step 2 required that an entity determine the fair value at the impairment testing date of its assets and liabilities (including unrecognized assets and liabilities) using the same procedure that would be required in determining the fair value of assets acquired and liabilities assumed in a business combination. Under the amendments in ASU No. 2017-4, an entity would perform its annual, or interim, goodwill impairment test by comparing the fair value of a reporting unit with its carrying value. An entity would recognize an impairment charge for the amount by which the carrying value exceeds the reporting unit's fair value. In addition, an entity must consider income tax effects from any tax deductible goodwill on the carrying amount of the reporting unit when measuring the goodwill impairment loss, if applicable. A public business entity that is a U.S. Securities and Exchange Commission filer should adopt the amendments in ASU No. 2017-4 for its annual, or any interim, goodwill impairment tests in fiscal years beginning after December 15, 2019. The adoption of the guidance in ASU No. 2017-4 is not expected to have a material impact on the Company's financial position, results of operations or cash flows.

In March 2017, the FASB issued ASU No. 2017-7, *Compensation – Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost*, which amends existing guidance for the income statement presentation of the components of net periodic benefit cost for an entity's sponsored defined benefit pension and other postretirement plans. The amended guidance requires entities to include the current service component of net periodic benefit cost in employee compensation costs in the income statement and to include all other components elsewhere in the income statement outside of income from operations. In addition, only the service cost component of net benefit cost is eligible for capitalization. For the Company, ASU No. 2017-7 is effective for interim and annual periods beginning after December 15, 2017, with early adoption permitted as of the beginning of any annual period for which an entity's financial statements have not been issued. The requirements for the separate presentation of the service cost component and the other components of net periodic benefit cost must be adopted on a retrospective basis. The requirement to capitalize only the service component of net periodic benefit cost must be adopted on a prospective basis. Adoption of ASU No. 2017-7 will affect the presentation of the Company's results of operations but not the Company's financial position or cash flows.

In August 2017, the FASB issued ASU No. 2017-12, *Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities*, which amends previous guidance regarding hedge accounting recognition and presentation requirements. The updated guidance alters the hedge accounting model to make achieving hedge accounting easier for an entity and to have such accounting better reflect an entity's risk management activities. ASU No. 2017-12 also adds new, and amends previous, disclosure requirements. For the Company, ASU No. 2017-12 is effective for interim and annual periods beginning after December 15, 2018. Early adoption is permitted. Entities must apply a modified retrospective approach to existing hedging relationships as of the adoption date. At present, because the Company has not entered into any transactions designated as accounting hedges, adoption of ASU No. 2017-12 is not expected to have a material effect on the Company's financial position, results of operations and cash flows.

In January 2018, the FASB issued ASU No. 2018-01, *Leases (Topic 842): Land Easement Practical Expedient for Transition to Topic 842*, which permits an entity to select an optional transition practical expedient to not evaluate under Topic 842 existing or expired land easements that were not previously accounted for as leases under the current leases guidance in Topic 840. An entity that elects this practical expedient should apply the practical expedient consistently to all of its existing or expired land easements that were not previously accounted for as leases under Topic 840. Once an entity adopts Topic 842, it should apply that Topic prospectively to all new (or modified) land easements to determine whether the arrangement should be accounted for as a lease. An entity that does not elect this practical expedient should evaluate all existing or expired land easements in connection with the adoption of the new lease requirements in Topic 842 to assess whether they meet the definition of a lease. An entity should continue to apply its current accounting policy for accounting for land easements that existed before the entity's adoption of Topic 842. This update is effective for public business entities for fiscal years, and interim periods within those years, beginning after December 15, 2018. Early adoption is permitted. The Company is assessing the quantitative impact that adoption of ASU No. 2018-01 will have on its financial position, results of operations and cash flows.

## **2. Fair Value Measurements**

The following were the financial instruments held by the Company at December 31, 2017 and 2016, and the methods and assumptions used to estimate the instruments' fair values:

### *Cash and cash equivalents*

Carrying value approximated fair value because of the short maturity of the instruments.

### *Derivative assets and liabilities*

Derivative assets and liabilities include the foreign currency exchange and interest rate contracts discussed in Note 3. Fair value and carrying value were the same because the contracts were recorded at fair value. The fair values of the foreign currency contracts were calculated as the difference between the applicable forward foreign exchange rates at the reporting date and the contracted foreign exchange rates multiplied by the contracted notional amounts. The fair values of the interest rate swaps were calculated as the difference between the contracted swap rate and the current market replacement swap rate multiplied by the present value of one basis point for the notional amount of the contract. See the table that follows the financial instrument descriptions for the reported fair values of derivative assets and liabilities.

### Long-term investments

Long-term investments included the mutual fund assets the Company held to fund a portion of its deferred compensation liabilities and all of its non-qualified supplemental executive defined contribution obligations (see the defined contribution plans section of Note 13). Fair value and carrying value were the same because the mutual fund assets were recorded at fair value in accordance with the FASB's fair value option guidance. Fair values for the mutual funds were calculated using the published market price per unit at the reporting date multiplied by the number of units held at the reporting date. See the table that follows the financial instrument descriptions for the reported fair value of long-term investments.

### Debt obligations

The fair value of debt with original maturities greater than one year comprised the combined present values of scheduled principal and interest payments for each of the various loans, individually discounted at rates equivalent to those which could be obtained by the Company for new debt issues with durations equal to the average life to maturity of each loan. The fair values of the remaining Company debt obligations approximated their carrying values due to the short-term nature of the debt. The Company's fair value measurements for debt fall in level 2 of the fair value hierarchy.

At December 31, 2017 and 2016, the fair values and related carrying values of debt, including current maturities, were as follows (the fair value and carrying value amounts are presented without regard to unamortized debt issuance costs of \$987,000, and \$1,141,000 as of December 31, 2017 and 2016, respectively):

| <i>(In thousands)</i> | December 31 |            |
|-----------------------|-------------|------------|
|                       | 2017        | 2016       |
| Fair value            | \$ 293,272  | \$ 316,364 |
| Carrying value        | 291,786     | 318,154    |

The following tables present financial assets and liabilities measured on a recurring basis at fair value as of December 31, 2017 and 2016, and the level within the fair value hierarchy in which the fair value measurement falls:

| <i>(In thousands)</i>      | December 2017 | Level 1   | Level 2 | Level 3 |
|----------------------------|---------------|-----------|---------|---------|
| Mutual fund assets         | \$ 28,270     | \$ 28,270 | \$ —    | \$ —    |
| Derivative assets:         |               |           |         |         |
| Foreign currency contracts | 335           | —         | 335     | —       |
| Total assets at fair value | \$ 28,605     | \$ 28,270 | \$ 335  | \$ —    |
| Derivative liabilities:    |               |           |         |         |
| Foreign currency contracts | \$ 94         | \$ —      | \$ 94   | \$ —    |

| <i>(In thousands)</i>           | December 2016 | Level 1   | Level 2 | Level 3 |
|---------------------------------|---------------|-----------|---------|---------|
| Mutual fund assets              | \$ 24,055     | \$ 24,055 | \$ —    | \$ —    |
| Derivative assets:              |               |           |         |         |
| Foreign currency contracts      | 453           | —         | 453     | —       |
| Total assets at fair value      | \$ 24,508     | \$ 24,055 | \$ 453  | \$ —    |
| Derivative liabilities:         |               |           |         |         |
| Foreign currency contracts      | \$ 469        | \$ —      | \$ 469  | \$ —    |
| Total liabilities at fair value | \$ 469        | \$ —      | \$ 469  | \$ —    |

### 3. Derivative Instruments

The Company is exposed to certain risks relating to its ongoing business operations. The primary risk managed by the use of derivative instruments is foreign currency exchange risk. The Company holds forward foreign currency exchange contracts that are not designated as any type of accounting hedge as defined by U.S. generally accepted accounting principles. The Company uses these contracts to manage its exposure to exchange rate fluctuations on certain Company subsidiary cash, accounts receivable, accounts payable and other obligation balances that are denominated in currencies other than the entities' functional currencies. The forward foreign exchange contracts are recognized on the balance sheet as either an asset or a liability measured at fair value. Gains and losses arising from recording the foreign exchange contracts at fair value are reported in earnings as offsets to the losses and gains reported in earnings arising from the re-measurement of the receivable and payable balances into the applicable functional currencies. At December 31, 2017 and 2016, the Company had open forward foreign currency exchange contracts, all with durations of one to three months, to buy or sell foreign currencies with a U.S. dollar equivalent of \$41,196,629 and \$33,372,000, respectively.

The Company held no interest rate contracts at December 31, 2017 or December 31, 2016. The Company held an interest rate swap contract with a notional value of \$3,724,000 at December 31, 2015. In the fourth quarter of 2016, the underlying loan that was hedged with the interest rate swap contract was paid in full, and the contract was terminated. The loss realized from the termination of the interest rate swap was immaterial.

The fair values of the derivative instruments held by the Company on December 31, 2017, and December 31, 2016, are disclosed in Note 2. Derivative instrument gains and losses for the years ended December 31, 2017, 2016 and 2015, were immaterial. For amounts reclassified out of AOCI into earnings for the years ended December 31, 2017, 2016 and 2015, see Note 19.

### 4. Goodwill and Other Intangible Assets

The changes in the carrying value of goodwill for the years ended December 31, 2017 and 2016, were as follows:

| (In thousands)                            | Surfactants Segment |           | Polymer Segment |          | Specialty Products Segment |        | Total     |           |
|---|---------------------|-----------|-----------------|----------|----------------------------|--------|-----------|-----------|
|   | 2017                | 2016      | 2017            | 2016     | 2017                       | 2016   | 2017      | 2016      |
| Balance as of January 1                   |                     |           |                 |          |                            |        |           |           |
| Goodwill                                  | \$ 22,958           | \$ 8,869  | \$ 5,334        | \$ 5,380 | \$ 483                     | \$ 483 | \$ 28,775 | \$ 14,732 |
| Accumulated impairment loss               | (3,467)             | (3,467)   | —               | —        | —                          | —      | (3,467)   | (3,467)   |
| Goodwill, net                             | 19,491              | 5,402     | 5,334           | 5,380    | 483                        | 483    | 25,308    | 11,265    |
| Goodwill acquired (a)                     | —                   | 14,327    | —               | —        | —                          | —      | —         | 14,327    |
| Goodwill measurement period adjustment(a) | (120)               | —         | —               | —        | —                          | —      | (120)     | —         |
| Foreign currency translation              | (211)               | (238)     | 141             | (46)     | —                          | —      | (70)      | (284)     |
| Balance as of December 31                 |                     |           |                 |          |                            |        |           |           |
| Goodwill                                  | 22,627              | 22,958    | 5,475           | 5,334    | 483                        | 483    | 28,585    | 28,775    |
| Accumulated impairment loss               | (3,467)             | (3,467)   | —               | —        | —                          | —      | (3,467)   | (3,467)   |
| Goodwill, net                             | \$ 19,160           | \$ 19,491 | \$ 5,475        | \$ 5,334 | \$ 483                     | \$ 483 | \$ 25,118 | \$ 25,308 |

(a) See Note 20 for information regarding the goodwill acquired in a business combination.

The Company tests its goodwill balances for impairment in the second quarter of each calendar year. The 2017 and 2016 tests indicated no impairment.

The following table presents the components of other intangible assets, all of which have finite lives, as of December 31, 2017 and 2016. The year-over-year changes in gross carrying values mainly resulted from the effects of foreign currency translation.

| <i>(In thousands)</i>           | Gross Carrying Value |                  | Accumulated Amortization |                  |
|---------------------------------|----------------------|------------------|--------------------------|------------------|
|                                 | December 31          |                  | December 31              |                  |
|                                 | 2017                 | 2016             | 2017                     | 2016             |
| <b>Other Intangible Assets:</b> |                      |                  |                          |                  |
| Patents                         | \$ 6,947             | \$ 6,947         | \$ 3,893                 | \$ 3,294         |
| Non-compete agreements          | 453                  | \$ 461           | 113                      | \$ 15            |
| Trademarks                      | 4,087                | 4,087            | 1,870                    | 1,525            |
| Customer lists                  | 12,150               | 12,238           | 4,299                    | 3,337            |
| Supply contract                 | 2,476                | 2,521            | 774                      | 105              |
| Know-how (a)                    | 8,043                | 8,043            | 4,669                    | 3,682            |
| <b>Total</b>                    | <b>\$ 34,156</b>     | <b>\$ 34,297</b> | <b>\$ 15,618</b>         | <b>\$ 11,958</b> |

(a) Know-how includes intellectual property rights covering proprietary information, written formulae, trade secrets or secret processes, inventions and developmental products (whether patentable or not), discoveries, improvements, compositions, manufacturing processes, manuals, specifications and technical data

Aggregate amortization expense for the years ended December 31, 2017, 2016 and 2015, was \$3,711,000, \$2,845,000, and \$2,816,000, respectively. Estimated amortization expense for identifiable intangibles assets for each of the five succeeding fiscal years is as follows:

| <i>(In thousands)</i>   |          |
|-------------------------|----------|
| For year ended 12/31/18 | \$ 3,584 |
| For year ended 12/31/19 | 3,584    |
| For year ended 12/31/20 | 3,435    |
| For year ended 12/31/21 | 2,025    |
| For year ended 12/31/22 | 1,368    |

## 5. Inventories

The composition of inventories was as follows:

| <i>(In thousands)</i>    | December 31       |                   |
|--------------------------|-------------------|-------------------|
|                          | 2017              | 2016              |
| Finished products        | \$ 117,529        | \$ 127,597        |
| Raw materials            | 55,219            | 46,066            |
| <b>Total inventories</b> | <b>\$ 172,748</b> | <b>\$ 173,663</b> |

Inventories are primarily priced using the last-in, first-out (LIFO) inventory valuation method. If the first-in, first-out (FIFO) inventory valuation method had been used for all inventories, inventory balances would have been approximately \$33,518,000 and \$25,872,000 higher than reported at December 31, 2017 and 2016, respectively.

## 6. Debt

Debt comprised the following at December 31, 2017 and 2016:

| <i>(In thousands)</i>  | Maturity<br>Dates | December 31,<br>2017 | December 31,<br>2016 |
|--|-------------------|----------------------|----------------------|
| <b>Unsecured private placement notes</b>   |                   |                      |                      |
| 3.95% (net of unamortized debt issuance cost of \$346 and \$382 for 2017 and 2016, respectively) | 2021-2027         | \$ 99,654            | \$ 99,618            |
| 3.86% (net of unamortized debt issuance cost of \$343 and \$390 for 2017 and 2016, respectively) | 2019-2025         | 99,657               | 99,610               |
| 4.86% (net of unamortized debt issuance cost of \$191 and \$225 for 2017 and 2016, respectively) | 2018-2023         | 55,523               | 64,775               |
| 5.88% (net of unamortized debt issuance cost of \$95 and \$116 for 2017 and 2016, respectively)  | 2018-2022         | 28,476               | 34,170               |
| 5.69% (net of unamortized debt issuance cost of \$12 and \$28 for 2017 and 2016, respectively)   | 2018              | 5,703                | 11,400               |
| <b>Debt of foreign subsidiaries</b>  |                   |                      |                      |
| Unsecured bank debt, foreign currency  | 2018              | 1,786                | 432                  |
| Secured bank debt, foreign currency  | 2018              | —                    | 7,008                |
| <b>Total debt</b>  |                   | <b>\$ 290,799</b>    | <b>\$ 317,013</b>    |
| <b>Less current maturities</b>   |                   | <b>22,500</b>        | <b>28,154</b>        |
| <b>Long-term debt</b>  |                   | <b>\$ 268,299</b>    | <b>\$ 288,859</b>    |

The majority of the Company's long-term debt financing is composed of unsecured private placement notes issued to insurance companies, totaling \$290,000,000 as of December 31, 2017. These notes are denominated in U.S. dollars and have fixed interest rates ranging from 3.86 percent to 5.88 percent. At inception, these notes had final maturities of 12 to 13 years with remaining amortization scheduled from 2018 to 2027.

At December 31, 2017 the Company had a committed \$125,000,000 multi-currency five-year revolving credit agreement. This unsecured facility was the Company's primary source of short-term borrowings and the Company was able to draw on this agreement as needed to finance certain acquisitions, working capital and for general corporate purposes. This facility was scheduled to expire on July 10, 2019. On December 31, 2017, the Company had outstanding letters of credit of \$4,677,000 and no borrowings under this agreement with \$120,323,000 remaining available. On January 30, 2018, the Company entered into a five year committed \$350,000,000 multi-currency revolving credit facility that matures on January 30, 2023 with a syndicate of banks. This credit facility replaced the Company's prior \$125,000,000 credit agreement. See Note 26 - Subsequent Events for more details.

Loans under the credit agreement in place at December 31, 2017 could have been incurred, at the discretion of the Company, with terms to maturity of 1 to 180 days. The Company may have chosen from several interest rate options, including (1) LIBOR applicable to each currency plus spreads ranging from 0.975 percent to 1.525 percent, depending on the Company's leverage ratio or (2) the prime rate plus zero percent to 0.525 percent, depending on the leverage ratio. The credit agreement required the Company to pay a facility fee ranging from 0.150 percent to 0.350 percent, which also depended on the leverage ratio. The credit agreement required the maintenance of certain financial ratios and compliance with certain other covenants that are similar to the Company's existing debt agreements, including net worth, interest coverage and leverage financial covenants and limitations on restricted payments, indebtedness and liens.

In addition to the unsecured private placement notes and the revolving credit facility, the Company's foreign subsidiaries had \$1,786,000 of unsecured debt at December 31, 2017.

The Company's loan agreements in the U.S. and Philippines contain provisions, which, among others, require maintenance of certain financial ratios and place limitations on additional debt, investments and payment of dividends. Based on the loan agreement provisions that place limitations on dividend payments, unrestricted retained earnings (i.e., retained earnings available for dividend distribution) were \$190,495,000 and \$157,606,000 at December 31, 2017, and 2016, respectively.

Debt at December 31, 2017, matures as follows: \$22,500,000 in 2018; \$29,286,000 in 2019; \$29,286,000 in 2020; \$43,572,000 in 2021; \$43,572,000 in 2022 and \$123,570,000 after 2022. Debt maturing in 2018 includes \$20,714,000 of scheduled repayments under long-term debt agreements and \$1,786,000 of debt of foreign subsidiaries under short-term working capital loans. These short-term loan agreements are routinely renewed, but could be supplemented or replaced, if necessary, by the Company's \$350,000,000 revolving credit agreement entered into on January 30, 2018.

Net interest expense for the years ended December 31, 2017, 2016 and 2015, comprised the following:

| <i>(In thousands)</i> | 2017             | 2016             | 2015             |
|-----------------------|------------------|------------------|------------------|
| Interest expense      | \$ 14,428        | \$ 15,240        | \$ 15,488        |
| Interest income       | (2,075)          | (1,247)          | (217)            |
|                       | 12,353           | 13,993           | 15,271           |
| Capitalized interest  | (909)            | (788)            | (738)            |
| Interest expense, net | <u>\$ 11,444</u> | <u>\$ 13,205</u> | <u>\$ 14,533</u> |

### 7. Leased Properties

The Company leases certain property and equipment (primarily transportation equipment, buildings and land) under operating leases, which are denominated in local currencies. Total rental expense was \$10,807,000, \$8,595,000, and \$7,097,000 in 2017, 2016 and 2015, respectively.

Consolidated Company minimum future rental payments under operating leases with initial or remaining noncancelable lease terms in excess of one year as of December 31, 2017, are:

| <i>(In thousands)</i>                |                  |
|--------------------------------------|------------------|
| Year                                 |                  |
| 2018                                 | \$ 8,950         |
| 2019                                 | 6,659            |
| 2020                                 | 5,967            |
| 2021                                 | 4,683            |
| 2022                                 | 4,099            |
| Subsequent to 2022                   | 20,173           |
| Total minimum future rental payments | <u>\$ 50,531</u> |

### 8. Other, Net

Other, net in the consolidated statements of income included the following for the years ended December 31, 2017, 2016 and 2015:

| <i>(In thousands)</i>                        | 2017            | 2016          | 2015            |
|--|-----------------|---------------|-----------------|
| Foreign exchange gains (losses)              | \$ (646)        | \$ (14)       | \$ 686          |
| Investment income                            | 989             | 690           | 877             |
| Realized and unrealized gains on investments | 4,178           | 152           | 21              |
| Other, net                                   | <u>\$ 4,521</u> | <u>\$ 828</u> | <u>\$ 1,584</u> |

## 9. Income Taxes

The provisions for taxes on income and the related income before taxes for the years ended December 31, 2017, 2016 and 2015, were as follows:

| <i>(In thousands)</i>      | 2017              | 2016              | 2015              |
|----------------------------|-------------------|-------------------|-------------------|
| <b>Taxes on Income</b>     |                   |                   |                   |
| Federal                    |                   |                   |                   |
| Current                    | \$ 32,299         | \$ 18,811         | \$ 7,697          |
| Deferred                   | (1,744)           | (3,192)           | 3,890             |
| State                      |                   |                   |                   |
| Current                    | 1,764             | 2,273             | 1,559             |
| Deferred                   | 192               | (1,171)           | (225)             |
| Foreign                    |                   |                   |                   |
| Current                    | 13,077            | 14,960            | 14,562            |
| Deferred                   | 2,102             | (4,063)           | (664)             |
| Total                      | <u>\$ 47,690</u>  | <u>\$ 27,618</u>  | <u>\$ 26,819</u>  |
| <b>Income before Taxes</b> |                   |                   |                   |
| Domestic                   | \$ 72,662         | \$ 64,675         | \$ 48,721         |
| Foreign                    | 66,575            | 49,141            | 54,135            |
| Total                      | <u>\$ 139,237</u> | <u>\$ 113,816</u> | <u>\$ 102,856</u> |

On December 22, 2017, the U.S. government enacted comprehensive tax legislation commonly referred to as the Tax Cuts and Jobs Act (“Tax Act”). The Tax Act makes broad and complex changes to the U.S. tax code that affects the Company’s income tax provision for 2017, including, but not limited to, (1) a one-time transition tax (“Transition Tax”) on certain unrepatriated earnings of foreign subsidiaries that is payable over eight years and (2) bonus depreciation that will allow for full expensing of qualified property.

The Tax Act also establishes new tax laws that will affect the Company’s income tax provision for 2018, including, but not limited to, (1) reduction of the U.S. federal corporate income tax rate; (2) a general elimination of U.S. federal income taxes on dividends from foreign subsidiaries; (3) a new provision designed to tax global intangible low-taxed income, which allows for the possibility of using foreign tax credits (FTCs) and a deduction of up to 50 percent to offset the income tax liability (subject to some limitations); (4) the creation of the base erosion anti-abuse tax, a new minimum tax; (5) limitations on the use of FTCs to reduce the U.S. income tax liability; (6) limitations on net operating losses (NOLs) generated after December 31, 2017, to 80 percent of taxable income; (7) a new limitation on deductible interest expense; (8) elimination of the corporate alternative minimum tax; (9) the repeal of the domestic production activity deduction; and (10) limitations on the deductibility of certain executive compensation.



The variations between the effective and statutory U.S. federal income tax rates are summarized as follows:

| <i>(In thousands)</i>   | <i>2017</i><br><i>Amount</i> | <i>%</i>    | <i>2016</i><br><i>Amount</i> | <i>%</i>    | <i>2015</i><br><i>Amount</i> | <i>%</i>    |
|---|------------------------------|-------------|------------------------------|-------------|------------------------------|-------------|
| Federal income tax provision at statutory tax rate                | \$ 48,733                    | 35.0        | \$ 39,836                    | 35.0        | \$ 36,000                    | 35.0        |
| State tax provision on income less applicable federal tax benefit | 1,271                        | 0.9         | 716                          | 0.6         | 867                          | 0.8         |
| Foreign income taxed at different rates                           | (8,075)                      | (5.8)       | (6,325)                      | (5.6)       | (5,060)                      | (4.9)       |
| Repatriation of foreign earnings                                  | (1,054)                      | (0.8)       | 14                           | —           | 21                           | —           |
| Unrecognized tax benefits   | (47)                         | 0.0         | 23                           | —           | 1,536                        | 1.5         |
| Domestic production activities deduction                          | (1,339)                      | (1.0)       | (1,633)                      | (1.4)       | (884)                        | (0.9)       |
| Nontaxable foreign interest income                                | (2,073)                      | (1.5)       | (2,030)                      | (1.8)       | (2,106)                      | (2.0)       |
| U.S. tax reform, net impact (a)                                   | 14,807                       | 10.7        | —                            | —           | —                            | —           |
| Change in accounting method for depreciation                      | (893)                        | (0.6)       | —                            | —           | —                            | —           |
| Stock based compensation, excess tax benefits(b)                  | (2,254)                      | (1.6)       | (1,878)                      | (1.7)       | —                            | —           |
| U.S. tax credits  | (1,204)                      | (0.9)       | (1,100)                      | (1.0)       | (3,465)                      | (3.4)       |
| Non-deductible expenses and other items, net (c)                  | (182)                        | (0.1)       | (5)                          | 0.2         | (90)                         | —           |
| <b>Total income tax provision</b>                                 | <b>\$ 47,690</b>             | <b>34.3</b> | <b>\$ 27,618</b>             | <b>24.3</b> | <b>\$ 26,819</b>             | <b>26.1</b> |

- (a) Does not include state tax impacts, which are included in state tax provision on income less applicable federal tax benefit.
- (b) Excess tax benefits related to employee share-based payment transactions recognized in 2017 and 2016 resulting from the adoption of ASU No. 2016-9. There is no effect for 2015 because the recognition of excess tax benefits in the tax provision is to be done only on a prospective basis, beginning with the year of adopting the new guidance, which was 2016.
- (c) Certain 2016 and 2015 amounts have been reclassified to conform to the current year presentation.

For various reasons that are discussed more fully below, we have not completed our accounting for the income tax effects of certain elements of the Tax Act. If we were able to make reasonable estimates of the effects of elements for which our analysis is not yet complete, we recorded provisional adjustments. If we were not yet able to make reasonable estimates of the impact of certain elements, we have not recorded any adjustments related to those elements and have continued accounting for them in accordance with ASC 740 on the basis of the tax laws in effect before the Tax Act.

We were able to make reasonable estimates of certain effects and, therefore, recorded the following provisional adjustments:

**Reduction of US federal corporate tax rate:** The Tax Act reduces the corporate tax rate to 21 percent, effective January 1, 2018. For certain of our deferred tax assets, we have recorded a provisional decrease of \$31.8 million, which is offset by a provisional \$36.3 million decrease in our deferred tax liabilities, resulting in a corresponding net adjustment to deferred income tax benefit of \$4.5 million attributable to the rate reduction for the year ended December 31, 2017. While we are able to make a reasonable estimate of the impact of the reduction in corporate rate, it may be affected by other analyses related to the Tax Act, including, but not limited to, our calculation of deemed repatriation of deferred foreign income and the state tax effect of adjustments made to federal temporary differences.

**Deemed Repatriation Transition Tax:** The Transition Tax is a tax on previously untaxed accumulated and current earnings and profits (E&P) of certain of our foreign subsidiaries. To determine the amount of the Transition Tax, we must determine, in addition to other factors, the amount of post-1986 E&P of the relevant subsidiaries, as well as the amount of non-U.S. income taxes paid on such earnings. We are able to make a reasonable estimate of the Transition Tax and recorded a provisional Transition Tax obligation of \$19.4 million. However, we are continuing to gather additional information to more precisely compute the amount of the Transition Tax.

Pursuant to the Tax Act, the Company will make an election to pay this liability in installments over eight years. Consequently, \$18.1 million of this liability has been recorded as noncurrent taxes payable and \$1.3 million as current taxes payable in the Company's consolidated balance sheet as of December 31, 2017.

We were not yet able to make reasonable estimates of the following effects and, therefore, no provisional adjustments were recorded:

**Global intangible low taxed income (“GILTI”):** The Tax Act requires the Company to include certain income (GILTI) of its foreign subsidiaries in gross income. The amount of this inclusion is determined under complex rules, and depends, in part, on the character of income earned by the foreign subsidiaries, the tax bases of those subsidiaries’ assets and the amount of certain interest expenses.

Under U.S. GAAP, we are allowed to make an accounting policy choice of either (1) treating taxes due on future income inclusions related to GILTI as a current-period expense when incurred (the “period cost method”) or (2) accounting for such amounts in measuring deferred taxes (the “deferred method”). Our selection of an accounting policy with respect to the new GILTI tax rules will depend, in part, on analyzing our global income to determine whether we expect to have future income inclusions related to GILTI and, if so, what the impact is expected to be. These determinations depend not only on our current structure and estimated future results of global operations but also our intent and ability to modify our structure and/or our business. Therefore, we have not made any adjustments or estimates related to any potential tax liabilities related to GILTI in our financial statements and have not made a policy decision regarding whether to record deferred tax liabilities related to GILTI.

**Cost recovery:** We have not yet completed all of the computations necessary or completed an inventory of our 2017 expenditures that qualify for immediate expensing. Therefore, we have not made any adjustments or estimates related to any potential tax liabilities in our financial statements related to immediate expensing.

**Deductibility of Executive Compensation:** The Tax Act amended certain aspects of Section 162(m) of the Internal Revenue Code (“Section 162(m)”), which generally disallows a tax deduction for annual compensation paid to “covered employees” in excess of \$1 million, including eliminating an exception to the deduction limit for “qualified performance-based compensation”, effective for tax years beginning after December 31, 2017. The Tax Act provides for a grandfather provision, pursuant to which remuneration that is provided pursuant to a written binding contract in effect on November 2, 2017, and which has not been modified in any material respect on or after that date, will not be subject to the amendments made to Section 162(m) by the Tax Act and will remain eligible for deduction as qualified performance-based compensation. To the extent available, we intend to continue to treat “qualified performance-based compensation” that is grandfathered under the Tax Act as deductible compensation. We have not yet completed our evaluation of our existing compensation arrangements to determine whether any amounts payable to our Section 162(m) covered employees may continue to constitute qualified performance-based compensation under Section 162(m) and qualify under the grandfather provision. Therefore, we have not made any adjustments or estimates related to any potential tax liabilities in our financial statements related to the amendments to Section 162(m).

**Valuation allowances:** The Company must assess whether valuation allowances assessments are affected by various aspects of the Tax Act (e.g., GILTI inclusions and new categories of FTCs). Since, as discussed herein, the Company has recorded no amounts related to certain portions of the Tax Act, any corresponding determination of the need for or change in a valuation allowance has not been completed and no changes to valuation allowances as a result of the Tax Act have been recorded.

At December 31, 2017 and 2016, the tax effects of significant temporary differences representing deferred tax assets and liabilities were as follows:

| <i>(In thousands)</i>   | 2017               | 2016               |
|---|--------------------|--------------------|
| <b>Deferred Tax Liabilities:</b>                              |                    |                    |
| Depreciation  | \$ (51,244)        | \$ (75,973)        |
| Unrealized foreign exchange loss                              | (734)              | (631)              |
| Other   | (2,066)            | (2,756)            |
|   | <u>\$ (54,044)</u> | <u>\$ (79,360)</u> |
| <b>Deferred Tax Assets:</b>                                   |                    |                    |
| Pensions  | \$ 7,884           | \$ 12,077          |
| Deferred revenue  | 232                | 940                |
| Other accruals and reserves                                   | 13,660             | 20,590             |
| Inventories   | 1,182              | 1,815              |
| Legal and environmental accruals                              | 7,243              | 11,503             |
| Deferred compensation   | 15,402             | 24,485             |
| Bad debt and rebate reserves                                  | 2,865              | 4,195              |
| Non-U.S. subsidiaries net operating loss carryforwards        | 2,657              | 1,201              |
| Tax credit carryforwards                                      | 1,851              | 1,599              |
|   | <u>\$ 52,976</u>   | <u>\$ 78,405</u>   |
| <b>Valuation Allowance</b>                                    | <u>\$ (2,255)</u>  | <u>\$ (1,815)</u>  |
| <b>Net Deferred Tax Liabilities</b>                           | <u>\$ (3,323)</u>  | <u>\$ (2,770)</u>  |
| <b>Reconciliation to Consolidated Balance Sheet:</b>          |                    |                    |
| Non-current deferred tax assets (in other non-current assets) | 7,639              | 9,727              |
| Non-current deferred tax liabilities                          | (10,962)           | (12,497)           |
| <b>Net Deferred Tax (Liabilities) Assets</b>                  | <u>\$ (3,323)</u>  | <u>\$ (2,770)</u>  |

Earnings generated by a foreign subsidiary are presumed to ultimately be transferred to the parent company. Therefore, the establishment of deferred taxes may be required with respect to the excess of the investment value for financial reporting over the tax basis of investments in those foreign subsidiaries (also referred to as book-over-tax outside basis differences). A company may overcome this presumption and forgo recording a deferred tax liability in its financial statements if it can assert that management has the intent and ability to indefinitely reinvest the earnings of its foreign subsidiaries. Prior to the year ended December 31, 2017, the Company has not provided deferred U.S., foreign or local income taxes on the book-over-tax outside basis differences of its foreign subsidiaries because such excess has been considered to be indefinitely reinvested in the local country businesses. As discussed above, the Company has recorded \$19.4 million in income tax expense, representing U.S. federal and state taxes expected to be incurred pursuant to the deemed repatriation of its foreign subsidiary earnings under the Tax Act in its consolidated statement of operations for the year ended December 31, 2017. Pursuant to the Tax Act, the Company now has the ability to repatriate to the U.S. parent the foreign cash associated with these foreign earnings as these earnings have already been subject to U.S. federal taxes. This cash may, however, be subject to foreign income and/or local country taxes if repatriated to the U.S. In addition, repatriation of some foreign cash balances may be further restricted by local laws. The Company is currently analyzing its foreign capital structure in order to determine the amount of cash at its foreign subsidiaries that can be repatriated to the U.S. with minimal additional taxes. This evaluation requires judgment about the future operating and liquidity needs of the Company and its foreign subsidiaries. Until such time as the Company completes this analysis, the Company maintains its assertion of indefinite reinvestment in its foreign earnings.

The Company has non-U.S. tax loss carryforwards of \$10,352,000 (pretax) as of December 31, 2017, and \$4,655,000 as of December 31, 2016, that are available for use by the Company between 2018 and 2037. The Company has tax credit carryforwards of \$1,851,000 as of December 31, 2017, and \$1,599,000 as of December 31, 2016 that are available for use by the Company between 2018 and 2027.

At December 31, 2017, the Company had valuation allowances of \$2,255,000, which were primarily attributable to deferred tax assets in China, India, the Philippines and Singapore. The realization of deferred tax assets is dependent on the generation of sufficient taxable income in the appropriate tax jurisdictions. The Company believes that it is more likely than not that the related deferred tax assets will not be realized.

As of December 31, 2017 and 2016, unrecognized tax benefits totaled \$1,927,000 and \$1,931,000, respectively. The amount of unrecognized tax benefits that, if recognized, would favorably affect the Company's effective income tax rate in any future periods, net of the federal benefit on state issues, was approximately \$1,917,000, \$1,921,000 and \$1,948,000 at December 31, 2017, 2016 and 2015, respectively. The Company believes it is reasonably possible that the amount of unrecognized tax benefits related to its current uncertain tax positions could decrease by up to \$1,780,000 over the next 12 months.

The Company recognizes accrued interest and penalties related to unrecognized tax benefits as income tax expense. In 2017, the Company recognized net interest and penalty expense of \$3,000 compared to \$9,000 of net interest and penalty expense in 2016 and \$6,000 of net interest and penalty income in 2015. At December 31, 2017 the liability for interest and penalties was \$56,000 compared to \$53,000 at December 31, 2016.

The Company files income tax returns in the U.S. federal jurisdiction and various states and foreign jurisdictions. The Company is not subject to U.S. federal income tax examinations by tax authorities for years before 2011. In addition, 2013 is no longer subject to U.S. federal income tax examinations. Some foreign jurisdictions and various U.S. states jurisdictions may be subject to examination back to 2011.

During 2016, the Internal Revenue Service started its audit of the 2011 and 2012 tax years. As of December 31, 2017, these audits were still open and the Company had not been notified of any significant proposed adjustments.

Below are reconciliations of the January 1 and December 31 balances of unrecognized tax benefits for 2017, 2016 and 2015:

| <i>(In thousands)</i>                           | 2017            | 2016            | 2015            |
|---|-----------------|-----------------|-----------------|
| Unrecognized tax benefits, opening balance      | \$ 1,931        | \$ 1,958        | \$ 464          |
| Gross increases – tax positions in prior period | —               | —               | 1,526           |
| Gross increases – current period tax positions  | 20              | 35              | 29              |
| Foreign currency translation                    | 69              | (43)            | (37)            |
| Lapse of statute of limitations                 | (93)            | (19)            | (24)            |
| Unrecognized tax benefits, ending balance       | <u>\$ 1,927</u> | <u>\$ 1,931</u> | <u>\$ 1,958</u> |

## 10. Stockholders' Equity

At December 31, 2017 and 2016, treasury stock consisted of 3,561,509 shares and 3,470,084 shares of common stock, respectively. During 2017, 57,963 shares of Company common stock were purchased in the open market and 18,827 shares of Company common stock were purchased from Company Retirement Plans. In addition, 22,598 shares were received to settle employees' minimum statutory withholding taxes related to performance stock awards, exercised SARs and deferred compensation distributions. Also, 7,965 shares of treasury stock were distributed to participants under the Company's deferred compensation plan.

## 11. Stock-based Compensation

On December 31, 2017, the Company had stock options and stock awards outstanding under its 2006 Incentive Compensation Plan (2006 Plan) and stock options, stock awards and SARs under its 2011 Incentive Compensation Plan (2011 Plan). Stock options, stock awards and SARs are currently granted to Company executives and other key employees. No further options or awards may be granted under the 2006 Plan. The 2011 Plan authorized the award of 2,600,000 shares of the Company's common stock for stock options, SARs and stock awards. At December 31, 2017, there were 945,161 shares available for grant under the 2011 Plan.

Compensation expense recorded in the consolidated statements of income for all plans was \$7,151,000, \$12,618,000, and \$4,374,000 for the years ended December 31, 2017, 2016 and 2015, respectively. The decrease in stock-based compensation in 2017 versus 2016 was primarily due to the decrease in compensation related to cash-settled SARs. Due to a decrease in the market value of Company common stock from \$81.48 at December 31, 2016 to \$78.97 at December 31, 2017, the fair value of SARs decreased, resulting in a decrease of the Company's SARs liability. In 2016, the market value of Company common stock increased \$31.79 from 2015 market value, resulting in an increase of the Company's SARs liability. In addition, performance stock awards compensation expenses decreased year-over-year.

The total income tax benefit recognized in the income statement for share-based compensation arrangements was \$2,980,124, \$4,761,000, and \$1,654,000 for the years ended December 31, 2017, 2016 and 2015, respectively.

## Stock Options

Under all plans, stock option awards are granted with an exercise price equal to the market price of the Company's stock at the date of grant. The market price is defined and calculated as the average of the opening and closing prices for Company common stock on the grant date as reported in the New York Stock Exchange – Composite Transactions. Stock option awards granted prior to 2017 cliff vest after two years. Stock options granted in 2017 have a three-year graded vesting feature, with one-third of the awards vesting each year. The Company has elected the straight-line method of expense attribution for the stock options with graded vesting feature. These options have 8- to 10-year contractual terms. The fair value of each option award was estimated on the date of grant using the Black-Scholes option valuation model incorporating the weighted-average assumptions noted in the following table. Expected volatility is based on the historical volatility of the Company's stock. The Company also uses historical data to estimate the expected term of options granted. The risk-free rate is the U.S. Treasury note rate that corresponds to the expected option term at the date of grant. The following are the weighted-average assumptions used to calculate the grant-date fair values of stock option awards granted in the years ended December 31, 2017, 2016 and 2015:

|                         | For the Years Ended December 31 |           |           |
|-------------------------|---------------------------------|-----------|-----------|
|                         | 2017                            | 2016      | 2015      |
| Expected dividend yield | 1.39%                           | 1.45%     | 1.53%     |
| Expected volatility     | 30.01%                          | 35.62%    | 40.32%    |
| Expected term           | 7.2 years                       | 7.3 years | 7.3 years |
| Risk-free interest rate | 2.22%                           | 1.52%     | 1.96%     |

A summary of stock option activity for the year ended December 31, 2017 is presented below:

|   | Shares    | Weighted-Average Exercise Price | Weighted-Average Remaining Contractual Term | Aggregate Intrinsic Value (\$000) |
|---|-----------|---------------------------------|---|-----------------------------------|
| <b>Options</b>                                  |           |                                 |   |                                   |
| Outstanding at January 1, 2017                  | 436,126   | \$ 42.99                        |   |                                   |
| Granted   | 71,434    | 78.56                           |   |                                   |
| Exercised                                       | (104,277) | 32.32                           |   |                                   |
| Forfeited                                       | (11,478)  | 50.78                           |   |                                   |
| Outstanding at December 31, 2017                | 391,805   | 52.09                           | 6.33  | \$ 10,532                         |
| Vested or expected to vest at December 31, 2017 | 384,777   | 51.95                           | 6.29  | 10,396                            |
| Exercisable at December 31, 2017                | 230,118   | 47.62                           | 4.77  | 7,214                             |

The weighted-average grant-date fair values of options awarded during the years ended December 31, 2017, 2016 and 2015, were \$24.49, \$14.70, and \$15.59, respectively. The total intrinsic values of options exercised during the years ended December 31, 2017, 2016, and 2015 were \$5,232,000, \$6,620,000, and \$1,426,000, respectively.

As of December 31, 2017, the total unrecognized compensation cost for unvested stock options was \$1,179,000. That cost is expected to be recognized over a weighted-average period of 2.0 years.

Cash received from stock option exercises under the Company's stock option plans for the years ended December 31, 2017, 2016, and 2015 was \$3,370,000, \$4,017,000, and \$777,000, respectively. The actual tax benefit realized for the tax deductions from stock option exercises totaled \$1,455,000, \$1,899,000, and \$351,000 for the years ended December 31, 2017, 2016 and 2015, respectively.

## Stock Awards

In 2015, 2016, and 2017, the Company granted stock awards under the 2011 Plan. Most Company stock awards are granted in the form of performance awards. The performance stock awards vest only upon the Company's achievement of certain Board of Directors approved levels of financial performance by the end of specified measurement periods. The number of Company shares of common stock ultimately distributed, if any, is contingent upon the Company's actual financial performance attained by the end of the measurement period relative to the Board of Directors approved targets. The fair value of performance stock awards equals the grant-date market price of the Company's common stock, discounted for the estimated amount of dividends that would not be received during the measurement period. Compensation expense is recorded each reporting period based on the probable number of awards that

will ultimately vest given the projected level of financial performance. If at the end of the measurement period the performance objectives are not met, no compensation cost is recognized and any compensation expense recorded in prior periods is reversed. Periodically, the Company also grants stock awards that have no performance conditions associated with their vesting. These stock awards vest based on the service time established for the given grant.

A summary of stock award activity for the year ended December 31, 2017, is presented below:

|                               | Shares         | Weighted-Average<br>Grant Date<br>Fair Value |
|-------------------------------|----------------|--|
| <b>Stock Awards</b>           |                |  |
| Unvested at January 1, 2017   | 256,766        | \$ 40.74                                     |
| Granted                       | 40,171         | 75.94  |
| Vested                        | (113,738)      | 39.54  |
| Forfeited                     | (14,166)       | 45.93  |
| Unvested at December 31, 2017 | <u>169,033</u> |  |

The weighted-average grant-date fair values of stock awards granted during the years ended December 31, 2017, 2016 and 2015, were \$75.94, \$41.81, and \$39.11, respectively. As of December 31, 2017, under the current Company assumption as to the number of stock award shares that will vest at the measurement periods ended December 31, 2018 and 2019, there was \$3,737,000 of unrecognized compensation cost for unvested stock awards. That cost is expected to be recognized over a period of 1.5 years.

#### SARs

At December 31, 2017, the Company had both cash-settled and Company stock-settled SARs outstanding. SARs granted prior to 2015 are cash-settled, and SARs granted after 2014 are stock-settled. SARs granted prior to 2017 cliff vest after two years. SARs granted in 2017 have a three-year graded vesting feature, with one-third of the awards vesting each year. The Company has elected the straight-line method of expense attribution for the SARs with graded vesting feature. All SARs expire ten years from the grant date. Upon the exercise of a SARs award, a participant receives in cash (for cash-settled SARs) or Company common stock (for stock-settled SARs) an amount that equals the excess of the fair market value of a share of Company common stock at the date of exercise over the fair market value of a share of Company common stock at the date of grant (the exercise price). Cash-settled SARs are accounted for as liabilities that must be re-measured at fair value at the end of every reporting period until settlement. Compensation expense for each reporting period is based on the period-to-period change (or portion of the change, depending on the proportion of the vesting period that has been completed at the reporting date) in the fair value of the SARs. Compensation expense for stock-settled SARs is based on the grant-date value of the awards allocated over the proportion of the vesting period that has been completed at the reporting date. Because stock-settled SARs are considered equity instruments, they are not re-measured at fair value at the end of each reporting period.

The following is a summary of SARs activity for the year ended December 31, 2017:

|                                  | Shares         | Weighted-<br>Average<br>Exercise Price | Weighted-<br>Average<br>Remaining<br>Contractual<br>Term | Aggregate<br>Intrinsic Value<br>(\$000) |
|----------------------------------|----------------|--|--|---|
| <b>SARs</b>                      |                |  |  |   |
| Outstanding at January 1, 2017   | 553,582        | \$ 47.81                               |  |   |
| Granted                          | 148,723        | 78.73                                  |  |   |
| Exercised                        | (73,739)       | 44.67                                  |  |   |
| Forfeited                        | (11,916)       | 68.95                                  |  |   |
| Outstanding at December 31, 2017 | <u>616,650</u> | <u>55.23</u>                           | <u>7.46</u>  | <u>\$ 14,640</u>                        |

The weighted-average grant-date fair values of SARs granted during the years 2017, 2016 and 2015 were \$24.90, \$14.69, and \$15.60, respectively. The fair value for each SARs award was estimated using the Black-Scholes valuation model incorporating the same assumptions as noted for stock options.

As of December 31, 2017 and 2016, the liability for cash-settled SARs recorded on the consolidated balance sheet (non-current liabilities) was \$4,760,000 and \$5,832,000, respectively. At December 31, 2017, there was \$2,398,000 of total unrecognized compensation cost related to all unvested SARs. That cost is to be recognized over a weighted-average period of 2.0 years.

In general, it is the Company's policy to issue new shares of its common stock upon the exercise of stock options and stock-settled SARs or the vesting of stock awards.

## 12. Deferred Compensation

The Company sponsors deferred compensation plans that allow management employees to defer receipt of their annual bonuses and outside directors to defer receipt of their fees until retirement, departure from the Company or as otherwise elected. Compensation expense and the related deferred compensation obligation are recorded when the underlying compensation is earned. Over time, the deferred obligation may increase or decrease based on the performance results of investment options chosen by the plan participants. The investment options include Company common stock and a limited selection of mutual funds. The Company maintains sufficient shares of treasury stock to cover the equivalent number of shares that result from participants elections of the Company common stock investment option. As a result, the Company must periodically purchase its common shares in the open market or in private transactions. The Company purchases shares of the applicable mutual funds to fund the portion of its deferred compensation liabilities tied to such investments.

Some plan distributions may be made in cash or Company common stock at the option of the participant. Other plan distributions can only be made in Company common stock. For deferred compensation obligations that may be settled in cash or Company common stock at the option of the participant, the Company must record appreciation in the market values of the investment choices made by participants as additional compensation expense. Conversely, declines in the market values of the investment choices reduce compensation expense. Increases and decreases of compensation expense that result from fluctuations in the underlying investments are recorded as part of operating expenses in the consolidated statements of income. The additional compensation expense resulting from the changes in the market values and earnings of the selected investment options was \$4,857,000 \$16,805,000 and \$6,500,000 expense in 2017, 2016 and 2015, respectively. The decrease in expense between 2017 and 2016 was attributable to a decrease in the market value of the Company's common stock and an increase in income from investments other than in Company's common stock. Between 2016 and 2015, the price of the Company's common stock significantly increased resulting in higher deferred compensation. The obligations that must be settled only in Company common stock are treated as equity instruments; therefore, fluctuations in the market price of the underlying Company stock do not affect earnings. The Company's deferred compensation liability was \$58,915,000 and \$60,328,000 at December 31, 2017 and 2016, respectively.

## 13. Postretirement Benefit Plans

### Defined Benefit Plans

The Company sponsors various funded qualified and unfunded non-qualified defined benefit pension plans, the most significant of which cover employees in the U.S. and U.K. locations. The various U.S. defined benefit pension plans were amended in 2005-2008 to freeze the plans by stopping the accrual of service benefits. The U.K. defined benefit pension plan was frozen in 2006. Benefits earned through the freeze dates are available to participants when they retire, in accordance with the terms of the plans. The Company established defined contribution plans to replace the frozen defined benefit pension plans.

### Obligations and Funded Status at December 31

| <i>(In thousands)</i>                   | United States |            | United Kingdom |           |
|---|---------------|------------|----------------|-----------|
|   | 2017          | 2016       | 2017           | 2016      |
| <b>Change in benefit obligation</b>     |               |            |                |           |
| Benefit obligation at beginning of year | \$ 162,727    | \$ 160,789 | \$ 22,034      | \$ 19,950 |
| Interest cost                           | 6,651         | 6,934      | 592            | 733       |
| Actuarial (gain) loss                   | 9,109         | 1,538      | (156)          | 5,614     |
| Benefits paid                           | (7,129)       | (6,534)    | (516)          | (513)     |
| Foreign exchange impact                 | —             | —          | 2,094          | (3,750)   |
| Benefit obligation at end of year       | \$ 171,358    | \$ 162,727 | \$ 24,048      | \$ 22,034 |

| <i>(In thousands)</i>                          | United States      |                    | United Kingdom   |                   |
|--|--------------------|--------------------|------------------|-------------------|
|  | 2017               | 2016               | 2017             | 2016              |
| <b>Change in plan assets</b>                   |                    |                    |                  |                   |
| Fair value of plan assets at beginning of year | \$ 137,092         | \$ 121,835         | \$ 20,336        | \$ 21,425         |
| Actual return on plan assets                   | 15,533             | 21,612             | 1,957            | 2,758             |
| Employer contributions                         | 2,412              | 179                | 365              | 378               |
| Benefits paid                                  | (7,129)            | (6,534)            | (516)            | (513)             |
| Foreign exchange impact                        | —                  | —                  | 2,026            | (3,712)           |
| Fair value of plan assets at end of year       | <u>\$ 147,908</u>  | <u>\$ 137,092</u>  | <u>\$ 24,168</u> | <u>\$ 20,336</u>  |
| Over (Under) funded status at end of year      | <u>\$ (23,450)</u> | <u>\$ (25,635)</u> | <u>\$ 120</u>    | <u>\$ (1,698)</u> |

The amounts recognized in the consolidated balance sheets at December 31 consisted of

| <i>(In thousands)</i> | United States      |                    | United Kingdom |                   |
|-----------------------|--------------------|--------------------|----------------|-------------------|
|                       | 2017               | 2016               | 2017           | 2016              |
| Non-current asset     | \$ —               | \$ —               | \$ 120         | —                 |
| Current liability     | (302)              | (166)              | —              | —                 |
| Non-current liability | (23,148)           | (25,469)           | —              | (1,698)           |
| Net amount recognized | <u>\$ (23,450)</u> | <u>\$ (25,635)</u> | <u>\$ 120</u>  | <u>\$ (1,698)</u> |

The amounts recognized in accumulated other comprehensive income at December 31 consisted of

| <i>(In thousands)</i> | United States |           | United Kingdom |          |
|-----------------------|---------------|-----------|----------------|----------|
|                       | 2017          | 2016      | 2017           | 2016     |
| Net actuarial loss    | \$ 39,801     | \$ 40,022 | \$ 5,743       | \$ 7,443 |

Below is information for pension plans with projected benefit obligations in excess of plan assets at December 31:

| <i>(In thousands)</i>          | United States |            | United Kingdom |           |
|--------------------------------|---------------|------------|----------------|-----------|
|                                | 2017          | 2016       | 2017           | 2016      |
| Projected benefit obligation   | \$ 171,358    | \$ 162,727 | \$ —           | \$ 22,034 |
| Accumulated benefit obligation | 171,358       | 162,727    | —              | 22,034    |
| Fair value of plan assets      | 147,908       | 137,092    | —              | 20,336    |

#### Components of Net Periodic Benefit Cost and Other Amounts Recognized in Other Comprehensive Income

Net periodic benefit costs for the years ended December 31, 2017, 2016 and 2015, were as follows:

| <i>(In thousands)</i>              | United States |                 |                 | United Kingdom |                |                |
|------------------------------------|---------------|-----------------|-----------------|----------------|----------------|----------------|
|                                    | 2017          | 2016            | 2015            | 2017           | 2016           | 2015           |
| Interest cost                      | \$ 6,651      | \$ 6,934        | \$ 6,815        | \$ 592         | \$ 733         | \$ 789         |
| Expected return on plan assets     | (9,288)       | (9,012)         | (9,579)         | (797)          | (900)          | (1,054)        |
| Amortization of net actuarial loss | 3,085         | 3,386           | 4,534           | 382            | 77             | 179            |
| Net periodic benefit cost          | <u>\$ 448</u> | <u>\$ 1,308</u> | <u>\$ 1,770</u> | <u>\$ 177</u>  | <u>\$ (90)</u> | <u>\$ (86)</u> |



Other changes in plan assets and benefit obligations recognized in other comprehensive income for the years ended December 31, 2017, 2016 and 2015, were as follows:

| <i>(In thousands)</i>  | United States |             |            | United Kingdom |          |            |
|--|---------------|-------------|------------|----------------|----------|------------|
|  | 2017          | 2016        | 2015       | 2017           | 2016     | 2015       |
| Net actuarial (gain) loss  | \$ 2,864      | \$ (11,062) | \$ (1,110) | \$ (1,318)     | \$ 3,756 | \$ (781)   |
| Amortization of net actuarial loss   | (3,085)       | (3,386)     | (4,534)    | (382)          | (77)     | (179)      |
| Total recognized in other comprehensive income                               | \$ (221)      | \$ (14,448) | \$ (5,644) | \$ (1,700)     | \$ 3,679 | \$ (960)   |
| Total recognized in net periodic benefit cost and other comprehensive income | \$ 227        | \$ (13,140) | \$ (3,874) | \$ (1,523)     | \$ 3,589 | \$ (1,046) |

The estimated amounts that will be reclassified from accumulated other comprehensive income into net periodic benefit cost in 2018 are as follows:

| <i>(In thousands)</i> | United States | United Kingdom |
|-----------------------|---------------|----------------|
| Net actuarial loss    | \$ 3,746      | \$ 222         |

### Estimated Future Benefit Payments

| <i>(In thousands)</i> | United States | United Kingdom |
|-----------------------|---------------|----------------|
| 2018                  | \$ 7,560      | \$ 504         |
| 2019                  | 7,956         | 511            |
| 2020                  | 8,438         | 516            |
| 2021                  | 8,973         | 539            |
| 2022                  | 9,448         | 585            |
| 2023-2027             | 51,168        | 3,548          |

### Assumptions

The weighted-average assumptions used to determine benefit obligations at December 31 were as follows:

|               | United States |       | United Kingdom |       |
|---------------|---------------|-------|----------------|-------|
|               | 2017          | 2016  | 2017           | 2016  |
| Discount rate | 3.67%         | 4.17% | 2.40%          | 2.60% |

The weighted-average assumptions used to determine net periodic benefit costs for years ended December 31 were as follows:

|  | United States |       |       | United Kingdom |       |       |
|--|---------------|-------|-------|----------------|-------|-------|
|  | 2017          | 2016  | 2015  | 2017           | 2016  | 2015  |
| Discount rate                            | 4.17%         | 4.39% | 4.09% | 2.60%          | 4.00% | 3.50% |
| Expected long-term return on plan assets | 7.00%         | 7.00% | 7.50% | 3.77%          | 4.59% | 4.66% |

In addition to the above assumptions, the Company uses a market-related value of assets approach to calculate the expected return on plan assets component of U.S. net periodic benefit cost. The market-related value equals the fair value of plan assets with five-year smoothing of asset gains or losses. Asset gains are subtracted or losses added in the following way: 80 percent of the prior year's gain or loss; 60 percent of the second preceding year's gain or loss; 40 percent of the third preceding year's gain or loss; and 20 percent of the fourth preceding year's gain or loss. Gains or losses for the year are calculated as the difference between the expected fair value of assets and the actual fair value of assets.

## Investment Strategies and Policies

### *U.S. Plans*

Plan assets are predominantly invested using active investment strategies, as compared to passive or index investing. An investment management firm hires and monitors underlying investment management firms for each asset category. Equity managers within each category cover a range of investment styles and approaches, including both active and passive, and are combined in a way that controls for capitalization, style biases, and country exposure versus benchmark indexes, while active managers focus primarily on stock selection to improve returns. Fixed income managers seek to reduce the volatility of the plan's funded status by matching the duration with the plan's liability while seeking to improve returns through security selection, sector allocation and yield curve management. Real estate (REIT) exposure is now categorized within mid cap equity and uses public core real estate strategies, which provide stable and high levels of current income and enhanced core strategies, which seek slightly higher returns by emphasizing appreciation.

Risk is controlled through diversification among multiple asset categories, managers, styles, and securities. The investment management firm recommends asset allocations based on the time horizon available for investment, the nature of the plan cash flows and liabilities and other factors that affect risk tolerance. The asset allocation targets are approved by the Company's Plan Committee. Risk is further controlled both at the manager and asset category level by assigning targets for risk versus investment returns.

Allowable investment categories include:

**Equities:** Common stocks of large, medium, and small companies, including both U.S. and non-U.S. based companies. The long-term target allocation for equities, excluding Company stock, is 50 percent.

**Fixed Income (Debt):** Bonds or notes issued or guaranteed by the U.S. government, and to a lesser extent, by non-U.S. governments, or by their agencies or branches, mortgage-backed securities, including collateralized mortgage obligations, corporate bonds, municipal bonds and dollar-denominated debt securities issued in the U.S. by non-U.S. banks and corporations. A small percentage of the fixed income assets may be in debt securities that are below investment grade. The target allocation for fixed income is 30 percent.

**Real Estate:** Public real estate funds using office, apartment, industrial, retail and other property types. In prior years Real Estate investments were reflected as a separate line item within the Mutual Funds category. Effective 2017, the majority of Real Estate assets have been removed from this category and are currently being captured within the Equities assets category. This change was made by the Global Industry Classification Standard (GICS) to better reflect the equity security features of Real Estate Investment Trusts (REITs).

**Commodities:** In previous years, the retirement plans invested in Commodity funds that match the index using commodity-linked derivative instruments while seeking to enhance overall returns through the use of fixed income securities. The retirement plan exited commodities in 2017 because of their high correlation to long term fixed income - they no longer provided the diversification benefit to the long term asset allocation optimization.

**Employer Securities:** The retirement plans also hold shares of the Company's common stock, which are purchased or sold by the trustee from time to time, as directed by the Plan Committee. At the direction of the Plan Committee, the plans sold 40,837 common shares to the Company's ESOP trust on February 21, 2017, 18,827 shares to the Company on November 20, 2017, and 56,894 shares to the Company's ESOP trust on February 23, 2016. The target allocation for employer securities is 20 percent of plan assets.

In addition to these primary investment types, excess cash may be invested in futures in order to efficiently achieve more fully invested portfolio positions. Otherwise, a small number of investment managers make limited use of derivatives, including futures contracts, options on futures and interest rate swaps in place of direct investment in securities to efficiently achieve equivalent market positions. Derivatives are not used to leverage portfolios.

## U.K. Plan

The objective of the U.K. defined benefit pension fund investment strategy is to maximize the long-term rate of return on plan assets within a medium level of risk in order to minimize the cost of providing pension benefits. To that end, the plan assets are invested in an actively managed pooled fund of funds that diversifies its holdings among equity securities, debt securities, property and cash. Essentially, the plan is to hold equity instruments to back the benefits of participants yet to retire and bonds and cash to back current pensioners. Although there are no formal target allocations for the plan assets, the fund will generally be heavily invested in equity securities. Equity securities are selected from U.K., European, U.S. and emerging market companies. Bonds include U.K. and other countries' government notes and corporate debt of U.K and non-U.K. companies. There are no specific prohibited investments, but the current managed fund will not allocate assets to derivatives or other financial hedging instruments. Plan trustees meet regularly with the fund manager to assess the fund's performance and to reassess investment strategy. At December 31, 2017, the pension asset allocation was 58 percent equities, 29 percent fixed income, seven percent insurance contracts, three percent real estate and three percent cash.

Included in plan assets are insurance contracts purchased by the plan trustees to provide pension payments for specific retirees. In past years, at the time a plan participant retired, the plan trustee would periodically purchase insurance contracts to cover the future payments due the retiree. This practice is no longer followed. The contracts are revocable, and the related plan obligations are not considered settled. Therefore, the plan assets and obligations include the insured amounts.

## Plan Assets

### U.S. Plans

The Company's asset allocations for its U.S. pension plans at December 31, 2017 and 2016, by asset category, were as follows:

| <i>(In thousands)</i>            | December 31, 2017 |           |         |            |
|----------------------------------|-------------------|-----------|---------|------------|
|                                  | Level 1           | Level 2   | Level 3 | Total      |
| Cash and Cash Equivalents        | \$ 4,903          | \$ —      | \$ —    | \$ 4,903   |
| Equity Securities                |                   |           |         |            |
| U.S. Equities                    | 37,753            | —         | —       | 37,753     |
| Non-U.S. Equities                | 31,581            | 47        | —       | 31,628     |
| Employer Securities              | 30,197            | —         | —       | 30,197     |
| Total Equities                   | 99,531            | 47        | —       | 99,578     |
| Fixed Income Securities          |                   |           |         |            |
| U.S. Corporate Bonds             | —                 | 28,744    | —       | 28,744     |
| U.S. Government and Agency Bonds | 5,545             | 1,045     | —       | 6,590      |
| Other Bonds                      | —                 | 8,093     | —       | 8,093      |
| Total Fixed Income               | 5,545             | 37,882    | —       | 43,427     |
| Total                            | \$ 109,979        | \$ 37,929 | \$ —    | \$ 147,908 |

| <i>(In thousands)</i>            | December 31, 2016 |           |         |            |
|----------------------------------|-------------------|-----------|---------|------------|
|                                  | Level 1           | Level 2   | Level 3 | Total      |
| Cash and Cash Equivalents        | \$ 3,633          | \$ 275    | \$ —    | \$ 3,908   |
| Equity Securities                |                   |           |         |            |
| U.S. Equities                    | 29,390            | —         | —       | 29,390     |
| Non-U.S. Equities                | 14,637            | —         | —       | 14,637     |
| Employer Securities              | 36,018            | —         | —       | 36,018     |
| Total Equities                   | 80,045            | —         | —       | 80,045     |
| Fixed Income Securities          |                   |           |         |            |
| U.S. Corporate Bonds             | —                 | 28,278    | —       | 28,278     |
| U.S. Government and Agency Bonds | 8,309             | 971       | —       | 9,280      |
| Other Bonds                      | —                 | 7,696     | —       | 7,696      |
| Total Fixed Income               | 8,309             | 36,945    | —       | 45,254     |
| Mutual Funds                     |                   |           |         |            |
| Real Estate                      | 5,362             | —         | —       | 5,362      |
| Commodities                      | 2,523             | —         | —       | 2,523      |
| Other                            | —                 | —         | —       | —          |
| Total Mutual Funds               | 7,885             | —         | —       | 7,885      |
| Total                            | \$ 99,872         | \$ 37,220 | \$ —    | \$ 137,092 |

### Plan Asset Valuation Methodology

Following is a description of the valuation methodologies used for plan assets measured at fair value.

Individual equity securities, including employer securities, are valued by Standard & Poor's Securities Evaluations as determined by quoted market prices on the New York Stock Exchange or other active markets. Both market pricing and future cash flow analysis may be used in the pricing process as follows:

Level 1 – Equities represent the largest asset category and are valued according to the exchange-quoted market prices of the underlying investments. Level 1 fixed income securities are U.S. government securities and are valued according to quoted prices from active markets.

Level 2 – Fixed income investments without equivalent trading exchanges are valued primarily through a technique known as “future cash flow approach” which is based on what bondholders can reasonably expect to receive based upon an issuer's current financial condition. Pricing analysts prepare cash-flow forecasts and utilize one or two pricing models to arrive at an evaluated price. Evaluated bid modeling includes factors such as the interest rate on the coupon, maturity, rating, cash flow projections and other factors.

Level 3 – no investments held during 2017 or 2016 were categorized as Level 3.

### U.K. Plan

The Company's asset allocations for its U.K. pension plans at December 31, 2017 and 2016, by asset category, were as follows:

| <i>(In thousands)</i> | December 31, 2017 |           |          |           |
|-----------------------|-------------------|-----------|----------|-----------|
|                       | Level 1           | Level 2   | Level 3  | Total     |
| Cash                  | \$ 745            | \$ —      | \$ —     | \$ 745    |
| Equity Securities     |                   |           |          |           |
| Pooled Pension Funds  | —                 | 14,127    | —        | 14,127    |
| Fixed Income          |                   |           |          |           |
| Pooled Pension Funds  | —                 | 6,952     | —        | 6,952     |
| Real Estate           |                   |           |          |           |
| Pooled Pension Funds  | —                 | 646       | —        | 646       |
| Insurance Contracts   | —                 | —         | 1,698    | 1,698     |
| Total                 | \$ 745            | \$ 21,725 | \$ 1,698 | \$ 24,168 |

| <i>(In thousands)</i> | December 31, 2016 |                  |                 |                  |
|-----------------------|-------------------|------------------|-----------------|------------------|
|                       | Level 1           | Level 2          | Level 3         | Total            |
| Cash                  | \$ 243            | \$ —             | \$ —            | \$ 243           |
| Equity Securities     |                   |                  |                 |                  |
| Pooled Pension Funds  | —                 | 11,760           | —               | 11,760           |
| Fixed Income          |                   |                  |                 |                  |
| Pooled Pension Funds  | —                 | 6,015            | —               | 6,015            |
| Real Estate           |                   |                  |                 |                  |
| Pooled Pension Funds  | —                 | 559              | —               | 559              |
| Insurance Contracts   | —                 | —                | 1,759           | 1,759            |
| <b>Total</b>          | <b>\$ 243</b>     | <b>\$ 18,334</b> | <b>\$ 1,759</b> | <b>\$ 20,336</b> |

Units of each of the pooled funds are valued by the trustee based on quoted market prices of the underlying investments (the underlying assets are either exchange traded or have readily available markets).

Fair value changes within asset categories for which fair value measurements use significant unobservable inputs (Level 3) were as follows during 2016 and 2017:

| <i>(In thousands)</i>            | Insurance Contracts |
|----------------------------------|---------------------|
| Fair value, December 31, 2015    | \$ 1,969            |
| Sale proceeds (benefit payments) | (144)               |
| Change in unrealized gain        | 265                 |
| Foreign exchange impact          | (331)               |
| Fair value, December 31, 2016    | \$ 1,759            |
| Sale proceeds (benefit payments) | (134)               |
| Change in unrealized gain        | (84)                |
| Foreign exchange impact          | 157                 |
| Fair value, December 31, 2017    | <u>\$ 1,698</u>     |

## Long-term Rate of Return for Plan Assets

### U.S. Plans

The overall expected long-term rate of return on assets of 7.00 percent that was used to develop the 2017 pension expense is based on plan asset allocation, capital markets forecasts and expected benefits of active investment management. For fixed income, the expected return is 4.69 percent. This assumption includes the yield on the five-year zero-coupon U.S. Treasury bond as the base rate along with historical data from the U.S. Treasury yield curve. For equities, the expected return is 6.31 percent for U.S. and international equities. This return is based on a blended average of three different statistical models that each incorporates multiple factors including, for example, inflation, Gross Domestic Product and the Fed Funds Target Rate.

The overall investment return forecast reflects the target allocations and the capital markets forecasts for each asset category, plus a premium for active asset management expected over the long-term.

### U.K. Plan

The overall expected long-term return on plan assets is a weighted-average of the expected long-term returns for equity securities, debt securities and other assets. The redemption yield at the measurement date on U.K. government fixed interest bonds and the yield on corporate bonds are used as proxies for the return on the debt portfolio. The returns for equities and property are estimated as a premium of 3.0 percent added to the risk-free rate. Cash is assumed to have a long-term return of 4.0 percent.

### Other Defined Benefit Plans

The Company maintains funded and unfunded defined benefit plans in other foreign locations. The liabilities and expenses associated with these plans, individually and collectively, are not material to the Company's consolidated financial statements. Discount rates for these plans are determined based on local interest rates and plan participant data.

## Cash Flows

As a result of pension funding relief included in the Highway and Transportation Funding Act of 2014, the Company does not expect to make any 2018 contributions to the funded U.S. qualified defined benefit plans. The Company expects to contribute \$302,000 in 2018 to the unfunded non-qualified U.S. pension plans. The Company expects to contribute \$461,000 to the U.K. defined benefit plan in 2018.

## Defined Contribution Plans

The Company sponsors retirement savings defined contribution retirement plans that cover eligible U.S. and U.K. employees. The Company's U.S. retirement plans include two qualified plans, one of which is a 401(k) plan and one of which is an employee stock ownership plan, and one non-qualified supplemental executive plan. Historically, the Company has made profit sharing contributions into the qualified retirement plans for its U.S. employees. Profit sharing contributions were determined each year using a formula that was applied to Company earnings. The contributions, which were made partly in cash paid to the 401(k) plan and partly in Company common stock, are allocated to participant accounts on the basis of participant base earnings.

Defined contribution expenses for the Company's qualified defined contribution plans were as follows:

| <i>(In thousands)</i>        | 2017      | 2016      | 2015     |
|------------------------------|-----------|-----------|----------|
| Retirement contributions     | \$ 4,998  | \$ 4,902  | \$ 4,644 |
| Profit sharing contributions | 7,002     | 6,230     | 4,972    |
| Total                        | \$ 12,000 | \$ 11,132 | \$ 9,616 |

The Company has a rabbi trust to fund the obligations of its non-qualified supplemental executive defined contribution plans (supplemental plans). The trust comprises various mutual fund investments selected by the participants of the supplemental plans. In accordance with the accounting guidance for rabbi trust arrangements, the assets of the trust and the obligations of the supplemental plans are reported on the Company's consolidated balance sheet. The Company elected the fair value option for the mutual fund investment assets so that offsetting changes in the mutual fund values and defined contribution plan obligations would be recorded in earnings in the same period. Therefore, the mutual funds are reported at fair value with any subsequent changes in fair value recorded in the income statement. The supplemental plan liabilities increase (i.e., supplemental plan expense is recognized) when the value of the trust assets appreciates and decrease (i.e., supplemental plan income is recognized) when the value of the trust assets declines. At December 31, 2017 and 2016, the trust asset balances were \$1,587,000 and \$1,692,000, respectively, and the supplemental plan liability balances were \$1,661,000 and \$1,767,000, respectively. The differences between the trust asset balances and the supplemental liability balances were due to estimated liabilities that were not funded until after the end of the year when the actual liabilities were determined.

In addition to the contributions described above, certain foreign locations are required by law to make profit sharing contributions to employees based on statutory formulas. For the years ended December 31, 2017, 2016 and 2015, the Company recognized \$398,000, \$290,000 and \$1,375,000, respectively, of statutory profit sharing expense.

## 14. Accrued Liabilities

The composition of accrued liabilities was as follows:

| <i>(In thousands)</i>        | December 31 |            |
|------------------------------|-------------|------------|
|                              | 2017        | 2016       |
| Accrued payroll and benefits | \$ 58,877   | \$ 66,575  |
| Accrued customer rebates     | 16,729      | 18,553     |
| Other accrued liabilities    | 17,170      | 25,667     |
| Total accrued liabilities    | \$ 92,776   | \$ 110,795 |

## 15. Other Non-Current Liabilities

The composition of other non-current liabilities was as follows:

| <i>(In thousands)</i>               | <i>December 31</i> |                   |
|-------------------------------------|--------------------|-------------------|
|                                     | <i>2017</i>        | <i>2016</i>       |
| Deferred revenue                    | \$ 1,539           | \$ 1,863          |
| Environmental and legal matters     | 21,888             | 22,703            |
| Deferred compensation liability     | 51,890             | 53,133            |
| Pension liability                   | 25,632             | 29,494            |
| Other non-current liabilities       | 29,484             | 12,160            |
| Total other non-current liabilities | <u>\$ 130,433</u>  | <u>\$ 119,353</u> |

## 16. Contingencies

There are a variety of legal proceedings pending or threatened against the Company. Some of these proceedings may result in fines, penalties, judgments or costs being assessed against the Company at some future time. The Company's operations are subject to extensive local, state and federal regulations, including the U.S. Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) and the Superfund amendments of 1986 (Superfund) as well as similar regulations in other countries where the Company operates. Over the years, the Company has received requests for information related to or has been named by government authorities as a PRP at a number of waste disposal and manufacturing sites where cleanup costs have been or may be incurred under CERCLA and similar state statutes. In addition, damages are being claimed against the Company in general liability actions for alleged personal injury or property damage in the case of some disposal and plant sites. The Company believes that it has made adequate provisions for the costs it may incur with respect to these sites.

As of December 31, 2017, the Company estimated a range of possible environmental and legal losses of \$24.2 million to \$45.4 million. The Company's accrued liability for such losses was \$24.2 million at December 31, 2017, compared to \$25.8 million at December 31, 2016. During 2017, cash outlays related to legal and environmental matters approximated \$2.0 million compared to \$1.4 million in 2016.

For certain sites, the Company has responded to information requests made by federal, state or local government agencies but has received no response confirming or denying the Company's stated positions. As such, estimates of the total costs, or range of possible costs, of remediation, if any, or the Company's share of such costs, if any, cannot be determined with respect to these sites. Consequently, the Company is unable to predict the effect thereof on the Company's financial position, cash flows and results of operations. Given the information available, management believes the Company has no liability at these sites. However, in the event of one or more adverse determinations with respect to such sites in any annual or interim period, the effect on the Company's cash flows and results of operations for those periods could be material. Based upon the Company's present knowledge with respect to its involvement at these sites, the possibility of other viable entities' responsibilities for cleanup, and the extended period over which any costs would be incurred, the Company believes that these matters, individually and in the aggregate, will not have a material effect on the Company's financial position. However, in the event of one or more adverse determinations with respect to such sites in any annual or interim period, the effect on the Company's cash flows and results of operations for those periods could be material.

Following are summaries of the major contingencies at December 31, 2017:

### *Maywood, New Jersey Site*

The Company's property in Maywood, New Jersey and property formerly owned by the Company adjacent to its current site and other nearby properties (Maywood site) were listed on the National Priorities List in September 1993 pursuant to the provisions of CERCLA because of certain alleged chemical contamination. Pursuant to an Administrative Order on Consent entered into between USEPA and the Company for property formerly owned by the Company, and the issuance of an order by USEPA to the Company for property currently owned by the Company, the Company has completed various Remedial Investigation Feasibility Studies (RI/FS), and on September 24, 2014, USEPA issued its Record of Decision (ROD) for chemically-contaminated soil. USEPA has not yet issued a ROD for chemically-contaminated groundwater for Maywood site. Based on the most current information available, the Company believes its recorded liability represents its best estimate of the cost of remediation for the Maywood site. The best estimate of the cost of remediation for the Maywood site could change as the Company continues to hold discussions with USEPA, as the design of the remedial action progresses, if a groundwater ROD is issued or if other PRPs are identified. The ultimate amount for which the Company is liable could differ from the Company's current recorded liability.

In April 2015, the Company entered into an Administrative Settlement Agreement and Administrative Order on Consent with USEPA which requires payment of certain costs and performance of certain investigative and design work for chemically-contaminated soil. Based on the Company's review and analysis of this order, no changes to the Company's current recorded liability for claims associated with soil remediation of chemical contamination were required.

In addition, under the terms of a settlement agreement reached on November 12, 2004, the United States Department of Justice and the Company agreed to fulfill the terms of a Cooperative Agreement reached in 1985 under which the United States will take title to and responsibility for radioactive waste removal at the Maywood site, including past and future remediation costs incurred by the United States. As such, the Company recorded no liability related to this settlement agreement.

#### ***D'Imperio Property Site***

During the mid-1970's, Jerome Lightman and the Lightman Drum Company disposed of hazardous substances at several sites in New Jersey. The Company was named as a PRP in a lawsuit in the U.S. District court for the district of New Jersey that involved the D'Imperio Property Site located in New Jersey. In 2016, the PRPs were provided with updated remediation cost estimates which were considered in the Company's determination of its range of estimated possible losses and liability balance. The changes in range of possible losses and liability balance were immaterial. Remediation work is continuing at this site. Based on current information, the Company believes that its recorded liability represents its best estimate of the cost of remediation for the D'Imperio site. Depending on the ultimate cost of the remediation at this site, the amount for which the Company is liable could differ from the current estimates.

#### ***Wilmington Site***

The Company is currently contractually obligated to contribute to the response costs associated with the Company's formerly-owned site in Wilmington, Massachusetts. Remediation at this site is being managed by its current owner to whom the Company sold the property in 1980. Under the agreement, once total site remediation costs exceed certain levels, the Company is obligated to contribute up to five percent of future response costs associated with this site with no limitation on the ultimate amount of contributions. The Company has paid the current owner \$2.5 million for the Company's portion of environmental response costs through December 31, 2017. The Company has recorded a liability for its portion of the estimated remediation costs for the site. Depending on the ultimate cost of the remediation at this site, the amount for which the Company is liable could differ from the current estimates.

The Company and other prior owners also entered into an agreement in April 2004 waiving certain statute of limitations defenses for claims which may be filed by the Town of Wilmington, Massachusetts, in connection with this site. While the Company has denied any liability for any such claims, the Company agreed to this waiver while the parties continue to discuss the resolution of any potential claim which may be filed.

#### ***Other U.S. Sites***

Through the regular environmental monitoring of its plant production sites, the Company discovered levels of chemical contamination that were above thresholds allowed by law at two of its U.S plants. The Company voluntarily reported its results to the applicable state environmental agencies. As a result, the Company is required to perform self-remediation of the affected areas. In the fourth quarter of 2016, the Company recognized a charge for the estimated cost of remediating the sites. The charge was not material to the Company's results of operations. Based on current information, the Company believes that its recorded liability for the remediation is adequate. However, actual costs could differ from current estimates.

### ***17. Segment Reporting***

The Company has three reportable segments: Surfactants, Polymers and Specialty Products. Each segment provides distinct products and requires separate management due to unique markets, technologies and production processes. Surfactants are used in a variety of consumer and industrial cleaning compounds as well as in agricultural products, lubricating ingredients, oil field chemicals and other specialized applications. Polymers are used primarily in plastics, building materials, refrigeration systems and CASE applications. Specialty Products are used in food, flavoring, nutritional supplement and pharmaceutical applications.

The Company evaluates the performance of its segments and allocates resources based on operating income before interest expense, other income/expense items and income tax provision. The accounting policies of the reportable segments are the same as those described in the summary of significant accounting policies.



The following is segment data for the three years ended December 31, 2017, 2016 and 2015:

| <i>(In thousands)</i>                  | <i>Surfactants</i> | <i>Polymers</i> | <i>Specialty Products</i> | <i>Segment Totals</i> |
|--|--------------------|-----------------|---------------------------|-----------------------|
| <b>2017</b>                            |                    |                 |                           |                       |
| Net sales                              | \$ 1,297,555       | \$ 546,634      | \$ 80,818                 | \$ 1,925,007          |
| Operating income                       | 119,990            | 82,801          | 9,952                     | 212,743               |
| Assets                                 | 881,415            | 355,065         | 75,452                    | 1,311,932             |
| Capital expenditures                   | 50,400             | 21,146          | 4,234                     | 75,780                |
| Depreciation and amortization expenses | 49,102             | 22,998          | 5,019                     | 77,119                |
| <b>2016</b>                            |                    |                 |                           |                       |
| Net sales                              | \$ 1,181,563       | \$ 498,826      | \$ 85,777                 | \$ 1,766,166          |
| Operating income                       | 99,796             | 96,788          | 10,698                    | 207,282               |
| Assets                                 | 831,324            | 301,890         | 75,483                    | 1,208,697             |
| Capital expenditures                   | 64,121             | 31,890          | 4,194                     | 100,205               |
| Depreciation and amortization expenses | 48,643             | 20,275          | 4,204                     | 73,122                |
| <b>2015</b>                            |                    |                 |                           |                       |
| Net sales                              | \$ 1,205,849       | \$ 491,488      | \$ 78,830                 | \$ 1,776,167          |
| Operating income                       | 104,080            | 80,942          | 4,397                     | 189,419               |
| Assets                                 | 758,524            | 293,790         | 72,604                    | 1,124,918             |
| Capital expenditures                   | 79,171             | 31,309          | 6,387                     | 116,867               |
| Depreciation and amortization expenses | 42,122             | 19,541          | 3,659                     | 65,322                |

Below are reconciliations of segment data to the consolidated financial statements:

| <i>(In thousands)</i>                                   | <i>2017</i>         | <i>2016</i>         | <i>2015</i>         |
|---|---------------------|---------------------|---------------------|
| Operating income - segment totals                       | \$ 212,743          | \$ 207,282          | \$ 189,419          |
| Business restructuring and asset impairments (a)        | (3,069)             | (7,064)             | —                   |
| Unallocated corporate expenses (b)                      | (63,514)            | (74,025)            | (66,629)            |
| Total operating income                                  | 146,160             | 126,193             | 122,790             |
| Interest expense, net                                   | (11,444)            | (13,205)            | (14,533)            |
| Loss from equity in joint ventures                      | —                   | —                   | (6,985)             |
| Other, net  | 4,521               | 828                 | 1,584               |
| Consolidated income before income taxes                 | <u>\$ 139,237</u>   | <u>\$ 113,816</u>   | <u>\$ 102,856</u>   |
| Assets - segment totals                                 | \$ 1,311,932        | \$ 1,208,697        | \$ 1,124,918        |
| Unallocated corporate assets (c)                        | 158,929             | 145,193             | 113,474             |
| Consolidated assets                                     | <u>\$ 1,470,861</u> | <u>\$ 1,353,890</u> | <u>\$ 1,238,392</u> |
| Capital expenditures - segment totals                   | \$ 75,780           | \$ 100,205          | \$ 116,867          |
| Unallocated corporate expenditures                      | 2,833               | 2,871               | 2,482               |
| Consolidated capital expenditures                       | <u>\$ 78,613</u>    | <u>\$ 103,076</u>   | <u>\$ 119,349</u>   |
| Depreciation and amortization expenses – segment totals | \$ 77,119           | \$ 73,122           | \$ 65,322           |
| Unallocated corporate depreciation expenses             | 1,903               | 1,845               | 1,663               |
| Consolidated depreciation and amortization expenses     | <u>\$ 79,022</u>    | <u>\$ 74,967</u>    | <u>\$ 66,985</u>    |

(a) See Note 22 regarding business restructuring and asset impairment costs.

(b) Unallocated corporate expenses primarily comprise corporate administrative expenses (e.g., corporate finance, legal, human resources, information systems, deferred compensation and environmental remediation) that are not included in segment operating income and not used to evaluate segment performance.

- (c) The changes in unallocated corporate assets between 2017, 2016 and 2015 were primarily attributable to changes in the balance of U.S. cash and cash equivalents, which are not allocated to segments.

Below is certain Company-wide geographic data for the years ended December 31, 2017, 2016 and 2015:

| <i>(In thousands)</i>        | 2017         | 2016         | 2015         |
|------------------------------|--------------|--------------|--------------|
| <b>Net sales (a)</b>         |              |              |              |
| United States                | \$ 1,159,578 | \$ 1,076,259 | \$ 1,069,526 |
| France                       | 176,052      | 151,031      | 169,072      |
| Poland                       | 188,244      | 153,986      | 150,654      |
| United Kingdom               | 99,069       | 86,458       | 89,757       |
| Brazil                       | 109,960      | 74,961       | 63,439       |
| All other countries          | 192,104      | 223,471      | 233,719      |
| Total                        | \$ 1,925,007 | \$ 1,766,166 | \$ 1,776,167 |
| <b>Long-lived assets (b)</b> |              |              |              |
| United States                | \$ 420,342   | \$ 411,023   | \$ 387,744   |
| Germany                      | 29,116       | 27,475       | 30,268       |
| Singapore                    | 33,530       | 36,270       | 39,181       |
| Brazil (c)                   | 55,974       | 58,106       | 26,721       |
| China                        | 30,849       | 29,508       | 25,689       |
| United Kingdom               | 21,657       | 20,309       | 22,943       |
| All other countries          | 50,631       | 47,670       | 52,139       |
| Total                        | \$ 642,099   | \$ 630,361   | \$ 584,685   |

- (a) Net sales are attributed to countries based on the location of the Company facility making the sales.  
(b) Includes net property, plant and equipment, goodwill and other intangible assets.  
(c) The change between 2016 and 2015 was attributable to the acquisition described in Note 20.

## 18. Earnings Per Share

Below is the computation of basic and diluted earnings per share for the years ended December 31, 2017, 2016 and 2015.

| <i>(In thousands, except per share amounts)</i>   | 2017      | 2016      | 2015      |
|---|-----------|-----------|-----------|
| <b>Computation of Basic Earnings per Share</b>  |           |           |           |
| Net income attributable to Stepan Company   | \$ 91,578 | \$ 86,191 | \$ 75,968 |
| Weighted-average number of shares outstanding   | 22,946    | 22,793    | 22,730    |
| Basic earnings per share  | \$ 3.99   | \$ 3.78   | \$ 3.34   |
| <b>Computation of Diluted Earnings per Share</b>  |           |           |           |
| Net income attributable to Stepan Company   | \$ 91,578 | \$ 86,191 | \$ 75,968 |
| Weighted-average number of shares outstanding   | 22,946    | 22,793    | 22,730    |
| Add weighted-average net shares from assumed exercise of options (under treasury share method) (a)                      | 161       | 159       | 118       |
| Add weighted-average net shares related to unvested stock awards (under treasury share method)                          | 8         | 6         | 3         |
| Add weighted-average net shares from assumed exercise of SARs (under treasury share method)                             | 142       | 68        | 1         |
| Add weighted-average contingently issuable net shares related to performance stock awards (under treasury share method) | 120       | 68        | 6         |
| Weighted-average shares applicable to diluted earnings  | 23,377    | 23,094    | 22,858    |
| Diluted earnings per share  | \$ 3.92   | \$ 3.73   | \$ 3.32   |

- (a) Options to purchase 18,630, 43,715 and 124,531 shares of common stock were not included in the computations of diluted earnings per share for the years ended December 31, 2017, 2016 and 2015, respectively. The options' exercise prices were greater than the average market price for the common stock and the effect of the options on earnings per share would have been antidilutive.

### 19. Accumulated Other Comprehensive Income (Loss)

Below is the change in the Company's accumulated other comprehensive income (loss) (AOCI) balance by component (net of income taxes) for the years ended December 31, 2017, 2016 and 2015:

| <i>(In thousands)</i>                               | Foreign<br>Currency<br>Translation<br>Adjustments | Defined<br>Benefit<br>Pension Plan<br>Adjustments | Cash Flow<br>Hedge<br>Adjustments | Total               |
|---|---|---|-----------------------------------|---------------------|
| <b>Balance at December 31, 2014</b>                 | <b>\$ (42,914)</b>                                | <b>\$ (41,149)</b>                                | <b>\$ 118</b>                     | <b>\$ (83,945)</b>  |
| Other comprehensive income before reclassifications | (45,423)  | 1,311   | (49)                              | (44,161)            |
| Amounts reclassified from AOCI                      | —   | 3,013   | 5                                 | 3,018               |
| Net current period other comprehensive income       | (45,423)  | 4,324   | (44)                              | (41,143)            |
| <b>Balance at December 31, 2015</b>                 | <b>\$ (88,337)</b>                                | <b>\$ (36,825)</b>                                | <b>\$ 74</b>                      | <b>\$ (125,088)</b> |
| Other comprehensive income before reclassifications | (8,438)   | 3,818   | (19)                              | (4,639)             |
| Amounts reclassified from AOCI                      | —   | 2,217   | 45                                | 2,262               |
| Net current period other comprehensive income       | (8,438)   | 6,035   | 26                                | (2,377)             |
| <b>Balance at December 31, 2016</b>                 | <b>\$ (96,775)</b>                                | <b>\$ (30,790)</b>                                | <b>\$ 100</b>                     | <b>\$ (127,465)</b> |
| Other comprehensive income before reclassifications | 26,214  | (582)   | —                                 | 25,632              |
| Amounts reclassified from AOCI                      | —   | 2,279   | (9)                               | 2,270               |
| Net current period other comprehensive income       | 26,214  | 1,697   | (9)                               | 27,902              |
| <b>Balance at December 31, 2017</b>                 | <b>\$ (70,561)</b>                                | <b>\$ (29,093)</b>                                | <b>\$ 91</b>                      | <b>\$ (99,563)</b>  |

Amounts reclassified out of AOCI for the three years ended December 31, 2017, 2016 and 2015, is displayed below:

| <i>(In thousands)</i>                         | Amounts Reclassified from AOCI (a) |                   |                   | Affected Line Item in<br>Consolidated<br>Statements of Income |
|---|------------------------------------|-------------------|-------------------|---|
|   | 2017                               | 2016              | 2015              |   |
| <b>Amortization of defined pension items:</b> |                                    |                   |                   |   |
| Prior service cost                            | \$ (14)                            | \$ (14)           | \$ (17)           |   |
| Actuarial loss                                | (3,509)                            | (3,508)           | (4,757)           |   |
|   | <b>\$ (3,523)</b>                  | <b>(3,522)</b>    | <b>(4,774)</b>    | Total before tax (b)  |
|   | <b>1,244</b>                       | <b>1,305</b>      | <b>1,761</b>      | Tax benefit   |
|   | <b>\$ (2,279)</b>                  | <b>\$ (2,217)</b> | <b>\$ (3,013)</b> | Net of tax  |
| <b>Gains and losses on cash flow hedges:</b>  |                                    |                   |                   |   |
| Interest rate contracts                       | \$ —                               | \$ (82)           | \$ (22)           | Interest, net   |
| Foreign exchange contracts                    | 9                                  | 9                 | 9                 | Cost of sales   |
|   | <b>9</b>                           | <b>(73)</b>       | <b>(13)</b>       | Total before tax  |
|   |                                    | 28                | 8                 | Tax benefit   |
|   | <b>\$ 9</b>                        | <b>\$ (45)</b>    | <b>\$ (5)</b>     | Net of tax  |
| <b>Total reclassifications for the period</b> | <b>\$ (2,270)</b>                  | <b>\$ (2,262)</b> | <b>\$ (3,018)</b> | Net of tax  |

(a) Amounts in parentheses denote expense to statement of income.

(b) This component of accumulated other comprehensive income is included in the computation of net periodic benefit cost (see Note 13 for details regarding net periodic benefit costs for the Company's U.S. and U.K. defined benefit plans).

## 20. Acquisitions

### 2017 Acquisition Agreement

On June 13, 2017, the Company announced that it had reached an agreement with BASF Mexicana, S.A. DE C.V. (BASF) to acquire BASF's production facility in Ecatepec, Mexico, and a portion of its related surfactants business. The facility, which is near Mexico City, has over 50,000 metric tons of capacity, 124,000 square feet of warehouse space, a laboratory and office space. The acquisition is currently expected to be completed in 2018, subject to normal closing conditions including necessary governmental consents. The acquisition supports the Company's growth strategies in Latin America. The acquired facility and business will be included in the Company's Surfactant segment.

### 2016 Business Acquisitions

On October 3, 2016, the Company's subsidiary in Brazil acquired the commercial business of Tebras Tensoativos do Brasil Ltda. (Tebras) and the sulfonation production facility of PBC Industria Quimica Ltda. (PBC). The original purchase price of the acquisitions, including adjustments for working capital, was R\$93,309,000 (approximately \$29,075,000), of which R\$70,000,000 (approximately \$21,812,000) was paid in the fourth quarter of 2016 from cash on hand, R\$9,000,000 (approximately \$2,804,000) was deposited in escrow to cover certain potential losses as specified in the purchase agreement and R\$14,309,000 (approximately \$4,459,000) for working capital adjustments was unpaid at December 31, 2016 pending agreement on the adjustment amounts. (All U.S. dollar equivalents were calculated using the October 3, 2016 exchange rates.)

In the first quarter of 2017, the Company settled on and paid the working capital adjustment amounts that were outstanding at December 31, 2016. The payment totaled R\$13,925,000 (approximately \$4,339,000), which made the adjusted purchase price of the acquisitions R\$92,925,000 (approximately \$28,955,000). As a result of the change in purchase price, the amount of the purchase price allocated to goodwill changed from \$14,327,000 to \$14,207,000. The value of all other assets acquired and liabilities assumed remained as previously reported. In addition, the change in purchase price had no impact on the Company's current or previously reported results of operations.

The combined entities have 25,000 metric tons of sulfonation capacity and a large, diverse customer portfolio. The acquisition expanded and diversified the Company's customer base for sulfonated products in Brazil and provided an opportunity to sell the Company's broader surfactant portfolio to over 1,200 new customers who benefit from the Company's technical service and formulation support. The acquired businesses are included in the Company's Surfactants segment.

The acquisitions were accounted for as a business combination, and, accordingly, the assets acquired and liabilities assumed as part of the acquisition were measured and recorded at their estimated fair values. The following table summarizes the assets acquired and liabilities assumed:

*(Dollars in thousands)*

|                                  |                  |
|----------------------------------|------------------|
| <b>Assets:</b>                   |                  |
| Current assets                   | \$ 5,165         |
| Property, plant and equipment    | 5,716            |
| Identifiable intangible assets   | 7,354            |
| Goodwill                         | 14,207           |
| <b>Total assets acquired</b>     | <b>\$ 32,442</b> |
| <b>Liabilities:</b>              |                  |
| Current liabilities              | \$ 408           |
| Deferred tax liability           | 3,079            |
| <b>Total liabilities assumed</b> | <b>\$ 3,487</b>  |
| <b>Net assets acquired</b>       | <b>\$ 28,955</b> |

The acquired goodwill, which was assigned entirely to the Company's Surfactant segment, is not tax deductible. The goodwill reflects the opportunity of introducing the Company's broad line of surfactant products to the acquired entities' large customer base. Identifiable intangible assets included customer relationships (\$4,331,000), a supply contract (\$2,555,000) and non-compete agreements (\$468,000). The amortization period for these intangibles are 13 years, four years and five years, respectively.

Tebras and PBC generated approximately \$28,000,000 in net sales in 2015, with net income of less than \$2,000,000. Pro forma financial information for 2015 and 2016 has not been included because revenues and earnings of the Company would not have been significantly different than reported had the acquisition date been January 1, 2015.

## 2015 Acquisitions

### *Business Acquisition*

On June 15, 2015, the Company acquired Procter & Gamble do Brasil S.A.'s (P&G Brazil's) sulfonation production facility in Bahia, Brazil. The facility is located in northeastern Brazil and has 30,000 metric tons of surfactants capacity. The acquired business is included in the Company's Surfactant segment. The acquired business complements the Company's existing Vespasiano, Brazil, plant and provides opportunities to serve the growing northeastern Brazil market. The purchase price was \$5,133,000. The acquisition was accounted for as a business combination and, accordingly, the assets acquired and liabilities assumed as part of the acquisition were measured and recorded at their estimated fair values. The purchase included property, plant and equipment valued at \$6,007,000 and the assumption of liabilities valued at \$874,000. No intangibles or goodwill were acquired in the business combination. The purchase price allocation is final, and no allocation adjustments were made to the amounts recorded at the acquisition date. Other acquisition-related expenses were not material. Post-acquisition financial results for the acquired business were insignificant. Pro forma financial information has not been included because revenues and earnings of the Company would not have been significantly different than reported had the acquisition date been January 1, 2014. See Note 22 for information regarding the subsequent impairment of assets at the Bahia, Brazil, site.

### *Asset Acquisition*

In 2015, the Company purchased select chemical manufacturing assets and land from The Sun Products Corporation's Pasadena, Texas, manufacturing site. The Company intends to redeploy the manufacturing assets as needed to reduce future capital expenditures. In addition, the Company is assessing options to produce nonionic surfactants and other products at the site. The purchase price of the land and manufacturing assets was \$13,000,000, of which \$3,377,000 was allocated to land and \$9,623,000 was allocated to manufacturing assets.

## **21. Sale of Product Line**

In January 2015, the Company sold its specialty polyurethane systems product line (kits) to J6 Polymers, LLC (J6) for cash of \$3,262,000. Kits were part of the Company's Polymers segment and accounted for approximately \$2,800,000 of the Company's 2014 net sales. The sale of kits included inventory, customer and supplier lists, formulations, manufacturing procedures and all other intellectual property associated with the manufacturing and selling of kits. As a result of the sale, Company operating income for the year ended December 31, 2015, included a gain of \$2,862,000. The gain was attributed to the Polymer segment. J6 is a business wholly-owned and operated by members of the immediate family of Robert J. Wood, a former Company executive who retired from the Company in April 2014. Mr. Wood is a managing member of J6.

## **22. Business Restructuring and Asset Impairments**

### 2017 Restructuring

During the fourth quarter of 2017, the Company approved a plan to restructure a portion of its Fieldsboro, New Jersey production facility. This decision was made to improve future asset utilization and reduce the North American cost base going forward. The Company recorded \$915,000 of restructuring expenses which reflected termination benefits for the plant employees. In addition, the Company reduced the useful lives of the manufacturing assets that were impacted by the restructuring and recorded \$1,290,000 of accelerated depreciation. This expense was recorded in the cost of sales line of the consolidated statements of income.

Also, in June 2017, the Company eliminated 11 positions from manufacturing operations at its Singapore plant. The Singapore plant is part of the Company's Surfactant segment. The reduction in positions was made to better align the number of personnel with current business requirements and to reduce costs at that site. As a result of the reduction in workforce, termination expense of \$132,000 was recognized in the second quarter of 2017 and there was no remaining liability for the termination pay as of December 31, 2017.

### 2016 Restructuring

In May 2016, the Company announced plans to shut down its Longford Mills, Ontario, Canada (Longford Mills) manufacturing facility, a part of the Surfactant reportable segment, by December 31, 2016. The shutdown plan was developed as an effort to improve the Company's asset utilization in North America and to reduce the Company's fixed cost base. Manufacturing operation of the Longford Mills plant ceased by the end of 2016 and production of goods manufactured at the facility was moved to other Company North American production sites. In addition to the restructuring costs, the Company reduced the useful lives of the manufacturing assets in the Longford Mills plant. As a result, the Company recognized \$4,471,000 of additional depreciation expense for the year ended December 31, 2016. The expense was included in the cost of sales line of the consolidated statements of income. No additional depreciation related to the change in the useful lives of the assets was recognized in 2017.

Decommissioning of the assets continued throughout 2017 and \$2,022,000 of decommissioning expense was recognized in 2017. As of December 31, 2017, an aggregate of \$4,839,000 of expense has been recognized since the beginning of the restructuring, reflecting \$1,594,000 of termination benefits for approximately 30 employees and \$3,245,000 for other expenses principally related to site decommissioning costs. Site decommissioning costs will continue to be incurred in 2018.

Below is a reconciliation of the beginning and ending balances of the Longford Mills restructuring liability:

| <i>(In thousands)</i>                        | Termination<br>Benefits | Other<br>Expense | Total    |
|--|-------------------------|------------------|----------|
| Restructuring liability at January 1, 2016   | \$ —                    | \$ —             | \$ —     |
| Expense recognized                           | 1,594                   | 1,223            | 2,817    |
| Amounts paid                                 | —                       | (781)            | (781)    |
| Foreign currency translation                 | (46)                    | (5)              | (51)     |
| Restructuring liability at December 31, 2016 | \$ 1,548                | \$ 437           | \$ 1,985 |
| Expense recognized                           | -                       | 2,022            | 2,022    |
| Amounts paid                                 | (1,012)                 | (2,377)          | (3,389)  |
| Foreign currency translation                 | 56                      | 17               | 73       |
| Restructuring liability at December 31, 2017 | \$ 592                  | \$ 99            | \$ 691   |

### 2016 Asset Impairments

In the fourth quarter of 2016, the Company recorded pretax charges for asset impairments of \$4,247,000, all related to the Company's Surfactant segment (although the charges were excluded from the Surfactant segment operating results). In the United States, \$2,297,000 of engineering and design costs associated with a planned nonionic surfactants plant construction project in Louisiana were written off from the Company's construction-in-process account, as management decided to make nonionic surfactants at or near the Pasadena, Texas site the Company acquired from the Sun Products Corporation in 2015. In Brazil, the major customer for the Bahia plant exited the product line for which that plant supplied them product. As a result, the Company was required to recognize \$1,950,000 of asset impairment expenses for the facility. Because the customer was under contract with the Company, a negotiated agreement was reached in 2016 whereby the customer agreed to compensate the Company in the lump-sum amount of \$4,250,000 for lost future revenues. The compensation was reported in net sales for the year ended December 31, 2016.

### **23. Customer Claims**

In the fourth quarter of 2016, the Company established a reserve for two customer claims which alleged that product manufactured by the Company may have caused performance problems with the customers' products. The combined amount of the reserve was \$7,367,000, which was recorded as a reduction of net sales in the year ended December 31, 2016. Both claims related to the Company's Surfactant segment. In the fourth quarter of 2017, the Company paid \$2,709,000 for one of the claims and reversed the remainder of the reserve for the claim realizing \$4,660,000 of income in 2017. The claim reversal was recorded within net sales. The second claim remains open.

#### **24. Statement of Cash Flows – Noncash Investing and Financing Activities**

Noncash investing activities included liabilities (accounts payable) incurred for fixed asset acquisitions of approximately \$12,600,000, \$10,410,000, and \$9,515,000 that were unpaid at December 31, 2017, 2016 and 2015, respectively. Noncash investing activities in 2016 included \$4,459,000 for unpaid working capital adjustments related to the Company's 2016 acquisitions in Brazil (see Note 20). Noncash financing activities in 2017 included 35,372 shares of Company common stock (valued at \$2,941,000) issued in connection with the Company's stock award plan. Noncash financing activities were immaterial for the years ended December 31, 2016 and 2015.

#### **25. TIORCO, LLC Joint Venture**

In October 2015, the Company and its partner, Nalco Company (a subsidiary of Ecolab Inc.), made the decision to dissolve their equally owned and operated TIORCO, LLC (TIORCO) enhanced oil recovery joint venture. As a result of the dissolution, TIORCO incurred fourth quarter 2015 exit costs, which included termination pay, lease termination costs and asset impairments. The Company's share of the exit costs was \$2,356,000, which was reported in the 'Loss from equity in joint venture' line of the consolidated statement of income for the year ended December 31, 2015. The Company made a final cash investment of \$2,900,000 to TIORCO during the three-month period ended March 31, 2016, to fund the exit costs and other final cash requirements for dissolving the joint venture. The legal dissolution of TIORCO is complete.

#### **26. Subsequent Events**

On January 30, 2018, the Company entered into a Credit Agreement among the Company, the foreign subsidiary borrowers from time to time party thereto, the lenders party thereto, JP Morgan Chase Bank, N.A., as administrative agent, Bank of America, N.A., as syndication agent, and J.P. Morgan Chase Bank, N.A. and Merrill Lynch Pierce Fenner & Smith Incorporated, as joint lead arrangers and joint bookrunners (the Credit Agreement). The Credit Agreement provides for a \$350,000,000 multi-currency revolving credit facility, which matures on January 30, 2023. Under this five-year committed facility, the Company may draw as needed to finance working capital needs, permitted acquisitions and capital expenditures and for general corporate purposes. This new facility replaces the Company's \$125,000,000 multi-currency revolving credit agreement dated as of July 10, 2014.

The Company is a party to (i) a Note Purchase Agreement dated as of September 29, 2005 (as amended, the 2005 NPA), pursuant to which the Company has issued (a) \$40,000,000 in aggregate principal amount of its 5.69 percent Series 2005-A Senior Notes due November 1, 2018, (b) \$40,000,000 in aggregate principal amount of its 5.88 percent Series 2010-A Senior Notes due June 1, 2022, and (c) \$65,000,000 in aggregate principal amount of its 4.86 percent Series 2011-A Senior Notes due November 1, 2023, (ii) a Note Purchase Agreement dated as of June 27, 2013 (the 2013 NPA), pursuant to which the Company has issued \$100,000,000 in aggregate principal amount of its 3.86 percent Senior Notes due June 27, 2025, and (iii) a Note Purchase Agreement dated as of July 10, 2015 (the 2015 NPA), pursuant to which the Company has issued \$100,000,000 in aggregate principal amount of its 3.95 percent Senior Notes due July 10, 2027. Each of the 2005 NPA, the 2013 NPA and the 2015 NPA were amended effective January 30, 2018 to make certain covenants consistent with those included in the Credit Agreement.

**Selected Quarterly Financial Data**  
(In thousands, except per share data)  
**Unaudited**

| Quarter                                   | 2017       |            |            |            |              |
|---|------------|------------|------------|------------|--------------|
|   | First      | Second     | Third      | Fourth     | Year         |
| Net Sales                                 | \$ 468,269 | \$ 495,101 | \$ 487,814 | \$ 473,823 | \$ 1,925,007 |
| Gross Profit                              | 92,098     | 89,966     | 75,602     | 80,599     | 338,265      |
| Operating Income                          | 46,059     | 38,961     | 30,309     | 30,831     | 146,160      |
| Interest, net                             | (2,992)    | (2,863)    | (2,763)    | (2,826)    | (11,444)     |
| Income Before Income Taxes                | 44,330     | 37,063     | 29,312     | 28,532     | 139,237      |
| Net Income                                | 31,912     | 27,896     | 21,853     | 9,886      | 91,547       |
| Net Income Attributable to Stepan Company | 31,913     | 27,882     | 21,899     | 9,884      | 91,578       |
| Per Diluted Share                         | 1.37       | 1.19       | 0.94       | 0.42       | 3.92         |

| Quarter                                   | 2016       |            |            |            |              |
|---|------------|------------|------------|------------|--------------|
|   | First      | Second     | Third      | Fourth     | Year         |
| Net Sales                                 | \$ 445,897 | \$ 454,603 | \$ 445,030 | \$ 420,636 | \$ 1,766,166 |
| Gross Profit                              | 93,499     | 92,931     | 83,395     | 68,720     | 338,545      |
| Operating Income                          | 44,607     | 42,916     | 28,738     | 9,932      | 126,193      |
| Interest, net                             | (3,614)    | (3,417)    | (2,824)    | (3,350)    | (13,205)     |
| Income Before Income Taxes                | 40,468     | 39,196     | 27,143     | 7,009      | 113,816      |
| Net Income                                | 27,919     | 28,501     | 21,367     | 8,411      | 86,198       |
| Net Income Attributable to Stepan Company | 27,916     | 28,496     | 21,362     | 8,417      | 86,191       |
| Per Diluted Share                         | 1.22       | 1.24       | 0.92       | 0.36       | 3.73         |



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

None

### Item 9A. Controls and Procedures

#### a. Evaluation of Disclosure Controls and Procedures

We have conducted an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the “Exchange Act”), as of December 31, 2017. Based on this evaluation of our disclosure controls and procedures, our Chief Executive Officer and our Chief Financial Officer have concluded that our disclosure controls and procedures were effective as of December 31, 2017, such that the information required to be disclosed in our Securities and Exchange Commission reports is recorded, processed, summarized and reported within the time periods specified by the rules and forms of the Exchange Act and is accumulated and communicated to management, including our Chief Executive Officer and our Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosures.

#### b. Management’s Annual Report on Internal Control over Financial Reporting

The management of the Company is responsible for establishing and maintaining adequate internal control over financial reporting. The Company’s internal control system was designed to provide reasonable assurance to the Company’s management and board of directors regarding the preparation and fair presentation of published financial statements.

All internal control systems, no matter how well designed, have inherent limitations. Therefore, even those systems determined to be effective can provide only reasonable assurance with respect to financial statement preparation and presentation.

The Company’s management assessed the effectiveness of the Company’s internal control over financial reporting as of December 31, 2017. In making this assessment, it used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in *Internal Control – Integrated Framework (2013)*. Based on our assessment we believe that, as of December 31, 2017, the Company’s internal controls over financial reporting were effective based on those criteria.

The Company’s independent registered public accounting firm that audited the financial statements included in this Form 10-K has issued an attestation report on the Company’s internal control over financial reporting. This report follows:

#### c. Report of Independent Registered Public Accounting Firm

To the Shareholders and Board of Directors of  
Stepan Company  
Northfield, Illinois

##### Opinion on Internal Control over Financial Reporting

We have audited the internal control over financial reporting of Stepan Company and subsidiaries (the “Company”) as of December 31, 2017, based on criteria established in *Internal Control — Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2017, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by COSO.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated financial statements as of and for the year ended December 31, 2017, of the Company and our report dated February 27, 2018, expressed an unqualified opinion on those financial statements.

##### Basis for Opinion

The Company’s management is responsible 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 Annual Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company’s internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

#### Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) 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 in accordance with authorizations of management and directors of the company; and (3) 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.

/s/ Deloitte & Touche LLP  
DELOITTE & TOUCHE LLP

Chicago, Illinois  
February 27, 2018

#### d. Changes in Internal Control Over Financial Reporting

There were no changes in the Company's internal controls over financial reporting (as defined in Rule 13a-15(f) under the Exchange Act) that occurred during the quarter ended December 31, 2017, that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

### Item 9B. Other Information

On February 21, 2018, the Company amended forms of the Non-Qualified Stock Option Agreement, the Stock Appreciation Rights Agreement, the Stock Awards Agreement and the Performance Grant Agreement (the Form Award Agreements) under the Stepan Company 2011 Incentive Compensation Plan, as amended (the Incentive Compensation Plan). The Non-Qualified Stock Option Agreement and the Stock Appreciation Rights Agreement were amended to specify the vesting dates and the three-year vesting schedule for awards. The Stock Awards Agreement and the Performance Grant Agreement were amended to specify the treatment of outstanding awards in the event of termination.

In addition, on February 21, 2018, the Company's Board of Directors approved an amendment to the Incentive Compensation Plan (the Plan Amendment). The Plan Amendment provides that, in the event of a participant's termination for reasons other than death, disability or retirement, the participant's vested SARs will remain outstanding after the date of termination until the last day of the next trading window.

The foregoing summary is qualified in its entirety by the complete texts of the Plan Amendment and the Form Award Agreements, which are attached as Exhibits 10.21, 10.22, 10.23, 10.24 and 10.25 to this Annual Report on Form 10-K and incorporated herein by reference.

**Item 10. Directors, Executive Officers and Corporate Governance**

(a) Directors

See the Company's Proxy Statement for the Annual Meeting of Stockholders to be held April 24, 2018, for information on the Directors of the Registrant, which is incorporated by reference herein.

(b) Executive Officers

See "Executive Officers of the Registrant" in Part I above for the identification of the Executive Officers of the Registrant. See the Company's Proxy Statement for the Annual Meeting of Stockholders to be held April 24, 2018, for other information on Executive Officers of the Registrant, which is incorporated by reference herein.

(c) Section 16(a) Beneficial Ownership Reporting Compliance

See the Company's Proxy Statement for the Annual Meeting of Stockholders to be held April 24, 2018, for other information regarding Section 16(a) beneficial ownership reporting compliance, which is incorporated by reference herein.

(d) Audit Committee Financial Expert

See the Company's Proxy Statement for the Annual Meeting of Stockholders to be held April 24, 2018, for information on the Company's Audit Committee Financial Expert, which is incorporated by reference herein.

(e) Code of Conduct

See the Company's Proxy Statement for the Annual Meeting of Stockholders to be held April 24, 2018, for information on the Company's Code of Conduct, which is incorporated by reference herein.

**Item 11. Executive Compensation**

See the Company's Proxy Statement for the Annual Meeting of Stockholders to be held April 24, 2018, for information on the Compensation of Executive Officers and Directors, which is incorporated by reference herein.

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

See the Company's Proxy Statement for the Annual Meeting of Stockholders to be held April 24, 2018, for information on Security Ownership, which is incorporated by reference herein.

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

See the Company's Proxy Statement for the Annual Meeting of Stockholders to be held April 24, 2018, for information on Transactions with Related Persons, Promoters and Certain Control Persons and for Corporate Governance Principles and Board Matters, which are incorporated by reference herein.

**Item 14. Principal Accounting Fees and Services**

See the Company's Proxy Statement for the Annual Meeting of Stockholders to be held April 24, 2018, for information on Accounting and Auditing Matters, which is incorporated by reference herein.

PART IV

Item 15. Exhibits, Financial Statement Schedules

(a) Financial Statements

See Item 8 for the Consolidated Financial Statements and supplementary data included in this Form 10-K.

(b) Exhibits

See the following List of Exhibits:

**Exhibit  
No.**

**Description**

|        |  |
|--------|--|
| 3.1    | <a href="#"><u>Restated Certificate of Incorporation of Stepan Company, filed October 21, 2013, with the State of Delaware (filed with the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2013 (File No. 001-4462), and incorporated herein by reference)</u></a>   |
| 3.2    | <a href="#"><u>Amended and Restated Bylaws of Stepan Company (Amended as of November 13, 2015) (filed with the Company's Current Report on Form 8-K filed on November 17, 2015 (File No. 001-4462), and incorporated herein by reference)</u></a>  |
| 10.1   | <a href="#"><u>Stepan Company Directors' Deferred Compensation Plan amended and restated as of January 1, 2005 (filed with the Company's Annual Report on Form 10-K for the year ended December 31, 2006 (File No. 001-4462), and incorporated herein by reference)</u></a>  |
| 10.2   | <a href="#"><u>First Amendment of the Stepan Company Directors' Deferred Compensation Plan (filed with the Company's Annual Report on Form 10-K for the year ended December 31, 2008 (File No. 001-4462), and incorporated herein by reference)</u></a>  |
| 10.3+  | <a href="#"><u>Management Incentive Plan (As Amended and Restated Effective January 1, 2015) (filed with the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2015 (File No. 001-4462), and incorporated herein by reference)</u></a>  |
| 10.4   | <a href="#"><u>Settlement Agreement, which provided information with respect to the Company's agreement with the United States regarding environmental remediation work to be completed at Stepan's site in Maywood, New Jersey (filed with the Company's Current Report on Form 8-K filed on November 18, 2004 (File No. 001-4462), and incorporated herein by reference)</u></a> |
| 10.5+  | <a href="#"><u>Stepan Company 2006 Incentive Compensation Plan (filed with the Company's Proxy Statement on Schedule 14A filed on March 23, 2006 (File No. 001-4462), and incorporated herein by reference)</u></a>  |
| 10.6   | <a href="#"><u>Form of Non-Employee Director Non-Qualified Stock Option Agreement under Stepan Company 2006 Incentive Compensation Plan (filed with the Company's Current Report on Form 8-K filed on April 27, 2006 (File No. 001-4462), and incorporated herein by reference)</u></a>  |
| 10.7+  | <a href="#"><u>Form of Non-Qualified Stock Option Agreement under Stepan Company 2006 Incentive Compensation Plan (filed with the Company's Current Report on Form 8-K filed on February 16, 2007 (File No. 001-4462), and incorporated herein by reference)</u></a>   |
| 10.8+  | <a href="#"><u>First Amendment of the Stepan Company 2006 Incentive Compensation Plan (filed with the Company's Annual Report on Form 10-K for the year ended December 31, 2008 (File No. 001-4462), and incorporated herein by reference)</u></a>   |
| 10.9+  | <a href="#"><u>Second Amendment of the Stepan Company 2006 Incentive Compensation Plan (filed with the Company's Annual Report on Form 10-K for the year ended December 31, 2009 (File No. 001-4462), and incorporated herein by reference)</u></a>  |
| 10.10+ | <a href="#"><u>Third Amendment of the Stepan Company 2006 Incentive Compensation Plan (filed with the Company's Annual Report on Form 10-K for the year ended December 31, 2009 (File No. 001-4462), and incorporated herein by reference)</u></a>   |

| <b>Exhibit No.</b> | <b>Description</b>  |
|--------------------|---|
| 10.11+             | <a href="#">Fourth Amendment of the Stepan Company 2006 Incentive Compensation Plan (filed with the Company's Annual Report on Form 10-K for the year ended December 31, 2009 (File No. 001-4462), and incorporated herein by reference)</a>  |
| 10.12+             | <a href="#">Fifth Amendment of the Stepan Company 2006 Incentive Compensation Plan (filed with the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2012 (File No. 001-4462), and incorporated herein by reference)</a>  |
| 10.13+             | <a href="#">Stepan Company 2011 Incentive Compensation Plan (filed with the Company's Definitive Proxy Statement on Schedule 14A filed on March 31, 2011 (File No. 001-4462), and incorporated herein by reference)</a>   |
| 10.14+             | <a href="#">Form of Non-Qualified Stock Option Agreement under the Stepan Company 2011 Incentive Compensation Plan (filed with the Company's Annual Report on Form 10-K for the year ended December 31, 2016 (File No. 001-4462), and incorporated herein by reference)</a>   |
| 10.15+             | <a href="#">Form of Incentive Stock Option Agreement under the Stepan Company 2011 Incentive Compensation Plan (filed with the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2011 (File No. 001-4462), and incorporated herein by reference)</a>   |
| 10.16+             | <a href="#">Performance Grant Agreement under the Stepan Company 2011 Incentive Compensation Plan (filed with the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2011 (File No. 001-4462), and incorporated herein by reference)</a>  |
| 10.17              | <a href="#">Form of Non-Employee Director Non-Qualified Stock Option Agreement under the Stepan Company 2011 Incentive Compensation Plan (filed with the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2011 (File No. 001-4462), and incorporated herein by reference)</a>   |
| 10.18+             | <a href="#">Form of Stock Appreciation Rights Agreement under the Stepan Company 2011 Incentive Compensation Plan (filed with the Company's Annual Report on Form 10-K for the year ended December 31, 2016 (File No. 001-4462), and incorporated herein by reference)</a>  |
| 10.19+             | <a href="#">Form of Stock Awards Agreement under the Stepan Company 2011 Incentive Compensation Plan (filed with the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2013 (File No. 001-4462), and incorporated herein by reference)</a>  |
| 10.20+             | <a href="#">Form of Performance Grant Agreement under the Stepan Company 2011 Incentive Compensation Plan (filed with the Company's Current Report on Form 8-K filed on February 23, 2015 (File No. 001-4462), and incorporated herein by reference)</a>  |
| 10.21*+            | <a href="#">First Amendment to the Stepan Company 2011 Incentive Compensation Plan</a>  |
| 10.22*+            | <a href="#">Form of Non-Qualified Stock Option Agreement under the Stepan Company 2011 Incentive Compensation Plan</a>  |
| 10.23*+            | <a href="#">Form of Performance Grant Agreement under the Stepan Company 2011 Incentive Compensation Plan</a>   |
| 10.24*+            | <a href="#">Form of Stock Appreciation Rights Agreement under the Stepan Company 2011 Incentive Compensation Plan</a>   |
| 10.25*+            | <a href="#">Form of Stock Awards Agreement under the Stepan Company 2011 Incentive Compensation Plan</a>  |
| 10.26+             | <a href="#">Performance Award Deferred Compensation Plan (Effective January 1, 2008) (filed with the Company's Current Report on Form 8-K filed on October 24, 2008 (File No. 001-4462), and incorporated herein by reference)</a>  |
| 10.27              | <a href="#">Note Purchase Agreement, dated as of September 29, 2005, regarding 5.69% Senior Notes due November 1, 2018, with Connecticut General Life Insurance Company, Life Insurance Company of North America, MONY Life Insurance Company, AXA Equitable Life Insurance Company and Horizon Blue Cross Blue Shield of New Jersey (filed with the Company's Current Report on Form 8-K filed on October 3, 2005 (File No. 001-4462), and incorporated herein by reference)</a> |

| <b>Exhibit No.</b> | <b>Description</b>  |
|--------------------|---|
| 10.28              | <a href="#">First Supplement to Note Purchase Agreement (September 29, 2005), dated as of June 1, 2010, regarding 5.88% Senior Notes due June 1, 2022, with The Prudential Insurance Company of America, Prudential Retirement Insurance and Annuity Company, Forethought Life Insurance Company, AXA Equitable Life Insurance Company, Connecticut General Life Insurance Company and Life Insurance Company of North America (filed with the Company's Current Report on Form 8-K filed on June 3, 2010 (File No. 001-4462), and incorporated herein by reference)</a>  |
| 10.29              | <a href="#">First Amendment, dated as of October 25, 2011, to Note Purchase Agreement dated as of September 29, 2005 (filed with the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2011 (File No. 001-4462), and incorporated herein by reference)</a>  |
| 10.30              | <a href="#">Second Supplement to Note Purchase Agreement (September 29, 2005), dated as of November 1, 2011, regarding 4.86% Senior Notes due November 1, 2023 (filed with the Company's Current Report on Form 8-K filed on November 4, 2011 (File No. 001-4462), and incorporated herein by reference)</a>  |
| 10.31*             | <a href="#">Second Amendment, dated as of April 23, 2014, to Note Purchase Agreement dated as of September 29, 2005</a>   |
| 10.32              | <a href="#">Third Amendment, dated as of January 30, 2018, to the Note Purchase Agreement dated as of September 29, 2005 among Stepan Company and the noteholders party thereto (filed with the Company's Current Report on Form 8-K filed on February 2, 2018 (File No. 001-4462) and incorporated herein by reference)</a>  |
| 10.33              | <a href="#">Note Purchase Agreement, dated as of June 27, 2013, regarding 3.86% Senior Notes due June 27, 2025 (filed with the Company's Current Report on Form 8-K filed on July 3, 2013 (File No. 001-4462), and incorporated herein by reference)</a>  |
| 10.34              | <a href="#">First Amendment, dated as of January 30, 2018, to the Note Purchase Agreement dated as of June 27, 2013 among Stepan Company and the noteholders party thereto (filed with the Company's Current Report on Form 8-K filed on February 2, 2018 (File No. 001-4462) and incorporated herein by reference)</a>   |
| 10.35              | <a href="#">Note Purchase Agreement, dated as of July 10, 2015, regarding 3.95% Senior Notes Due July 10, 2027 (filed with the Company's Current Report on Form 8-K filed on July 13, 2015 (File No. 001-4462), and incorporated herein by reference)</a>   |
| 10.36              | <a href="#">First Amendment, dated as of January 30, 2018, to the Note Purchase Agreement dated as of July 10, 2015 among Stepan Company and the noteholders party thereto (filed with the Company's Current Report on Form 8-K filed on February 2, 2018 (File No. 001-4462) and incorporated herein by reference)</a>   |
| 10.37+             | <a href="#">Separation Agreement and Release, date as of August 15, 2017, by and between Stepan Company and Scott Mason (filed with the Company's Current Report on Form 8-K filed on August 17, 2017 (File No. 01-4462) and incorporated herein by reference)</a>  |
| 10.38              | <a href="#">Credit Agreement, dated as of January 30, 2018, among Stepan Company, the foreign subsidiary borrowers from time to time party thereto, the lenders party thereto, and JPMorgan Chase Bank, N.A., as administrative agent, Bank of America, N.A., as syndication agent, and J.P. Morgan Chase Bank, N.A. and Merrill Lynch Pierce Fenner &amp; Smith Incorporated, as joint lead arrangers and joint bookrunners (filed with the Company's Current Report on Form 8-K filed on February 2, 2018 (File No. 001-4462) and incorporated herein by reference)</a> |
| 21*                | <a href="#">Subsidiaries of Registrant at December 31, 2017</a>   |
| 23*                | <a href="#">Consent of Independent Registered Public Accounting Firm</a>  |
| 24*                | <a href="#">Power of Attorney</a>   |
| 31.1*              | <a href="#">Certification of President and Chief Executive Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002</a>  |
| 31.2*              | <a href="#">Certification of Chief Financial Officer (Principal Financial Officer) to Section 302 of the Sarbanes-Oxley Act of 2002</a>   |
| 32*                | <a href="#">Certification of President and Chief Executive Officer (Principal Executive Officer) and Chief Financial Officer (Principal Financial Officer) pursuant to Section 906 of the Sarbanes-Oxley Act of 2002</a>  |
| 101.INS            | XBRL Instance Document  |
| 101.SCH            | XBRL Taxonomy Extension Schema Document   |

| <b><u>Exhibit No.</u></b> | <b><u>Description</u></b>                              |
|---------------------------|--|
| 101.CAL                   | XBRL Taxonomy Extension Calculation Linkbase Document  |
| 101.DEF                   | XBRL Taxonomy Extension Definition Document            |
| 101.LAB                   | XBRL Taxonomy Extension Label Linkbase Document        |
| 101.PRE                   | XBRL Taxonomy Extension Presentation Linkbase Document |

\* Filed herewith

+ Management contract or compensatory plan

**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, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

STEPAN COMPANY

By:   /s/ Matthew J. Eaken    
Matthew J. Eaken  
Vice President, Corporate Controller and Interim Chief Financial Officer

February 27, 2018

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

|   |  |                   |
|---|--|-------------------|
| <u>          /s/ F. Quinn Stepan, Jr.          </u><br>F. Quinn Stepan, Jr. | Chairman, President and Chief Executive Officer<br>(Principal Executive Officer)   | February 27, 2018 |
| <u>          /s/ Matthew J. Eaken          </u><br>Matthew J. Eaken         | Vice President, Corporate Controller and Interim Chief Financial Officer<br>(Principal Financial and Accounting Officer) | February 27, 2018 |
| <u>          /s/ Michael R. Boyce          </u><br>Michael R. Boyce         | Director   | February 27, 2018 |
| <u>          /s/ Randall S. Dearth          </u><br>Randall S. Dearth       | Director   | February 27, 2018 |
| <u>          /s/ Joaquin Delgado          </u><br>Joaquin Delgado           | Director   | February 27, 2018 |
| <u>          /s/ Gregory E. Lawton          </u><br>Gregory E. Lawton       | Director   | February 27, 2018 |
| <u>          /s/ Jan Stern Reed          </u><br>Jan Stern Reed             | Director   | February 27, 2018 |
| <u>          /s/ F. Quinn Stepan          </u><br>F. Quinn Stepan           | Director   | February 27, 2018 |
| <u>          /s/ Edward J. Wehmer          </u><br>Edward J. Wehmer         | Director   | February 27, 2018 |

Matthew J. Eaken, pursuant to powers of attorney executed by each of the directors and officers listed above, does hereby execute this report on behalf of each of such directors and officers in the capacity in which the name of each appears above.

February 27, 2018

  /s/ Matthew J. Eaken    
Matthew J. Eaken



**FIRST AMENDMENT****to the****STEPAN COMPANY 2011 INCENTIVE COMPENSATION PLAN**

Subject to certain inapplicable limitations, Section 5.9 of the Stepan Company 2011 Incentive Compensation Plan (the “Plan”) provides that the Plan may be amended at any time by action of the Board of Directors of Stepan Company (the “Company”). In accordance with the authority granted by Section 5.9 of the Plan and the approval provided by the Board of Directors of the Company, the Plan is hereby amended as follows:

1. Effective as of January 1, 2018, Section 3.11(d) of the Plan is amended to read as follows:

“(d) in the case of a Non-Qualified Stock Option or a Stock Appreciation Right, the date which is the last date of the next trading window after such termination if terminated for any reason other than by reason of his becoming Disabled (within the meaning of Code section 22(e)(3)), his death or his retirement under the provisions of any qualified retirement plan that may be maintained by the Company or subsidiary; or”

2. Effective as of January 1, 2018, Section 3.11(e) of the Plan is amended to read as follows:

“(e) in the case of a Stock Award or Performance Grant, the date on which the Participant’s employment with the Company, including its subsidiaries, is terminated for any reason other than by reason of his becoming Disabled (within the meaning of Code section 22(e)(3)), his death or his retirement under the provisions of any qualified retirement plan that may be maintained by the Company or subsidiary.”

3. In all other respects, the Plan remains in full force and effect.

***[Signature Page Follows]***

IN WITNESS WHEREOF, the changes made by this First Amendment shall be effective as of the applicable dates set forth above.

**STEPAN COMPANY**

By: /s/ Gregory Servatius  
Name: Gregory Servatius  
Title: Vice President, Human Resources  
Date: February 21, 2018

**STEPAN COMPANY  
2011 INCENTIVE COMPENSATION PLAN**

**NON-QUALIFIED STOCK OPTION AGREEMENT**

THIS AGREEMENT (this "Agreement"), dated as of the \_\_ day of \_\_\_\_\_, \_\_ (the "Grant Date"), is entered into by and between Stepan Company, a Delaware corporation (the "Company"), and [Participant Name] (the "Participant").

WITNESSETH THAT:

IT IS AGREED, by and between the parties hereto, as follows:

1. In accordance with the provisions of the Stepan Company 2011 Incentive Compensation Plan (the "Plan"), the Company hereby grants to the Participant a Non-Qualified Stock Option to purchase a total of [Number of Shares Granted] shares of common stock of the Company ("Common Stock"). The purchase price of each share of Common Stock subject to this Agreement shall be \$[Grant Price].

2. The right to exercise the option shall be subject to the terms and conditions of the Plan and this Agreement.

The option shall vest and become exercisable in three installments on [CHOOSE ONE][FOR ON-CYCLE GRANTS: each of the last day of the calendar year in which the Grant Date occurred, and the two succeeding annual anniversaries of such date][FOR OFF-CYCLE GRANTS: each of the first three annual anniversaries of the Grant Date] (each such date, a "Vesting Date"), in accordance with the following schedule, provided the Participant has remained continuously employed by the Company through the applicable Vesting Date:

| Applicable Vesting Date | Percent of Option Vested |
|-------------------------|--------------------------|
| First Vesting Date      | 33.33%                   |
| Second Vesting Date     | 33.33%                   |
| Third Vesting Date      | 33.34%                   |

Once the Participant's employment with the Company terminates for any reason, no additional portion of the option shall become vested and any unvested portion of the option shall be forfeited.

The option shall expire at the earliest of (a) ten (10) years after the date first written above; (b) the date established by the Compensation and Development Committee of the Board of Directors (the "Committee") at the time of the grant; or (c) the date which is the last date of the next trading window as in effect under the Company's Insider Trading Policy occurring after the Participant's employment with the Company is terminated for any reason; provided that, in the case of this clause (c), if the Participant's employment with the Company is terminated as a

result of the Participant becoming Disabled, the Participant's death, or the Participant's retirement (as determined under the provisions of any qualified retirement plan that may be maintained by the Company or a subsidiary), then this clause (c) will not apply to the option and the vested portion thereof will remain outstanding and exercisable until the date determined pursuant to the foregoing clauses (a) and (b).

If a Participant's employment is terminated for gross misconduct, as determined by the Company, all rights under the Plan, including the right to exercise this option, will expire upon the date of such termination.

3. To the extent the option has become vested and become exercisable, the option may be exercised in whole or in part by filing a written or electronic notice with the Secretary of the Company at its corporate headquarters or with such other administrator prior to the date the option expires. An exercise may be disallowed if, as determined by the Secretary of the Company, it is not made in compliance with any applicable provisions of the Company's Insider Trading Policy as in effect from time to time. Such notice shall specify the number of shares of Common Stock which the Participant elects to purchase and shall be accompanied by payment of the purchase price for such shares. Subject to the provisions of the following sentence, payment shall be made in cash or by check payable to the Company. All or a portion of such required amount may be paid by delivery of shares of Common Stock, valued in accordance with the provisions of Section 3.2 of the Plan, having an aggregate fair market value which is equal to the amount of cash which would otherwise be required.

4. In the event of a corporate transaction involving the Company (including, without limitation, any stock dividend, stock split, extraordinary cash dividend, recapitalization, reorganization, merger, consolidation, split-up, spin-off, combination or exchange of shares), the provisions of Section 1.5 of the Plan shall apply.

5. Notwithstanding anything in this Agreement to the contrary, this Agreement may be amended at any time and from time to time by the Company without the consent or written agreement of the Participant to the extent necessary to comply with any recapture or "clawback" policy of the Company adopted by the Company's Board of Directors to comply with Section 10D of the Securities Exchange Act of 1934 and any applicable rules or regulations promulgated by the Securities and Exchange Commission or any national securities exchange or national securities association on which the Company's Common Stock may be traded, as determined by the Company's Board of Directors.

6. Except as otherwise provided by the Committee, this option is not assignable or transferable by the Participant otherwise than by will or the laws of descent and distribution and then only as provided herein, and may be exercised during the lifetime of the Participant only by the Participant and only as provided herein. If this option is exercised by the person or persons to whom the rights of the Participant under this option shall pass by will or the laws of descent and distribution, this option may be exercised only in respect of the number of shares which the Participant could have acquired under the option by the exercise thereof at the date of death.

7. This option and its settlement are subject to withholding of all applicable taxes, which withholding obligation shall be satisfied by the payment of cash or check payable to the Company, or surrender of shares of Common Stock which the Participant already owns or the withholding of shares of Common Stock to which a Participant is otherwise entitled under this Agreement, with such surrender of shares or withholding of shares subject to the consent of the Committee.

8. To the extent applicable, it is intended that this Agreement and the Plan comply with the provisions of Section 409A of the Code, so that the income inclusion provisions of Section 409A(a)(1) of the Code do not apply to the Participant. To the greatest extent reasonably possible, this Agreement and the Plan shall be administered in a manner consistent with this intent. Reference to Section 409A of the Code is to Section 409A of the Code, as amended, and will also include any regulations or any other formal guidance promulgated with respect to such Section by the U.S. Department of the Treasury or the Internal Revenue Service. Notwithstanding the foregoing, in no case will the Company be liable to the Participant, the Internal Revenue Service or any other person or entity for taxes imposed on the Participant pursuant to Section 409A of the Code.

9. This Agreement is subject to the terms and conditions of the Plan. In the event of any inconsistency between the provisions of this Agreement and the Plan, the Plan shall govern. All terms used herein with initial capital letters and not otherwise defined herein that are defined in the Plan shall have the meanings assigned to them in the Plan. If any provision of this Agreement or the application of any provision hereof to any person or circumstances is held invalid, unenforceable or otherwise illegal, the remainder of this Agreement and the application of such provision to any other person or circumstances shall not be affected, and the provisions so held to be invalid, unenforceable or otherwise illegal shall be reformed to the extent (and only to the extent) necessary to make it enforceable, valid and legal.

10. This Agreement may be amended at any time and in any manner by the Company through written notice thereof to the Participant; provided, however, that no such amendment shall impair the rights of the Participant under this Agreement without the written consent or agreement of the Participant.

11. This Agreement does not constitute a contract of employment or continued service, and participation in the Plan will not give any employee or Participant the right to be retained in the employ of the Company, including its subsidiaries, or any right or claim to any benefit under the Plan unless such right or claim has specifically accrued under the terms of the Plan prior to the issuance of Common Stock pursuant to the exercise thereof.

***[Signature Page Follows]***

This Agreement is hereby accepted as of the date set forth below.

By: \_\_\_\_\_  
Participant Name

Date: \_\_\_\_\_  
Acceptance Date

**STEPAN COMPANY  
2011 INCENTIVE COMPENSATION PLAN**

**PERFORMANCE GRANT AGREEMENT**

THIS AGREEMENT (this "Agreement"), dated as of the \_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, is entered into by and between Stepan Company, a Delaware corporation (the "Company"), and [Participant Name] (the "Participant").

WITNESSETH THAT:

IT IS AGREED, by and between the parties hereto, as follows:

1. Subject to the terms, conditions and restrictions set forth in this Agreement and in accordance with the provisions of the Stepan Company 2011 Incentive Compensation Plan (the "Plan"), the Company hereby grants to the Participant as of the date first written above [Number of Shares Granted] performance shares (the "Performance Shares"). Each Performance Share represents one hypothetical share of Common Stock of the Company ("Common Stock") and is equal to the value of one share of Common Stock. Receipt of Shares of Common Stock in respect of the Performance Shares shall be subject to the performance conditions set forth in Section 2, and any such shares of Common Stock will also be subject to the restrictions on transferability and forfeiture set forth in Section 3.

2. The Performance Shares shall be subject to the performance conditions as set forth in paragraphs (a), (b) and (c) below (the "Performance Conditions").

(a) The Performance Shares are contingently awarded subject to the condition that the number of Performance Shares, if any, earned by the Participant is dependent on if, and to the extent, that the Threshold, Target or Maximum performance level of the one-year performance goal is achieved for the One-Year Performance Period and that the three-year performance goal is achieved for the Three-Year Performance Period, each as determined by the Compensation and Development Committee of the Board of Directors (the "Committee") in its sole discretion. Accordingly, the number of Performance Shares awarded hereby shall be adjusted based upon the achievement of a specified level of the Company's Net Income ("CNI") and Return on Invested Capital ("ROIC") for the One-Year Performance Period and Three-Year Performance Period, respectively, as determined by the Committee, as heretofore set forth by the Committee in writing, which document is incorporated herein by reference. The "One-Year Performance Period" for purposes of this Agreement is the period beginning on January 1, \_\_\_\_\_ and ending on December 31, \_\_\_\_\_, and the "Three-Year Performance Period" for purposes of this Agreement is the period beginning on January 1, \_\_\_\_\_ and ending on December 31, \_\_\_\_\_.

(b) Except as otherwise provided in this Agreement, the number of Performance Shares that the Participant shall earn at the end of the Three-Year Performance Period (unless forfeited pursuant to Section 3) shall equal the number of Performance Shares awarded in accordance with Section 1 hereof, multiplied first by the applicable CNI percentage (“Applicable CNI Percentage”), which corresponds to the Company’s achieved specified CNI for the One-Year Performance Period, and which is set by the Committee. For levels of actual performance between the Threshold, Target and Maximum levels of performance achieved, as set by the Committee, the Applicable CNI Percentage will be calculated by prorating between the values assigned to the specified performance levels (the final calculation referred to as the “CNI Calculation”). The CNI Calculation shall then be multiplied by the applicable ROIC percentage (“Applicable ROIC Percentage”), as set by the Committee, which corresponds to the Company’s achieved specified cumulative ROIC percentage for the Three-Year Performance Period. The Applicable ROIC Percentage will be calculated by prorating between the percentages assigned to the achieved specified cumulative ROIC percentages. The final calculation shall be referred to as the “Applicable Percentage.”

(c) Any Performance Shares awarded hereby that the Participant does not earn at the end of the Three-Year Performance Period pursuant to this Section 2 and as determined by the Committee, shall be deemed forfeited, and the Company shall be authorized to cancel such Performance Shares at the end of the Three-Year Performance Period. The provisions of this Section 2 shall not affect in any way forfeitures under Section 3.

3. The Performance Shares shall be subject to the restrictions on transferability and risk of forfeiture set forth in paragraphs (a) and (b) below (the “Risks of Forfeiture”) until such Risks of Forfeiture lapse in accordance with the terms of this Agreement. Upon a lapse of the Risks of Forfeiture, the Performance Shares to which the Risks of Forfeiture applied shall vest, and if and to the extent earned, shall become distributable to the Participant following the end of the Three-Year Performance Period as provided in Section 5.

(a) The Performance Shares awarded to the Participant and the Participant’s interest therein may not be sold, assigned, transferred, pledged, hypothecated, or otherwise encumbered other than by will or the laws of descent and distribution and shall be subject to a Risk of Forfeiture during the period beginning on the date first written above and ending on December 31, \_\_\_\_\_ (the “Restricted Period”). No such sale, assignment, transfer, pledge, hypothecation or encumbrance, whether made or created by voluntary act of the Participant or of any agent of the Participant or by operation of law, shall be recognized by, or be binding upon or shall in any manner affect the rights of, the Company.

(b) Except as otherwise provided in this Agreement, if the employment of the Participant to the Company or its subsidiaries shall be terminated during the Restricted Period for any reason, the Participant shall immediately forfeit to the Company all Performance Shares, without any consideration paid to the Participant, and, thereafter, the Participant shall have no further rights with respect to such Performance Shares.



4. The lapse of Risks of Forfeiture shall be as set forth in paragraphs (a) and (b) below.

(a) Except as otherwise provided in this Agreement, the Risks of Forfeiture will lapse and the Participant's rights will vest with respect to the Performance Shares (as adjusted in accordance with Section 2) on the first day following the end of the Restricted Period, provided the Participant shall have been continuously employed by the Company or a subsidiary thereof from the date first written above through the date of such lapse.

(b) Notwithstanding any other provision of this Agreement, if the Participant's employment with the Company or its subsidiaries terminates before the end of the Restricted Period by reason of (i) the Participant's death, (ii) the Participant becoming Disabled, or (iii) the Participant's retirement (as determined under the provisions of any qualified retirement plan maintained by the Company or a subsidiary) after [CHOOSE ONE][FOR ON-CYCLE AWARDS: the last day of the calendar year in which the Grant Date occurs][FOR OFF-CYCLE AWARDS: the first anniversary of the Grant Date], then the Risks of Forfeiture will lapse and the Participant's right to the Performance Shares (as adjusted pursuant to Section 2 and this Section 4(b)) shall immediately vest. The number of Performance Shares earned to which the Participant may become entitled pursuant to this Section 4(b), shall equal (A) in the case of a termination of the Participant's employment pursuant to Section 4(b)(i) or (ii), the number of Performance Shares granted hereunder, as adjusted pursuant to Section 2, and (B) in the case of the Participant's retirement pursuant to Section 4(b)(iii), the product of (I) the number of Performance Shares granted hereunder, as adjusted pursuant to Section 2, multiplied by (II) a fraction, the numerator of which is the number of whole months during the Restricted Period during which the Participant was employed by the Company or its subsidiaries, and the denominator of which is thirty-six (36), with the result then rounded up or down to the nearest whole number of shares.

5. As soon as practicable after the expiration of the Three-Year Performance Period but in no event later than the 15th day of the third month following the end of the Three-Year Performance Period, the Committee shall certify in writing the extent, if any, to which the performance goals have been met and the number of Performance Shares payable, and the Company will issue to the Participant, except to the extent the Participant has elected to defer payment pursuant to the terms of any applicable plan or program of the Company or subsidiary permitting such deferral, the number of shares of Stock equal in number to the Performance Shares earned under Section 2, or, if applicable, Section 4 (in each case less any shares withheld pursuant to Section 5.1 of the Plan) and with respect to which the Risks of Forfeiture have lapsed.

6. In the event of a corporate transaction involving the Company (including, without limitation, any stock dividend, stock split, extraordinary cash dividend, recapitalization, reorganization, merger, consolidation, split-up, spin-off, combination or exchange of shares), the provisions of Section 1.5 of the Plan shall apply.

7. Notwithstanding anything in this Agreement to the contrary, this Agreement may be amended at any time and from time to time by the Company without the consent or written agreement of the Participant to the extent necessary to comply with any recapture or “clawback” policy of the Company adopted by the Company’s Board of Directors to comply with Section 10D of the Securities Exchange Act of 1934 and any applicable rules or regulations promulgated by the Securities and Exchange Commission or any national securities exchange or national securities association on which the Company’s Common Stock may be traded, as determined by the Company’s Board of Directors.

8. Any Performance Shares awarded hereby are subject to withholding of all applicable taxes, which withholding obligation shall be satisfied by the payment of cash or check payable to the Company, or surrender of shares of Common Stock which the Participant already owns or the withholding of shares of Common Stock to which a Participant is otherwise entitled under this Agreement, with such surrender of shares or withholding of shares subject to the consent of the Committee.

9. It is intended that this Agreement and the Plan comply with the provisions of Section 409A of the Code, so that the income inclusion provisions of Section 409A(a)(1) of the Code do not apply to the Participant. To the greatest extent reasonably possible, this Agreement and the Plan shall be administered in a manner consistent with this intent. Reference to Section 409A of the Code is to Section 409A of the Code, as amended, and will also include any regulations or any other formal guidance promulgated with respect to such Section by the U.S. Department of the Treasury or the Internal Revenue Service. Notwithstanding the foregoing, in no case will the Company be liable to the Participant, the Internal Revenue Service or any other person or entity for taxes imposed on the Participant pursuant to Section 409A of the Code.

10. This Agreement is subject to the terms and conditions of the Plan. In the event of any inconsistency between the provisions of this Agreement and the Plan, the Plan shall govern. All terms used herein with initial capital letters and not otherwise defined herein that are defined in the Plan shall have the meanings assigned to them in the Plan. If any provision of this Agreement or the application of any provision hereof to any person or circumstances is held invalid, unenforceable or otherwise illegal, the remainder of this Agreement and the application of such provision to any other person or circumstances shall not be affected, and the provisions so held to be invalid, unenforceable or otherwise illegal shall be reformed to the extent (and only to the extent) necessary to make it enforceable, valid and legal.

11. This Agreement does not constitute a contract of employment or continued service, and participation in the Plan will not give any employee or Participant the right to be retained in the employ of the Company, including its subsidiaries, or any right or claim to any benefit under the Plan unless such right or claim has specifically accrued under the terms of the Plan prior to the issuance of Common Stock pursuant to the payment thereof.

***[Signature Page Follows]***

This Agreement is hereby accepted as of the date set forth below.

By: \_\_\_\_\_  
Participant Name

Date: \_\_\_\_\_  
Acceptance Date

**STEPAN COMPANY  
2011 INCENTIVE COMPENSATION PLAN**

**STOCK APPRECIATION RIGHTS AGREEMENT**

THIS AGREEMENT (this “Agreement”), dated as of the \_\_\_ day of \_\_\_\_\_, \_\_\_\_ (the “Grant Date”), is entered into by and between Stepan Company, a Delaware corporation (the “Company”), and [Participant Name] (the “Participant”).

W I T N E S S E T H T H A T:

IT IS AGREED, by and between the parties hereto, as follows:

1. Subject to the terms and conditions set forth in this Agreement and in accordance with the provisions of the Stepan Company 2011 Incentive Compensation Plan (the “Plan”), the Company hereby grants to the Participant as of the date first written above [Shares Granted] free-standing Stock Appreciation Rights (the “SARs”). The base price (“Base Price”) of each SAR subject to this Agreement shall be \$[Grant Price], the Fair Market Value of a share of Stock on the date of the grant. Upon exercise of the SARs in whole or in part, the Company will transfer to the Participant the number of shares of common stock of the Company (“Stock”) in an amount equal in value to the excess of the Fair Market Value on the date of exercise of one share of Stock over the Base Price multiplied by the number of SARs exercised, less any applicable federal, state, local or foreign withholding taxes. For the avoidance of doubt, in no event shall the Participant be entitled to receive payment for the SARs in any form other than shares of Stock, and under no circumstance shall the Participant be entitled to receive a cash payment or any other security under this Agreement.

2. The right to exercise these SARs shall be subject to the terms and conditions of the Plan and this Agreement.

These SARs shall vest and become exercisable in three installments on [CHOOSE ONE][FOR ON-CYCLE GRANTS: each of the last day of the calendar year in which the Grant Date occurred, and the two succeeding annual anniversaries of such date][FOR OFF-CYCLE GRANTS: each of the first three annual anniversaries of the Grant Date] (each such date, a “Vesting Date”), in accordance with the following schedule, provided the Participant has remained continuously employed by the Company through the applicable Vesting Date:

| Vesting Date        | Percent of SARs Vested |
|---------------------|------------------------|
| First Vesting Date  | 33.33%                 |
| Second Vesting Date | 33.33%                 |
| Third Vesting Date  | 33.34%                 |

Once the Participant's employment with the Company terminates for any reason, no additional SARs shall become vested, and any unvested portion of the SARs shall be forfeited.

The SARs shall expire at the earliest of (a) ten (10) years after the date first written above; (b) the date established by the Compensation and Development Committee of the Board of Directors (the "Committee") at the time of the grant; or (c) the date which is the last date of the next trading window as in effect under the Company's Insider Trading Policy occurring after the Participant's employment with the Company is terminated for any reason; provided that, in the case of this clause (c), if the Participant's employment with the Company is terminated as a result of the Participant becoming Disabled, the Participant's death, or the Participant's retirement (as determined under the provisions of any qualified retirement plan that may be maintained by the Company or a subsidiary), then this clause (c) will not apply to these SARs and the vested portion thereof will remain outstanding and exercisable until the date determined pursuant to the foregoing clauses (a) and (b).

If a Participant's employment is terminated for gross misconduct, as determined by the Company, all rights under the Plan, including the right to exercise these SARs, will expire upon the date of such termination.

3. To the extent vested and exercisable, the SARs may be exercised in whole or in part by filing a written or electronic notice with the Secretary of the Company at its corporate headquarters or with such other administrator prior to the date the SARs expire. An exercise may be disallowed if, as determined by the Secretary of the Company, it is not made in compliance with any applicable provisions of the Company's Insider Trading Policy as in effect from time to time. Such notice shall specify the number of SARs with respect to which the Participant elects to exercise such right and the date of exercise.

4. In the event of a corporate transaction involving the Company (including, without limitation, any stock dividend, stock split, extraordinary cash dividend, recapitalization, reorganization, merger, consolidation, split-up, spin-off, combination or exchange of shares), the provisions of Section 1.5 of the Plan shall apply.

5. Notwithstanding anything in this Agreement to the contrary, this Agreement may be amended at any time and from time to time by the Company without the consent or written agreement of the Participant to the extent necessary to comply with any recapture or "clawback" policy of the Company adopted by the Company's Board of Directors to comply with Section 10D of the Securities Exchange Act of 1934 and any applicable rules or regulations promulgated by the Securities and Exchange Commission or any national securities exchange or national securities association on which the Company's Common Stock may be traded, as determined by the Company's Board of Directors.

6. Except as otherwise provided by the Committee, these SARs are not assignable or transferable by the Participant otherwise than by will or the laws of descent and distribution or, to the extent not inconsistent with applicable provisions of the Internal Revenue Code (the "Code"), pursuant to a qualified domestic relations order, as such term is defined in the Code. The SARs may be exercised during the lifetime of the Participant only by the Participant or an appropriate legal representative and only as provided herein. If these SARs are exercised by the

person or persons to whom the rights of the Participant under these SARs shall pass by will or the laws of descent and distribution, these SARs may be exercised only in respect of the number of rights which the Participant could have acquired under the SARs by the exercise thereof at the date of death.

7. To the extent applicable, it is intended that this Agreement and the Plan comply with the provisions of Section 409A of the Code, so that the income inclusion provisions of Section 409A(a)(1) of the Code do not apply to the Participant. To the greatest extent reasonably possible, this Agreement and the Plan shall be administered in a manner consistent with this intent. Reference to Section 409A of the Code is to Section 409A of the Code, as amended, and will also include any regulations or any other formal guidance promulgated with respect to such Section by the U.S. Department of the Treasury or the Internal Revenue Service. Notwithstanding the foregoing, in no case will the Company be liable to the Participant, the Internal Revenue Service or any other person or entity for taxes imposed on the Participant pursuant to Section 409A of the Code.

8. This Agreement is subject to the terms and conditions of the Plan. In the event of any inconsistency between the provisions of this Agreement and the Plan, the Plan shall govern. All terms used herein with initial capital letters and not otherwise defined herein that are defined in the Plan shall have the meanings assigned to them in the Plan. If any provision of this Agreement or the application of any provision hereof to any person or circumstances is held invalid, unenforceable or otherwise illegal, the remainder of this Agreement and the application of such provision to any other person or circumstances shall not be affected, and the provisions so held to be invalid, unenforceable or otherwise illegal shall be reformed to the extent (and only to the extent) necessary to make it enforceable, valid and legal.

9. This Agreement may be amended at any time and in any manner by the Company through written notice thereof to the Participant; provided, however, that no such amendment shall impair the rights of the Participant under this Agreement without the written consent or agreement of the Participant.

10. This Agreement does not constitute a contract of employment or continued service, and participation in the Plan will not give any employee or Participant the right to be retained in the employ of the Company, including its subsidiaries, or any right or claim to any benefit under the Plan unless such right or claim has specifically accrued under the terms of the Plan prior to the issuance of any Stock to the Participant pursuant to the exercise of any SAR thereof.

***[Signature Page Follows]***

This Agreement is hereby accepted as of the date set forth below.

By: Participant Name

Date: Acceptance Date

**STEPAN COMPANY  
2011 INCENTIVE COMPENSATION PLAN**

**STOCK AWARDS AGREEMENT**

THIS STOCK AWARDS AGREEMENT (this "Agreement"), is made and entered into as of the \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_ (the "Date of Grant") by and between Stepan Company, a Delaware corporation (the "Company"), and [Participant Name] (the "Participant").

W I T N E S S E T H T H A T:

1. Certain Definitions. Capitalized terms used, but not otherwise defined, in this Agreement will have the meanings given to such terms in the Company's 2011 Incentive Compensation Plan (the "Plan").

2. Grant of Stock Awards. Subject to and upon the terms, conditions and restrictions set forth in this Agreement and in the Plan, pursuant to authorization under a resolution of the Board or the Committee, the Company has granted to the Participant as of the Date of Grant, [Number of Shares Granted] Stock Awards ("Stock Awards"). Each Stock Award is a restricted stock unit that shall represent the right of the Participant to receive one share of Stock after full vesting thereof, subject to and upon the terms and conditions of this Agreement.

3. Restrictions on Transfer of Stock Awards. Subject to Section 5 of the Plan, neither the Stock Awards granted hereby nor any interest therein or in the Stock related thereto shall be transferable prior to payment to the Participant pursuant to Section 5 hereof other than by will or pursuant to the laws of descent and distribution.

4. Vesting of Stock Awards. Except as otherwise provided in this Section 4, the Stock Awards covered by this Agreement shall become nonforfeitable and payable to the Participant pursuant to Section 5 hereof on \_\_\_\_\_ (the "Vesting Date"), conditioned upon the Participant's continuous employment with the Company or a Company subsidiary through the Vesting Date.

Notwithstanding the foregoing, (a) in the event that the Participant's employment with the Company or a Company subsidiary is terminated as a result of (i) the Participant becoming Disabled, (ii) the Participant's death, or (iii) the Participant's retirement (as determined under the provisions of any qualified retirement plan that may be maintained by the Company or a subsidiary) on or after [CHOOSE ONE][FOR ON-CYCLE AWARDS: the last day of the calendar year in which the Grant Date occurs][FOR OFF-CYCLE AWARDS: the first anniversary of the Grant Date], then in any such case, the Stock Awards shall become fully vested as of the date of the Participant's termination of employment with the Company or a Company subsidiary, as applicable; and (b) in the event that the Participant's employment with the Company or a Company subsidiary is terminated (i) by the Company or a Company subsidiary without Cause, or (ii) by the Participant for Good Reason, then in either case the Prorated Portion of the Stock Awards shall become vested as of the date of the Participant's termination of employment with the Company or a Company subsidiary, as applicable.



For purposes of this Section 4:

“Cause” means, as reasonably determined by the Company, (A) conviction of, or plea of *nolo contendere* to, a felony (excluding motor vehicle violations); (B) theft or embezzlement, or attempted theft or embezzlement, of money or property or assets of the Company or any Company subsidiary; (C) illegal use of drugs; (D) material breach of any employment-related undertakings provided in a writing signed by the Participant; (E) gross negligence or willful misconduct in the performance of the Participant’s duties to the Company or any Company subsidiary; (F) breach of any fiduciary duty owed to the Company or any Company subsidiary including, without limitation, engaging in competitive acts while employed by the Company or any Company subsidiary; or (G) the Participant’s willful refusal to perform the assigned duties for which the Participant is qualified as directed by the Participant’s supervising officer or the Board; provided, that in the case of any event constituting Cause within clauses (D) through (G) that is curable by the Participant (as reasonably determined by the Company), the Participant has been given written notice by the Company or a Company subsidiary of such event said to constitute Cause, describing such event in reasonable detail, and has not cured such action within ten (10) days of such written notice as reasonably determined by the Company. For purposes of this definition of Cause, action or inaction by the Participant shall not be considered “willful” unless done or omitted by the Participant (I) intentionally or not in good faith, and (II) without reasonable belief that the Participant’s action or inaction was in the best interests of the Company or any applicable Company subsidiary, and shall not include failure to act by reason of total or partial incapacity due to physical or mental illness. For the avoidance of doubt, if the Participant is eligible for retirement (as described above in this Section 4), but grounds exist to terminate the Participant’s employment with the Company or a Company subsidiary for Cause, then for purposes of this Agreement, the Participant will not be treated as having retired from the Company or a Company subsidiary, but will instead be treated as having been terminated by the Company or a Company subsidiary for Cause.

“Good Reason” means the occurrence of any of the following events: (A) any material reduction, without the Participant’s written consent, in the Participant’s duties, responsibilities or authority; provided, however, that for purposes of this clause (A), neither of (I) a change in the Participant’s supervisor or the number or identity of the Participant’s direct reports, nor (II) a change in the Participant’s title, duties, responsibilities or authority as a result of a realignment or restructuring of the Company or its organizational chart, shall be deemed by itself to materially reduce the Participant’s duties, responsibilities or authority, as long as the Participant continues to report to either the supervisor to whom he or she reported immediately prior to the realignment or restructuring, or a supervisor of equivalent responsibility and authority; or (B) without the Participant’s written consent: (I) a material reduction in the Participant’s base salary, or (II) the relocation of the Participant’s principal place of employment more than fifty (50) miles from its location immediately prior to such relocation. For purposes of this definition of “Good Reason,” notwithstanding the above, the occurrence of any of the events described above will not constitute Good Reason unless the Participant gives the Company written notice within thirty (30) days after the initial occurrence of any of such events that the Participant believes that such event constitutes Good Reason, the

Company thereafter fails to cure any such event within sixty (60) days after receipt of such notice. In addition, the Participant must actually terminate employment within thirty (30) days following the end of the cure period described in the preceding sentence in order for such termination of employment to be considered a termination for Good Reason.

“Prorated Portion” means the product of (A) the number of shares of stock units subject to the Stock Awards, and (B) a fraction, the numerator of which is the number of full months elapsing between the Grant Date and the date of the Participant’s termination of employment with the Company and any Company subsidiary, and the denominator of which is thirty-six (36).

Except as otherwise provided in this Section 4, any Stock Awards that do not become nonforfeitable will be forfeited if the Participant ceases to be continuously employed by the Company or a Company subsidiary prior to the Vesting Date. For purposes of this Agreement, “continuously employed” means the absence of any interruption or termination of the Participant’s employment with the Company or with a subsidiary of the Company. Continuous employment shall not be considered interrupted or terminated in the case of sick leave, military leave or any other leave of absence approved by the Company or in the case of transfers between locations of the Company and its subsidiaries.

5. Form and Time of Payment of Stock Awards.

(a) Payment for the Stock Awards, after and to the extent they have become nonforfeitable, shall be made in the form of shares of Stock. Payment shall be made within 10 days following the date that the Stock Awards become nonforfeitable pursuant to Section 4 hereof.

(b) Except to the extent provided by Section 409A of the Code and permitted by the Committee, no Stock may be issued to the Participant at a time earlier than otherwise expressly provided in this Agreement.

(c) The Company’s obligations to the Participant with respect to the Stock Awards will be satisfied in full upon the issuance of Stock corresponding to the nonforfeitable portion of the Stock Awards.

6. Dividend, Voting, and Other Rights.

(a) The Participant shall have no rights of ownership in the Stock underlying the Stock Awards and no right to vote the Stock underlying the Stock Awards until the date on which the shares of Stock underlying the Stock Awards are issued or transferred to the Participant pursuant to Section 5 above.

(b) The obligations of the Company under this Agreement will be merely that of an unfunded and unsecured promise of the Company to deliver shares of Stock in the future, and the rights of the Participant will be no greater than that of an unsecured general creditor. No assets of the Company will be held or set aside as security for the obligations of the Company under this Agreement.

(c) The Participant shall not have rights to any dividend equivalents on the Stock Awards except as provided in this Section 6(c). Dividend Equivalents will be credited regarding the Stock Awards during the Restricted Period, including any additional Stock that the Participant might become entitled to receive pursuant to a stock dividend or other securities as a result of a merger or reorganization in which the Company is the surviving corporation or any other change in the capital structure of the Company, but shall be withheld and credited to the Participant and subject to the same restrictions and nonforfeiture terms as the Stock Awards. After the Restricted Period, to the extent that the Stock Awards have become nonforfeitable and payable, any credited Dividend Equivalents with respect to such nonforfeitable and payable Stock Awards shall be paid in cash to the Participant pursuant to Section 3.6(e) of the Plan. To the extent the Stock Awards are forfeited pursuant to Section 4 of this Agreement, all credited Dividend Equivalents with respect to the Restricted Stock shall also be forfeited. No interest shall be payable with respect to any such credited Dividend Equivalents.

7. Adjustments. The number of shares of Stock issuable for each Stock Award is subject to adjustment as provided in Section 1.5 of the Plan.

8. Withholding Taxes. To the extent that the Company is required to withhold federal, state, local or foreign taxes in connection with the delivery to the Participant of Stock or any other payment to the Participant or any other payment or vesting event under this Agreement, and the amounts available to the Company for such withholding are insufficient, it shall be a condition to the obligation of the Company to make any such delivery or payment that the Participant make arrangements satisfactory to the Company for payment of the balance of such taxes required to be withheld. The Participant may elect that all or any part of such withholding requirement be satisfied by retention by the Company of a portion of the Stock to be delivered to the Participant or by delivering to the Company other shares of Stock held by the Participant. If such election is made, the shares so retained shall be credited against such withholding requirement at the Fair Market Value of such Stock on the date of such delivery. In no event will the Fair Market Value of the Stock to be withheld and/or delivered pursuant to this Section 8 to satisfy applicable withholding taxes exceed the minimum amount of taxes required to be withheld.

9. Compliance With Law. The Company shall make reasonable efforts to comply with all applicable federal and state securities laws; provided, however, notwithstanding any other provision of the Plan and this Agreement, the Company shall not be obligated to issue any shares of Stock pursuant to this Agreement if the issuance thereof would result in a violation of any such law.

10. Compliance With Section 409A of the Code. To the extent applicable, it is intended that this Agreement and the Plan comply with the provisions of Section 409A of the Code. To the greatest extent reasonably possible, this Agreement and the Plan shall be administered in a manner consistent with this intent, and any provision that would cause this Agreement or the Plan to fail to satisfy Section 409A of the Code shall have no force or effect until amended to comply with Section 409A of the Code (which amendment may be retroactive to the extent permitted by Section 409A of the Code and may be made by the Company without the consent of the Participant). Reference to Section 409A of the Code is to Section 409A of the Code, as amended, and will also include any regulations or any other formal guidance

promulgated with respect to such Section by the U.S. Department of the Treasury or the Internal Revenue Service. Notwithstanding the foregoing, in no case will the Company be liable to the Participant, the Internal Revenue Service or any other person or entity for taxes imposed on the Participant pursuant to Section 409A of the Code.

11. Interpretation. Any reference in this Agreement to Section 409A of the Code will also include any proposed, temporary or final regulations, or any other guidance, promulgated with respect to such Section by the U.S. Department of the Treasury or the Internal Revenue Service. Except as expressly provided in this Agreement, capitalized terms used herein will have the meaning ascribed to such terms in the Plan.

12. No Employment Rights. The grant of the Stock Awards under this Agreement to the Participant is a voluntary, discretionary award being made on a one-time basis and it does not constitute a commitment to make any future awards. The grant of the Stock Awards and any payments made hereunder will not be considered salary or other compensation for purposes of any severance pay or similar allowance, except as otherwise required by law. Nothing contained in this Agreement shall confer upon the Participant any right to be employed or remain employed by the Company or any of its subsidiaries, nor limit or affect in any manner the right of the Company or any of its subsidiaries to terminate the employment or adjust the compensation of the Participant.

13. Relation to Other Benefits. Any economic or other benefit to the Participant under this Agreement or the Plan shall not be taken into account in determining any benefits to which the Participant may be entitled under any profit-sharing, retirement or other benefit or compensation plan maintained by the Company or any of its subsidiaries and shall not affect the amount of any life insurance coverage available to any beneficiary under any life insurance plan covering employees of the Company or any of its subsidiaries.

14. Amendments. Any amendment to the Plan shall be deemed to be an amendment to this Agreement to the extent that the amendment is applicable hereto; provided, however, that (a) no amendment shall adversely affect the rights of the Participant under this Agreement without the Participant's written consent, and (b) the Participant's consent shall not be required to an amendment that is deemed necessary by the Company to ensure compliance with Section 409A of the Code.

15. Severability. In the event that one or more of the provisions of this Agreement shall be invalidated for any reason by a court of competent jurisdiction, any provision so invalidated shall be deemed to be separable from the other provisions hereof, and the remaining provisions hereof shall continue to be valid and fully enforceable.

16. Relation to Plan. This Agreement is subject to the terms and conditions of the Plan. In the event of any inconsistency between the provisions of this Agreement and the Plan, the Plan shall govern. The Committee acting pursuant to the Plan, as constituted from time to time, shall, except as expressly provided otherwise herein or in the Plan, have the right to determine any questions which arise in connection with this Agreement.

17. Recoupment. Notwithstanding anything in this Agreement to the contrary:

(a) If the Participant's employment with the Company or a Company subsidiary is terminated for Cause or other gross misconduct (as determined in the reasonable but sole discretion of the Company), then the Participant's rights to the Stock Awards and any related benefit or compensation under this Agreement will expire and be forfeited as of the date of such termination of employment.

(b) The Stock Awards and any related benefit or compensation under this Agreement is subject to the applicable recoupment, recapture, clawback or recovery policy of the Company as adopted by the Board or the Committee and in effect from time to time. In addition, this Agreement may be amended at any time and from time to time by the Company without the consent or written agreement of the Participant to the extent necessary to comply with any recoupment, recapture, clawback or recovery policy of the Company adopted by the Board or the Committee to comply with Section 10D of the Securities Exchange Act of 1934 and any applicable rules or regulations promulgated by the Securities and Exchange Commission or any national securities exchange or national securities association on which the Stock may then be traded, as reasonably determined by the Board or the Committee in its sole discretion.

18. Successors and Assigns. Without limiting Section 3 hereof, the provisions of this Agreement shall inure to the benefit of, and be binding upon, the successors, administrators, heirs, legal representatives and assigns of the Participant, and the successors and assigns of the Company.

19. Acknowledgment. The Participant acknowledges that the Participant (a) has received a copy of the Plan, (b) has had an opportunity to review the terms of this Agreement and the Plan, (c) understands the terms and conditions of this Agreement and the Plan, and (d) agrees to such terms and conditions.

20. Counterparts. This Agreement may be executed in one or more counterparts, each of which shall be deemed to be an original but all of which together will constitute one and the same agreement.

***[Signature Page Follows]***

This Agreement is hereby accepted as of the date set forth below.

By: \_\_\_\_\_  
Participant Name

Date: \_\_\_\_\_  
Acceptance Date

STEPAN COMPANY

SECOND AMENDMENT TO NOTE PURCHASE AGREEMENT

Dated as of April 23, 2014

to:

NOTE PURCHASE AGREEMENT

dated as of September 29, 2005

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## SECOND AMENDMENT TO NOTE PURCHASE AGREEMENT

THIS SECOND AMENDMENT TO NOTE PURCHASE AGREEMENT, dated as of April 23, 2014 (this “*Second Amendment*”), is among STEPAN COMPANY, a Delaware corporation (the “*Company*”), and each of the institutions which is a signatory to this Second Amendment (collectively, the “*Noteholders*”).

### RECITALS:

A. The Company and each of the purchasers named therein have heretofore entered into (i) a Note Purchase Agreement dated as of September 29, 2005, as amended by that certain First Amendment, dated as of October 25, 2011 (as so amended, the “*2005 Note Purchase Agreement*”), pursuant to which the Company issued its \$40,000,000 5.669% Series 2005-A Senior Notes, due November 1, 2018 (the “*2005 Notes*”), (ii) a First Supplement to Note Purchase Agreement dated as of June 1, 2010 (the “*2010 Supplement*”), pursuant to which the Company issued its \$40,000,000 5.88% Series 2010-A Senior Notes, due June 1, 2022 (the “*2010 Notes*”) and (iii) a Second Supplement to Note Purchase Agreement dated as of November 1, 2011 (the “*2011 Supplement*” and, together with the 2005 Note Purchase Agreement and 2010 Supplement, the “*Note Purchase Agreement*”), pursuant to which the Company issued its \$65,000,000 4.86% Series 2011-A Senior Notes, due November 1, 2023 (the “*2011 Notes*” and, together with the 2005 Notes and 2010 Notes, the “*Notes*”).

B. The Company and the Noteholders now desire to amend the Note Purchase Agreement in the respects, but only in the respects, hereinafter set forth.

C. Capitalized terms used herein shall have the meanings ascribed thereto in the Note Purchase Agreement unless herein defined or the context shall otherwise require.

D. All requirements of law have been fully complied with and all other acts and things necessary to make this Second Amendment a valid, legal and binding instrument according to its terms for the purposes herein expressed have been done or performed.

NOW, THEREFORE, upon the full and complete satisfaction of the conditions precedent to the effectiveness of this Second Amendment set forth in **Section 3.1** hereof, and in consideration of good and valuable consideration the receipt and sufficiency of which is hereby acknowledged, the Company and the Noteholders do hereby agree as follows:

### SECTION 1. SECOND AMENDMENT.

*Section 1.1.* The last paragraph of Section 10.6 of the Note Purchase Agreement is hereby amended by (i) deleting the word “and” at the end of clause (ii), (ii) deleting the period at the end of such paragraph and replacing it with “, and” and (iii) adding a new clause (iv) at the end thereof to read as follows:

(iv) the sale by the Company or any Restricted Subsidiary of accounts receivable owing to it by account debtors which customarily pay on terms longer than general market practices (“*Permitted Supplier Financings*”) pursuant to a receivables purchase agreement or other customary documentation (any such agreement a “*Receivables Purchase Agreement*”) with JPMorgan Chase Bank, National Association or another institution (any such institution a “*Receivables Facility Counterparty*”) whereby the Company or such Restricted Subsidiary promptly receive cash proceeds from such

Receivables Facility Counterparty equal to the face value of such receivables net of a commercially reasonable and customary discount rate; *provided further* that (i) any such sale is a true sale with recourse to the Company or such Restricted Subsidiary limited to breach of representation, warranty or covenant by the Company or such Restricted Subsidiary with respect to the sold receivables; (ii) such Receivables Purchase Agreement is on customary terms for such arrangement; and (iii) no Default or Event of Default exists or would result from the sale of such receivables.

Section 1.2. Section 10 of the Note Purchase Agreement is hereby amended by adding a new Section 10.11 thereto to read as follows:

*Section 10.11. Lien Restrictions.* Notwithstanding anything to the contrary contained in Section 10.5, no Liens permitted pursuant to the terms of Section 10.5 may secure any obligations under the Bank Credit Agreement or any private placement document pursuant to which the Company has issued senior notes, either now existing or existing in the future (each such Bank Credit Agreement or private placement document, a “*Senior Debt Facility*”), unless the Company makes, or causes to be made, effective a provision whereby the Notes will be equally and ratably secured with any and all other obligations thereby secured, such security to be pursuant to an agreement reasonably satisfactory to the Required Holders.

Section 1.3. Section 10 of the Note Purchase Agreement is hereby amended by adding a new Section 10.12 thereto to read as follows:

*Section 10.12. Most Favored Lender Status.* If at any time (including, for the avoidance of doubt, on the date of the Second Amendment) any Senior Debt Facility contains any covenant (whether set forth as a covenant, undertaking, event of default, restriction or other such provision (or any thereof shall be amended or otherwise modified)) similar in nature to the provisions set out in Section 10.6 of this Agreement with respect to Permitted Supplier Financings and such covenant (howsoever expressed) is more restrictive on the Company or would be more beneficial to the holders of Notes than the provisions of Section 10.6 of this Agreement (any such covenant, a “*More Favorable Covenant*”), then (i) such More Favorable Covenant shall be deemed automatically incorporated by reference into this Agreement, *mutatis mutandis*, as if set forth in full herein, effective as of the date when such More Favorable Covenant shall have become effective under such Senior Debt Facility, and (ii) the Company shall provide a More Favored Lender Notice in respect of such More Favorable Covenant.

Any More Favorable Covenant incorporated into this Agreement (herein referred to as an “*Incorporated Covenant*”) pursuant to this Section 10.12, (a) shall thereafter be waived, amended or otherwise modified under this Agreement at such time as the applicable Senior Debt Facility shall be so waived, amended or otherwise modified, *provided* that (A) if a Default or Event of Default then exists (including in respect of such Incorporated Covenant), such Incorporated Covenant shall only be deemed to be so waived, amended or otherwise modified hereunder at such time, if it should occur, when such Default or Event of Default no longer exists and (B) if any fee or other cash consideration is given to the lenders under the applicable Senior Debt Facility for the waiver, amendment or other modification of such More Favorable Covenant, the equivalent of such fee or other cash consideration shall also be given pro rata to the holders of the Notes at substantially the same time, and (b) shall be deemed automatically deleted from this Agreement at such time as such applicable Senior Debt Facility shall be

terminated and no amounts shall be outstanding thereunder *provided* that, if a Default or Event of Default then exists (including in respect of such Incorporated Covenant), such Incorporated Covenant shall only be deemed automatically deleted from this Agreement at such time, if it should occur, when such Default or Event of Default no longer exists.

“*Most Favored Lender Notice*” means, in respect of any More Favorable Covenant, a written notice to each of the holders of the Notes delivered promptly, and in any event within five Business Days after the inclusion of such More Favorable Covenant in any Senior Debt Facility (including by way of amendment or other modification of any existing provision thereof), by a Senior Financial Officer referring to the provisions of this Section 10.12 and setting forth a reasonably detailed description of such More Favorable Covenant (including any defined terms used therein).

*Section 1.4.* The provisions of Paragraph 6 in each of the First Supplement and the Second Supplement are hereby deleted in their entirety and replaced by “Reserved.”.

*Section 1.5.* Schedule B of the Note Purchase Agreement is hereby amended by adding the following new defined term in the appropriate alphabetical order therein:

“*Second Amendment*” means the Second Amendment to Note Purchase Agreement dated as of April [\_\_\_], 2014, among the Company and each of the institutions which is a signatory thereto.

## SECTION 2. REPRESENTATIONS, WARRANTIES AND AGREEMENTS OF THE COMPANY.

*Section 2.1.* To induce the Noteholders to execute and deliver this Second Amendment, the Company represents and warrants to the Noteholders (which representations and warranties shall survive the execution and delivery of this Second Amendment) that:

- (a) this Second Amendment has been duly authorized, executed and delivered by it and this Second Amendment, and the Note Purchase Agreement as amended by this Second Amendment, constitutes the legal, valid and binding obligations, contracts and agreements of the Company enforceable against it in accordance with their respective terms, except as enforcement may be limited by bankruptcy, insolvency, reorganization, moratorium or similar laws or equitable principles relating to or limiting creditors’ rights generally;
- (b) the execution, delivery and performance by the Company of this Second Amendment (i) has been duly authorized by all requisite corporate action and, if required, shareholder action, (ii) does not require the consent or approval of any governmental or regulatory body or agency, and (iii) will not (A) violate (1) any provision of law, statute, rule or regulation or its certificate of incorporation or bylaws, (2) any order of any court or any rule, regulation or order of any other agency or government binding upon it, or (3) any provision of any material indenture, agreement or other instrument to which it is a party or by which its properties or assets are or may be bound, or (B) result in a breach or constitute (alone or with due notice or lapse of time or both) a default under any indenture, agreement or other instrument referred to in clause (iii)(A)(3) of this **Section 2.1(b)**;
- (c) as of the date hereof and after giving effect to this Second Amendment, no Default or Event of Default under the Note Purchase Agreement has occurred which is continuing; and

(d) all of the representations and warranties contained in Section 5 of the Note Purchase Agreement are true and correct in all material respects with the same force and effect as if made by the Company on and as of the date hereof, except that any representation or warranty made as of a specific date shall be deemed made as of such specific date.

Execution and delivery by the Company of this Second Amendment constitutes the certification by the Company that the foregoing representations and warranties are true and correct on and with respect to the date hereof.

**SECTION 3. CONDITIONS TO EFFECTIVENESS OF THIS SECOND AMENDMENT.**

*Section 3.1.* This Second Amendment shall not become effective until, and shall become effective when, each and every one of the following conditions shall have been satisfied:

- (a) executed counterparts of this Second Amendment, duly executed by the Company and the Required Holders of the Notes under the Note Purchase Agreement, shall have been delivered to the Noteholders; and
- (b) the representations and warranties of the Company set forth in **Section 2** hereof are true and correct on and with respect to the date hereof.

Upon receipt of all of the foregoing, this Second Amendment shall become effective.

**SECTION 4. PAYMENT OF NOTEHOLDERS' COUNSEL FEES AND EXPENSES.**

*Section 4.1.* The Company agrees to pay upon demand, the reasonable fees and expenses of Chapman and Cutler LLP, counsel to the Noteholders, in connection with the negotiation, preparation, approval, execution and delivery of this Second Amendment.

**SECTION 5. MISCELLANEOUS.**

*Section 5.1.* This Second Amendment shall be construed in connection with and as part of the Note Purchase Agreement, and except as modified and expressly amended by this Second Amendment, all terms, conditions and covenants contained in the Note Purchase Agreement and each of the Notes are hereby ratified and shall be and remain in full force and effect.

*Section 5.2.* Any and all notices, requests, certificates and other instruments executed and delivered after the execution and delivery of this Second Amendment may refer to the Note Purchase Agreement without making specific reference to this Second Amendment but nevertheless all such references shall include this Second Amendment unless the context otherwise requires.

*Section 5.3.* The descriptive headings of the various Sections or parts of this Second Amendment are for convenience only and shall not affect the meaning or construction of any of the provisions hereof.

*Section 5.4.* This Second Amendment shall be governed by and construed in accordance with New York law.

*Section 5.5.* This Second Amendment may be executed in any number of counterparts, each executed counterpart constituting an original, but all together only one agreement.

[Signature Pages Follow]

IN WITNESS WHEREOF, the parties hereto have executed and delivered this Second Amendment as of the date Second written above

STEPAN COMPANY

By  
Beamer

/s/ Scott D.

Name: Scott D. Beamer  
Title: Vice President and Chief  
Financial Officer

Signature page to Second Amendment to 2005 Note Purchase Agreement

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MUTUAL OF OMAHA INSURANCE COMPANY

By: Prudential Private Placement Investors, L.P. (as Investment Advisor)

By: Prudential Private Placement Investors, Inc. (as its General Partner)

By illegible /s/

Vice President

We acknowledge that we hold \$15,000,000.00 4.86% Series **2011-A** Senior Notes, due November 1, 2023

RGA REINSURANCE COMPANY

By: Prudential Private Placement Investors, L.P. (as Investment Advisor)

By: Prudential Private Placement Investors, Inc. (as its General Partner)

By illegible /s/

Vice President

We acknowledge that we hold \$7,500,000.00 4.86% Series **2011-A** Senior Notes, due November 1, 2023



CONNECTICUT GENERAL LIFE INSURANCE COMPANY

By: Cigna Investments, Inc. (authorized agent)

By \_\_\_\_\_ /s/ Elisabeth V.  
Piker  
Name: Elisabeth  
V. Piker  
Title: Managing Director

We acknowledge that we hold \$6,428,565.00 5.69% Series **2005-A** Senior Notes, due November 1, 2018.

We acknowledge that we hold \$6,000,000 5.88% Series **2010-A** Senior Notes, due November 1, 2018.

LIFE INSURANCE COMPANY OF NORTH AMERICA

By: Cigna Investments, Inc. (authorized agent)

By \_\_\_\_\_ /s/ Elisabeth V.  
Piker  
Name: Elisabeth  
V. Piker  
Title: Managing Director

We acknowledge that we hold \$4,999,995.00 5.69% Series **2005-A** Senior Notes, due November 1, 2018.

We acknowledge that we hold \$2,000,000 5.88% Series **2010-A** Senior Notes, due November 1, 2018.

CIGNA HEALTH AND LIFE INSURANCE COMPANY

By: Cigna Investments, Inc. (authorized agent)

By Piker /s/ Elisabeth V.  
Name: Elisabeth  
V. Piker  
Title: Managing Director

We acknowledge that we hold \$2,142,855 .00 5.69% Series **2005-A** Senior Notes, due November 1, 2018.

We acknowledge that we hold \$2,000,000 5.88% Series **2010-A** Senior Notes, due November 1, 2018.

HEALTHSPRJNG LIFE& HEALTH INSURANCE COMPANY, INC.

By: Cigna Investments, Inc. (authorized agent)

By Piker /s/ Elisabeth V.  
Name: Elisabeth  
V. Piker  
Title: Managing Director

We acknowledge that we hold \$714,285.00 5.69% Series **2005-A** Senior Notes, due November 1, 2018.

Accepted as of the date first written above.

AXA EQUITABLE LIFE INSURANCE COMPANY

By  
Judd

\_\_\_\_\_/s/ Amy

Name:  
Judd  
Title:

Amy

Investment Officer

We acknowledge that we hold \$8,571,420.00 5.69% Series **2005-A** Senior Notes, due November 1, 2018.

We acknowledge that we hold \$10,000,000 5.88% Series **2010-A** Senior Notes, due November 1, 2018.

Signature page to Second Amendment to 2005 Note Purchase Agreement

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Accepted as of the date first written above.

HORIZON BLUE CROSS BLUE SHIELD OF NEW JERSEY

By: AllianceBernstein LP,  
its Investment Advisor

By \_\_\_\_\_ /s/ Amy  
Judd

Name: A

Judd

Title: Investment Officer

We acknowledge that we hold \$1,785,712.50 5.69% Series **2005-A** Senior  
Notes, due November 1, 2018.

Signature page to Second Amendment to 2005 Note Purchase Agreement

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NEW YORK LIFE INSURANCE COMPANY

By \_\_\_\_\_ /s/ James  
Belletire  
Name: James  
Belletire  
Title: Vice President

We acknowledge that we hold \$9,400,000 4.86% Series **2011-A** Senior Notes, due November 1, 2023

NEW YORK LIFE INSURANCE AND ANNUITY CORPORATION

By NYL Investors LLC, its Investment Manager

By \_\_\_\_\_ /s/ James  
Belletire  
Name: James  
Belletire  
Title: Managing Director

We acknowledge that we hold \$9,200,000 4.86% Series **2011-A** Senior Notes, due November 1, 2023

NEW YORK LIFE INSURANCE AND ANNUITY CORPORATION  
INSTITUTIONALLY OWNED LIFE INSURANCE SEPARATE  
ACCOUNT (BOLI 30C)

By NYL Investors LLC, its Investment Manager

By \_\_\_\_\_ /s/ James  
Belletire  
Name: James  
Belletire  
Title: Managing Director

We acknowledge that we hold \$1,200,000 4.86% Series **2011-A** Senior Notes, due November 1, 2023

Accepted as of the date first written above.

NEW YORK LIFE INSURANCE AND ANNUITY CORPORATION  
INSTITUTIONALLY OWNED LIFE INSURANCE SEPARATE ACCOUNT  
(BOLI 3-2)

By NYL Investors LLC, its Investment Manager

By \_\_\_\_\_ /s/ James  
Belletire  
Name: James  
Belletire  
Title: Managing Director

We acknowledge that we hold \$200,000 4.86% Series **2011-A** Senior Notes, due November 1, 2023

Signature page to Second Amendment to 2005 Note Purchase Agreement

**STEPAN COMPANY  
SUBSIDIARIES OF REGISTRANT**

| <u>Subsidiary</u>  | <u>Organized under the Laws of:</u> |
|--|-------------------------------------|
| Stepan Europe S.A.S.   | France                              |
| Stepan Canada Inc.   | Canada                              |
| Stepan Mexico, S.A. de C.V.                                  | Mexico                              |
| Stepan CDMX, S. de R.L. de C.V.                              | Mexico                              |
| Stepan Deutschland GmbH                                      | Germany                             |
| Stepan Colombia S.A.S.                                       | Colombia                            |
| Stepan Quimica Ltda.   | Brazil                              |
| Tebras Tensoativos Do Brasil Ltda.                           | Brazil                              |
| PBC Industria Quimica Ltda.                                  | Brazil                              |
| Stepan UK Limited  | United Kingdom                      |
| Nanjing Stepan Jinling Chemical Limited<br>Liability Company | People's Republic of China          |
| Stepan Chemical (Nanjing) Co., Ltd.                          | People's Republic of China          |
| Stepan (Nanjing) Chemical R&D Co., Ltd.                      | People's Republic of China          |
| Stepan Chemical (Shanghai) Co., Ltd.                         | People's Republic of China          |
| Stepan International Trading (Shanghai) Co., Ltd.            | People's Republic of China          |
| Stepan Philippines, Inc.                                     | Philippines                         |
| Stepan Philippines Quaternaries, Inc.                        | Philippines                         |
| Stepan Polska Sp. z o.o.                                     | Poland                              |
| Stepan Asia Pte. Ltd.  | Singapore                           |
| Stepan Holdings Asia Pte. Ltd.                               | Singapore                           |
| Stepan Holdings, LLC   | Delaware, U.S.A.                    |
| Stepan Specialty Products, LLC                               | Delaware, U.S.A.                    |
| Stepan Mexico Holdings, LLC                                  | Delaware, U.S.A.                    |
| Stepan Surfactants Holdings, LLC                             | Delaware, U.S.A.                    |
| Stepan Specialty Products B.V.                               | Netherlands                         |
| Stepan (India) Private Limited                               | India                               |

**CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

We consent to the incorporation by reference in Post-Effective Amendment No. 1 to Registration Statement Nos. 333-39938 and 333-133588, and Registration Statement Nos. 033-57189 and 333-173878 on Form S-8 of our reports dated February 27, 2018, relating to the consolidated financial statements of Stepan Company and subsidiaries (the “Company”), and the effectiveness of the Company’s internal control over financial reporting, appearing in this Annual Report on Form 10-K of Stepan Company for the year ended December 31, 2017.

/s/ Deloitte & Touche LLP

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DELOITTE & TOUCHE LLP

Chicago, Illinois  
February 27, 2018



**POWER OF ATTORNEY**

The undersigned hereby appoints F. Quinn Stepan, Jr. and Matthew J. Eaken and each of them individually, the true and lawful attorney or attorneys of the undersigned, with substitution and resubstitution, to execute in his name, place and stead in his capacity as an officer or director or both of Stepan Company, a Delaware corporation, the Annual Report on Form 10-K under the Securities Exchange Act of 1934 for the year ended December 31, 2017, and any amendments or supplements thereto, and all instruments necessary or incidental in connection therewith, and to file or cause to be filed such Annual Report and related documents with the Securities and Exchange Commission. Each of said attorneys shall have full power and authority to do and perform, in the name and on behalf of the undersigned, every act whatsoever necessary or desirable to be done in the premises, as fully as all intents and purposes of the undersigned could do in person. The undersigned hereby ratifies and approves the actions of said attorneys and each of them.

IN WITNESS WHEREOF, the undersigned has executed this Power of Attorney on this day of February 20, 2018.

/s/ F. Quinn Stepan, Jr.

F. Quinn Stepan, Jr.

/s/ Matthew J. Eaken

Matthew J. Eaken

/s/ Michael R. Boyce

Michael R. Boyce

/s/ Randall S. Dearth

Randall S. Dearth

/s/ Joaquin Delgado

Joaquin Delgado

/s/ Gregory E. Lawton

Gregory E. Lawton

/s/ Jan Stern Reed

Jan Stern Reed

/s/ F. Quinn Stepan

F. Quinn Stepan

/s/ Edward J. Wehmer

Edward J. Wehmer

**CERTIFICATION OF PRESIDENT AND CHIEF EXECUTIVE OFFICER  
PURSUANT TO EXCHANGE ACT RULE 13a-14(a)/15d-14(a)**

I, F. Quinn Stepan, Jr., certify that:

1. I have reviewed this annual report on Form 10-K of Stepan Company;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
  - (a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
  - (b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - (c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
  - (d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
  - (a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
  - (b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 27, 2018

/s/ F. Quinn Stepan, Jr.  
\_\_\_\_\_  
F. Quinn Stepan, Jr.  
Chairman, President and Chief Executive Officer

**CERTIFICATION OF CHIEF FINANCIAL OFFICER  
PURSUANT TO EXCHANGE ACT RULE 13a-14(a)/15d-14(a)**

I, Matthew J. Eaken, certify that:

1. I have reviewed this annual report on Form 10-K of Stepan Company;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
  - (a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
  - (b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - (c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
  - (d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
  - (a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
  - (b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 27, 2018

/s/ Matthew J. Eaken  


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 Matthew J. Eaken  
 Vice President, Corporate Controller and Interim Chief Financial  
 Officer

CERTIFICATION PURSUANT TO  
18 U.S.C. SECTION 1350,  
AS ADOPTED PURSUANT TO  
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of Stepan Company (the "Company") on Form 10-K for the fiscal year ended December 31, 2017, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), each of the undersigned officers of the Company certifies, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to such officer's knowledge:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company as of the dates and for the periods expressed in the Report.

Date: February 27, 2018

/s/ F. Quinn Stepan, Jr.

Name: F. Quinn Stepan, Jr.

Title: Chairman, President and Chief Executive Officer

/s/ Matthew J. Eaken

Name: Matthew J. Eaken

Title: Vice President, Corporate Controller and Interim Chief  
Financial Officer

*The foregoing certification is being furnished solely pursuant to 18 U.S.C. Section 1350 and is not being filed as part of the Report or as a separate disclosure document.*