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, 2018

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	**36-1823834**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification Number)**
Edens and Winnetka Road, Northfield, Illinois	**60093**
(Address of principal executive offices)	**(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	Name of Each Exchange on Which Registered
Common Stock, $1 par value	**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 every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

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

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See definitions of "large accelerated filer", "accelerated filer", "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☒ Accelerated filer ☐ Non-accelerated filer ☐ 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, 2018, of voting and non-voting common stock held by nonaffiliates of the registrant: $ 1,557,192,793*

Number of shares outstanding of each of the registrant's classes of common stock as of January 31, 2019:

Class	Outstanding at January 31, 2019
Common Stock, $1 par value	22,515,141

Documents Incorporated by Reference

Part of Form 10-K	Document Incorporated
Part III, Items 10-14	Portions of the Proxy Statement for Annual Meeting of Stockholders to be held April 30, 2019.

* Based on reported ownership by all directors and executive officers at June 30, 2018.

STEPAN COMPANY
ANNUAL REPORT ON FORM 10-K
December 31, 2018

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;
- compliance with anti-corruption, environmental, health and safety and product registration laws;
- 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 oilfield applications.

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 compared to that 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 2018, 2017 or 2016. 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 or severe weather conditions.

RAW MATERIALS

The principal raw materials used by the Company are petroleum or plant based. For 2019, 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.

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 expenditures by the Company of $5.4 million during 2018, all of which were classified as capital expenditures. These expenditures represented approximately 6 percent of the Company's total 2018 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 $28.3 million in 2018. 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, 2018 and 2017, the Company employed 2,250 and 2,096 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.

ACQUISITIONS AND DISPOSITIONS

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

WEBSITE

The Company's website address is 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, compensation and development, compliance and nominating and corporate governance 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 qualified and elected.

The executive officers of the Company, their ages and certain other information as of February 27, 2019, are as follows:

Name	Age	Title	Year First Elected Officer
F. Quinn Stepan, Jr.	58	Chairman, President and Chief Executive Officer	1997
Frank Pacholec	63	Vice President, Strategy and Corporate Development and Interim Chief Technology and Sustainability Officer	2003
Arthur W. Mergner	55	Vice President, Supply Chain	2014
Scott R. Behrens	49	Vice President and General Manager – Surfactants	2014
Debra A. Stefaniak	57	Vice President, Business Enablement	2015
Sean T. Moriarty	49	Vice President and General Manager – Polymers	2017
Luis E. Rojo	46	Vice President and Chief Financial Officer	2018
Janet A. Catlett	42	Vice President and Chief Human Resources Officer	2018

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

Frank Pacholec has served the Company as Interim Chief Technology and Sustainability Officer since January 2019 and 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.

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 Enablement since October 2018. From February 2014 to September 2018, she served as Vice President, Business Transformation and from May 2009 to February 2014, she served as Vice President, Global Logistics.

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.

Luis E. Rojo has served the Company as Vice President and Chief Financial Officer since April 2018. From February 2018 to April 2018, he served as Global Hair Care Finance Director at Procter & Gamble Co. (P&G), a branded consumer packaged goods company. From April 2014 to February 2018, he served as NA Hair Care Finance Director at P&G, and from August 2012 to April 2014, he served as Latin America Andean Finance Director at P&G.

Janet A. Catlett has served the Company as Vice President and Chief Human Resources Officer since July 2018. From March 2017 to July 2018, she served as Senior Director Total Rewards at Hollister Incorporated, an independent company that develops, manufactures and markets health care products and services worldwide. From September 2014 to March 2017, she served as Director Total Rewards at Hollister Incorporated. From January 2014 to September 2014, she served the Company as Sales Manager U.S. Distribution.

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, mechanical failure, 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 such hazards and risks are 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 with 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 losing business with these customers in volumes that could adversely affect the Company's 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 volatile. These fluctuations in prices may be affected by supply and demand factors, such as general economic conditions, restrictions on the transport of raw materials (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, and other over-the-road shipping methods to transport raw materials to its manufacturing facilities and to ship finished products 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.

In recent years, the Company has used acquisitions to expand into new markets and to enhance its position in its existing markets. To the extent it seeks to do so in the future 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 United States. In the year ended December 31, 2018, the Company's sales outside of the United States constituted approximately 40 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 United States, which may impact enforceability and consistency of protection of intellectual property assets;
- high levels of inflation;
- fluctuations in foreign currency exchange rates, which 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, which 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 the United States and 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, which 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 United States, including the U.S. Foreign Corrupt Practices Act (FCPA) (and foreign equivalents), export controls and regulations administered by the Office of Foreign Assets Control; and
- evolving laws and regulations over chemicals and chemical production and transportation for the U.S. Toxic Substances Control Act (TSCA), the EU Registration, Evaluation, Authorization and Restriction of Chemical Substances Act (REACH) 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 United Sates, 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 United States 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.

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 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 United States, these laws and regulations include, but are not limited to TSCA, the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), the Clean Air Act, the Clean Water Act, the Resource Conservation and Recovery Act (RCRA), the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and state and local laws, such as California's Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65). Analogous laws outside the United States apply to us in many jurisdictions, including, among others, the European Union's 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.

The REACH regulation was fully implemented in 2018, and any new substances introduced to the EU market in the future must be registered. The costs associated with these registrations could be substantial. Moreover, if a registration 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, the European Chemical Agency is evaluating existing chemical registrations and may require additional testing and data collection. Chemicals may be assessed and removed from EU commerce entirely, potentially requiring the Company 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 costs or revenues. Regulators in other countries are also implementing chemical registration regulations similar to REACH. Furthermore, 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, TSCA now mandate that the U.S. Environmental Protection Agency (USEPA) 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 RCRA, the Clean Water Act, the Clean Air Act, and CERCLA, as well as analogous foreign laws. 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 current significant environmental proceedings related to certain environmental sites. In the event that new contamination is discovered, the Company may become subject to additional obligations. The costs and liabilities associated with these issues may have a material adverse effect on the Company's business, financial position, results of operations and cash flows.

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 United States. 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 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, 2018, the Company had $276.1 million of debt on its balance sheet. U.S. debt included $268.3 million in unsecured promissory notes with maturities extending from 2019 until 2027. In addition, on December 31, 2018 the Company was party to a $350 million credit 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, 2018, the Company's foreign subsidiaries' aggregate outstanding debt totaled $7.8 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 that, 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 Company's ability 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. During economic downturns, these users may reduce their volume of purchases of such end products or may purchase alternative products, which would reduce demand for the Company's products. Reduced demand from the primary end markets for the Company's products, such as the consumer products industry, could adversely affect the Company. 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 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, confidential business information of our employees, customers, suppliers or other third parties, 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, supplier, third party, employee 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, supplier, third party, employee or Company data, but any such occurrences could result in costs that 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, 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 members of executive management 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, New Jersey	45 acres	Surfactants
3.	Anaheim	Anaheim, California	8 acres	Surfactants
4.	Winder	Winder, Georgia	202 acres	Surfactants
5.	Maywood	Maywood, New Jersey	19 acres	Surfactants / 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, Mexico	13 acres	Surfactants
10.	Stepan Ecatepec	Ecatepec, Mexico	34 acres	Surfactants
11.	Stepan Germany	Wesseling, Germany	12 acres	Polymers
12.	Stepan UK	Stalybridge, United Kingdom	11 acres	Surfactants
13.	Stepan Colombia	Manizales, Colombia	5 acres	Surfactants
14.	Stepan China	Nanjing, China (Nanjing Chemical Industrial Park)	13 acres (right of use arrangement)	Polymers
15.	Stepan Brazil	Vespasiano, Minas Gerais, Brazil	27 acres	Surfactants
16.	Tebras Tensoativos Do Brasil Ltda. and PBC Industria Quimica Ltda.	Salto, Sao Paulo, Brazil	14 acres	Surfactants
17.	Stepan Philippines	Bauan, Batangas, Philippines	9 acres (leased)	Surfactants
18.	Stepan Poland	Brzeg Dolny, Poland	4 acres (perpetual use right)	Polymers
19.	Stepan Asia	Jurong Island, Singapore	8 acres (leased)	Surfactants
20.	Company Headquarters and Central Research Laboratories	Northfield, Illinois	8 acres	N/A
21.	Company Corporate Supply Chain, Human Resources, Legal and Finance Functions	Northbrook, 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 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 is likely to 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 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 is reasonable having considered the range of estimated cost of remediation for the Maywood site. The 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 is reasonable having considered the range of estimated 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 $2.6 million for the Company's portion of environmental response costs through December 31, 2018. 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 prefiling notice from USEPA for alleged violations of 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 under the symbol SCL.

On January 31, 2019, there were 1,698 holders of record of the Company's common stock.

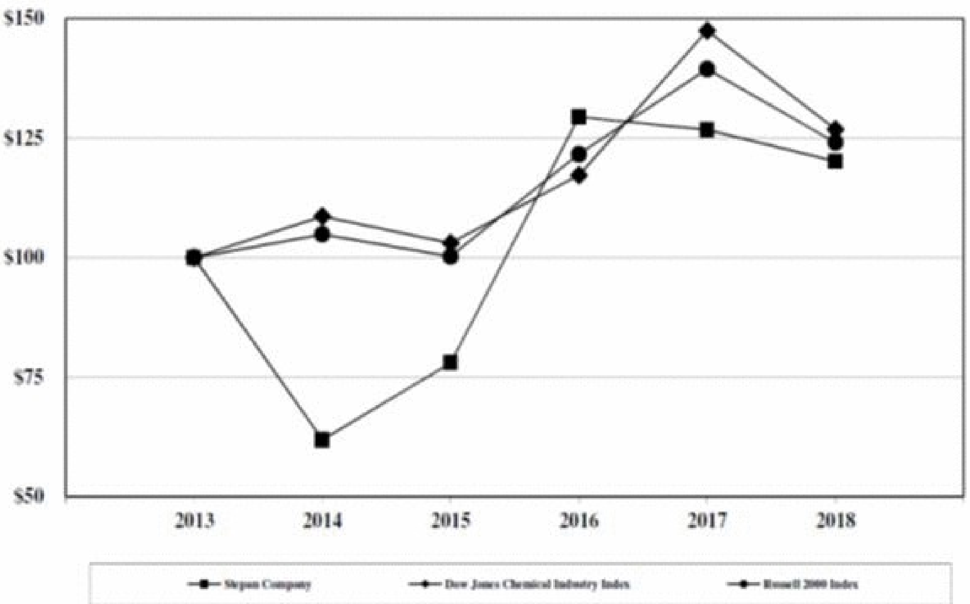
(b) Below is a summary by month of shares purchases by the Company during the fourth quarter of 2018:

Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs (1)	Maximum Number of Shares that May Yet Be Purchased Under the Plans or Programs
October	1,426 (2)	$ 84.37	—	—
November	3,783 (3)	$ 80.72	2,100 (4)	518,175
December	23,888 (4)	$ 76.70	23,888 (4)	494,287
Total	29,097	$ 77.60	25,988	494,287

(1) 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.
(2) Represents shares tendered by employees to settle statutory withholding taxes related to the distribution of performance stock awards.
(3) Includes 1,683 shares of Company common stock tendered by employees to settle statutory withholding taxes related to the exercise of SARs.
(4) Represents shares of Company common stock purchased on the open market.

(c) Stock Performance Graph

The following stock performance graph compares the yearly change since December 31, 2013, 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, 2013, and shows the cumulative total return as of each December 31 thereafter.



	Cumulative Value at December 31*					
	2013	2014	2015	2016	2017	2018
Stepan Company	$100.00	$61.92	$77.97	$129.43	$126.74	$120.14
Dow Jones Chemical Industry Index	$100.00	$108.64	$103.04	$117.23	$147.48	$126.85
Russell 2000 Index	$100.00	$104.89	$100.26	$121.63	$139.44	$124.09

* Assumes $100.00 invested on December 31, 2013, in Stepan Company Stock, Dow Jones Chemical Industry Index and Russell 2000 Index.

Item 6. Selected Financial Data

(In thousands, except per share data)

For the Year	***2018***	*2017*	*2016*	*2015*	*2014*
Net Sales	**$ 1,993,857**	$ 1,925,007	$ 1,766,166	$ 1,776,167	$ 1,927,213
Operating Income (a)	**151,419**	147,195	127,830	124,918	90,931
Percent of Net Sales	**7.6%**	7.6%	7.2%	7.0%	4.7%
Income Before Provision for Income Taxes	**139,923**	139,237	113,816	102,856	75,535
Percent of Net Sales	**7.0%**	7.2%	6.4%	5.8%	3.9%
Provision for Income Taxes	**27,173**	47,690	27,618	26,819	18,454
Net Income Attributable to Stepan Company	**112,762**	91,578	86,191	75,968	57,101
Per Diluted Share	**4.83**	3.92	3.73	3.32	2.49
Percent of Net Sales	**5.7%**	4.8%	4.9%	4.3%	3.0%
Percent to Total Stepan Company Stockholders' Equity (b)	**14.8%**	13.3%	14.5%	13.9%	10.5%
Cash Dividends Paid	**20,857**	18,907	17,329	16,300	15,387
Per Common Share	**0.9300**	0.8600	0.7800	0.7300	0.6900
Depreciation and Amortization	**81,115**	79,022	74,967	66,985	63,804
Capital Expenditures	**86,647**	78,613	103,076	119,349	101,819
Weighted-average Common Shares Outstanding (Diluted)	**23,325**	23,377	23,094	22,858	22,917
As of Year End					
Working Capital	**$ 463,948**	$ 468,483	$ 388,276	$ 376,329	$ 326,043
Current Ratio	**2.4**	2.5	2.3	2.5	2.3
Property, Plant and Equipment, Net	**608,892**	598,443	582,714	555,463	524,195
Total Assets	**1,484,666**	1,470,861	1,353,890	1,239,661	1,162,014
Long-term Debt Obligations, Less Current Maturities	**239,022**	268,299	288,859	313,817	246,897
Total Stepan Company Stockholders' Equity	**783,766**	740,096	634,604	556,984	535,546

(a) The 2017, 2016, 2015 and 2014 amounts for the noted line item have been immaterially changed from the amounts originally reported as a result of the Company's first quarter 2018 adoption of Accounting Standards Update (ASU) No. 2017-7, *Compensation –Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost.*

(b) 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 70 percent of the Company's consolidated net sales in 2018, 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, two European sites (United Kingdom and France – Germany ceased Surfactant production in the fourth quarter of 2018), five Latin American sites (Colombia and two sites in each of Mexico and Brazil) and two Asian sites (Philippines and Singapore). Recent significant Surfactants events include:
  - In March 2018, the Company, through a subsidiary in Mexico, acquired a production facility and a portion of its related surfactant business from BASF Mexicana, S.A. DE C.V. (BASF) (see Note 20, Acquisitions, for additional details).
  - During the third quarter of 2018, the Company approved a plan to shut down Surfactants operations at its plant site in Germany (see Note 22, Business Restructuring and Asset Impairments, for additional details).
  - During the fourth quarter of 2017, the Company approved a plan to restructure a portion of its Fieldsboro, New Jersey production facility (see Note 22, Business Restructuring and Asset Impairments, for additional details).
  - 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 2018 (see Note 22, Business Restructuring and Asset Impairments, for additional details).
- Polymers – Polymers, which accounted for 26 percent of consolidated net sales in 2018, 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 2018, 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.

2018 Acquisition

On March 26, 2018, the Company, through a subsidiary in Mexico, acquired BASF 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 supports the Company's growth strategy in Latin America. The Company believes that this acquisition should enhance its market position and supply capabilities for surfactants in Mexico and position the Company to grow in both the consumer and functional surfactants markets. See Note 20, *Acquisitions,* for additional details.

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:

	Income (Expense) For the Year Ended December 31			
(In millions)	2018	2017	Change	
Deferred Compensation (Operating expenses)	$ 2.3	$ (4.8)	$ 7.1	(1)
Investment Income (Other, net)	1.5	0.9	0.6	
Realized/Unrealized Gains (Losses) on Investments (Other, net)	(2.7)	4.0	(6.7)	
Pretax Income Effect	$ 1.1	$ 0.1	$ 1.0	

	Income (Expense) For the Year Ended December 31			
(In millions)	2017	2016	Change	
Deferred Compensation (Operating expenses)	$ (4.8)	$ (16.8)	$ 12.0	(1)
Investment Income (Other, net)	0.9	0.6	0.3	
Realized/Unrealized Gains on Investments (Other, net)	4.0	0.1	3.9	
Pretax Income Effect	$ 0.1	$ (16.1)	$ 16.2	

(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			
	2018	2017	2016	2015
Company Stock Price	$ 74.00	$ 78.97	$ 81.48	$ 49.69

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 2018 compared to 2017 and 2017 compared to 2016:

(In millions)	For the Year Ended December 31 2018	For the Year Ended December 31 2017	Increase	Increase (Decrease) Due to Foreign Currency Translation
Net Sales	$ 1,993.9	$ 1,925.0	$ 68.9	$ 0.1
Gross Profit	341.5	338.5	3.0	(0.7)
Operating Income	151.4	147.2	4.2	(0.6)
Pretax Income	139.9	139.2	0.7	(0.5)

(In millions)	For the Year Ended December 31 2017	For the Year Ended December 31 2016	Increase (Decrease)	Increase Due to Foreign Currency Translation
Net Sales	$ 1,925.0	$ 1,766.2	158.8	$ 9.9
Gross Profit	338.5	339.0	(0.5)	2.6
Operating Income	147.2	127.8	19.4	1.7
Pretax Income	139.2	113.8	25.4	1.6

(1) The 2017 and 2016 gross profit and operating income line items have been immaterially changed from the amounts originally reported as a result of the Company's first quarter 2018 adoption of ASU No. 2017-07, *Compensation-Retirement Benefits (Topic 715).*

Results of Operations

2018 Compared with 2017

<u>Summary</u>

Net income attributable to the Company for 2018 increased 23 percent to $112.8 million, or $4.83 per diluted share, from $91.6 million, or $3.92 per diluted share, for 2017. Adjusted net income increased five percent to $113.8 million, or $4.88 per diluted share, from $108.7 million, or $4.65 per diluted share in 2017 (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 2018 compared to 2017 follows the summary.

Consolidated net sales increased $68.9 million, or four percent, between years. Higher sales volume, higher selling prices and the favorable impact of foreign currency translation positively impacted net sales by $64.7 million, $4.1 million and $0.1 million, respectively. Total Company sales volume increased three percent. Sales volume increased five percent and three percent for the Surfactants and Specialty Products segments, respectively. Sales volume declined three percent for the Polymers segment. Unit margins improved for Surfactants and Specialty Products and declined for Polymers.

Operating income improved $4.2 million, or 3 percent, between years. Most of this improvement was related to lower 2018 deferred compensation expense which declined by $7.1 million. Operating income improved for the Surfactant and Specialty Products segments and declined for the Polymers segment. Business restructuring expenses were $0.5 million lower in the current year and corporate expenses were up $3.4 million year-over-year. Foreign currency translation had an unfavorable $0.6 million effect on year-over-year consolidated operating income.

Operating expenses (including deferred compensation expense and business restructuring expenses) decreased $1.2 million, or one percent, between years. Changes in the individual income statement line items that comprise the Company's operating expenses were as follows:

- Selling expenses increased $2.2 million, or four percent, year over year largely due to higher salaries and cloud-based application expense. A portion of the higher salaries is attributable to the 2018 acquisition in Mexico.
- Administrative expenses increased $3.6 million, or five percent, year over year. The increase was primarily due to higher employee separation costs and salaries.
- Research, development and technical service (R&D) expenses increased $0.6 million, or one percent, year over year.
- Deferred compensation was income of $2.3 million in 2018 versus expense of $4.9 million in 2017. See the "Overview" and "Segment Results - Corporate Expenses" sections of this MD&A for further details.
- Business restructuring expenses were $2.6 million in 2018 versus $3.1 million in 2017. Current year restructuring charges are comprised of asset and spare part write-downs related to the Company's decision to cease Surfactant operations in Germany ($1.4 million) and decommissioning costs associated with the Company's manufacturing facility in Canada, which ceased operations in the fourth quarter of 2016 ($1.2 million). The 2017 restructuring charges related to decommissioning costs associated with the Canadian plant closure ($2.0 million), severance costs related to a partial restructuring of the Company's production facility in Fieldsboro, New Jersey ($0.9 million) and workforce reduction expense at the Company's Singapore plant. These business restructuring charges were excluded from the determination of segment operating income. See Note 22 to the consolidated financial statements for additional information.

Net interest expense for 2018 declined $0.7 million, or six percent, from net interest expense for 2017. 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 $0.7 million of expense in 2018 versus $3.5 million of income in 2017. The Company recognized $1.4 million of investment losses (including realized and unrealized gains and losses) for the Company's deferred compensation and supplemental defined contribution mutual fund assets in 2018 compared to $5.1 million of gains in 2017. Partially offsetting this decrease was foreign exchange gains of $1.9 million in 2018 compared to foreign exchange losses of $0.6 million in 2017. In addition, the Company reported $1.2 million of net periodic pension cost in 2018 versus $1.0 million of net periodic pension cost in 2017.

The year-to-date effective tax rate was 19.4 percent in 2018 compared to 34.3 percent in 2017. This decrease was primarily attributable to the following items: (a) a lower U.S. statutory tax rate of 21 percent in 2018 versus a rate of 35 percent in 2017; and (b) the enactment of U.S. tax reform which resulted in a net tax cost of $14.9 million in 2017 that did not recur in 2018. The 2018 benefits were partially offset by certain unfavorable U.S. tax reform changes that became effective on January 1, 2018 (i.e., global intangible low-taxed income, non-deductible executive compensation, and the repeal of the domestic production activities deduction). In addition, during the third quarter of 2018, the Company filed applications to automatically change certain tax accounting methods related to the 2017 tax year. These method changes provided a favorable tax benefit that was partially offset by the negative tax impact recognized as a result of the Company's decision to repatriate approximately $100.0 million of foreign cash in the fourth quarter of 2018. 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) Net Sales	December 31, 2018	December 31, 2017	Increase (Decrease)	Percent Change
	For the Year Ended			
Surfactants	$ 1,385,932	$ 1,297,555	$ 88,377	7
Polymers	527,420	546,634	(19,214)	-4
Specialty Products	80,505	80,818	(313)	0
Total Net Sales	$ 1,993,857	$ 1,925,007	$ 68,850	4

(In thousands) Operating Income	December 31, 2018	December 31, 2017(1)	Increase (Decrease)	Percent Change
	For the Year Ended			
Surfactants	$ 137,506	$ 120,861	$ 16,645	14
Polymers	64,539	82,951	(18,412)	-22
Specialty Products	11,661	9,965	1,696	17
Segment Operating Income	$ 213,706	$ 213,777	$ (71)	0
Corporate Expenses, Excluding Deferred Compensation and Restructuring	62,028	58,656	3,372	6
Deferred Compensation Expense (Income)	(2,329)	4,857	(7,186)	NM
Business Restructuring and Asset Impairments	2,588	3,069	(481)	-16
Total Operating Income	$ 151,419	$ 147,195	$ 4,224	3

(1) The 2017 segment and total operating income line items have been immaterially changed from the amounts originally reported as a result of the Company's first quarter 2018 adoption of ASU No. 2017-07, *Compensation-Retirement Benefits (Topic 715).*

Surfactants

Surfactants 2018 net sales increased $88.4 million, or seven percent, over net sales reported in 2017. Higher sales volume and selling prices accounted for $69.5 million and $26.2 million, respectively, of the year-over-year increase in net sales. Sales volume increased five percent year-over-year. The unfavorable effects of foreign currency translation negatively impacted the year-over-year change in net sales by $7.3 million. A year-over-year comparison of net sales by region follows:

(In thousands)	December 31, 2018	December 31, 2017	Increase (Decrease)	Percent Change
	For the Year Ended			
North America	$ 831,592	$ 763,044	$ 68,548	9
Europe	276,742	275,121	1,621	1
Latin America	212,824	190,802	22,022	12
Asia	64,774	68,588	(3,814)	-6
Total Surfactants Segment	$ 1,385,932	$ 1,297,555	$ 88,377	7

Net sales for North American operations increased nine percent between years. Sales volume increased six percent which favorably impacted the change in net sales by $42.0 million. The sales volume growth was largely driven by higher sales volume of products used in personal care and oilfield applications. Sales volume of general surfactants to our distribution partners also increased. Average selling prices increased three percent between years and positively impacted the year-over-year change in net sales by $26.4 million. The increase in selling prices was largely due to a more favorable mix of sales. Foreign currency translation positively impacted the change in net sales by $0.1 million. The foreign currency impact reflected a weaker U.S. dollar relative to the Canadian dollar.

Net sales for European operations increased one percent versus prior year. The favorable effects of foreign currency translation positively impacted the year-over-year change in net sales by $11.8 million. A weaker U.S. dollar relative to the European euro and British pound sterling led to the foreign currency effect. Lower selling prices of four percent unfavorably impacted the year-over-year change in net sales by $10.5 million. Sales volume was flat versus the prior year. Net sales in 2017 were positively impacted by $4.7 million related to a favorable resolution of a prior year customer claim (see Note 23 to the consolidated financial statements for further information).

Net sales for Latin American operations increased $22.0 million, or 12 percent, primarily due a 12 percent increase in sales volume and higher selling prices. These two items accounted for $22.5 million and $16.1 million, respectively, of the year-over-year change in net sales. The higher volume is mostly related to the Company's first quarter acquisition in Ecatepec, Mexico and partially offset by lower demand and lost commodity business in Brazil. The higher selling prices primarily reflect the pass through to customers of increased raw material costs. Foreign currency translation negatively impacted the year-over-year change in net sales by $16.6 million. The foreign currency translation primarily reflects the year-over-year weakening of the Brazilian real and Mexican peso relative to the U.S. dollar.

Net sales for Asian operations declined $3.8 million, or six percent, primarily due to the negative impact of foreign currency translation and lower average selling prices. These items negatively impacted the year-over-year change in net sales by $2.5 million and $2.0 million, respectively. The foreign currency impact primarily reflected a weaker Philippine peso relative to the U.S. dollar. Sales volume increased one percent, which positively impacted the year-over year change in net sales by $0.7 million. The sales volume increase was mostly due to higher sales of general surfactants to our distribution partners.

Surfactant operating income for 2018 increased $16.6 million, or 14 percent, versus operating income reported in 2017. Gross profit increased $20.1 million, primarily due to improved results for North American operations. Operating expenses increased $3.4 million, or four percent. Year-over-year comparisons of gross profit by region and total segment operating expenses and operating income follow:

	For the Year Ended			
(In thousands)	December 31, 2018	December 31, 2017(1)	Increase (Decrease)	Percent Change
Gross Profit and Operating Income				
North America	$ 158,773	$ 132,585	$ 26,188	20
Europe	30,540	31,706	(1,166)	-4
Latin America	26,574	29,061	(2,487)	-9
Asia	17,030	19,488	(2,458)	-13
Surfactants Segment Gross Profit	$ 232,917	$ 212,840	$ 20,077	9
Operating Expenses	95,411	91,979	3,432	4
Operating Income	$ 137,506	$ 120,861	$ 16,645	14

(1) The 2017 gross profit, operating expenses and operating income line items have been immaterially changed from the amounts originally reported as a result of the Company's first quarter 2018 adoption of ASU No. 2017-07, *Compensation-Retirement Benefits (Topic 715).*

Gross profit for North American operations increased 20 percent, or $26.2 million, between years primarily due to higher unit margins and higher sales volumes. These items positively impacted the year-over-year change in gross profit by $18.9 million and $7.3 million, respectively. The higher unit margins were primarily due to a more favorable customer and product mix. Higher year-over-year sales of products used in personal care, agricultural and oilfield applications, along with products sold to our distribution partners contributed to the 2018 volume growth.

Gross profit for European operations decreased four percent between years principally due to the aforementioned non-recurring $4.7 million favorable customer claim resolution in 2017. Lower unit margins, principally due to the non-recurrence of the prior year favorable customer claim resolution, negatively impacted the year-over-year change in gross profit by $2.5 million. Foreign currency translation positively affected the change in gross profit by $1.3 million. Sales volume was flat year-over-year.

Gross profit for Latin American operations decreased $2.5 million, or nine percent, year-over-year primarily due to lower unit margins and the negative impact of foreign currency translation. These items unfavorably impacted the change in year-over-year gross profit by $3.1 million and $2.8 million, respectively. The lower unit margins principally related to higher integration and start-up costs associated with the Company's first quarter 2018 acquisition in Ecatepec, Mexico. Sales volume growth of 12 percent positively impacted current year gross profit by $3.4 million. This growth primarily reflects the Company's first quarter acquisition in Mexico partially offset by lower demand and lost commodity business in Brazil. The Ecatepec, Mexico acquisition was slightly accretive to Latin America gross profit in 2018.

Asia gross profit decreased 13 percent largely due to lower unit margins and the unfavorable impact of foreign currency translation. These item unfavorably impacted the year-over-year change in gross profit by $2.3 million and $0.4 million, respectively. Sales volume growth of one percent positively impacted the year-over-year change in gross profit by $0.2 million.

Operating expenses for the Surfactants segment increased $3.4 million, or four percent, year-over-year. Most of this increase was attributable to higher North American expenses. The higher North American expenses were primarily due to higher consulting fees, salaries, and cloud-based application expense.

Polymers

Polymer net sales for 2018 decreased $19.2 million, or four percent, over net sales for 2017. Lower sales volumes and selling prices negatively impacted the year-over-year change in net sales by $16.9 million and $9.0 million, respectively. The favorable effects of foreign currency translation positively impacted the year-over-year change in net sales by $6.7 million. The foreign currency effect reflected a weaker U.S. dollar relative to the Polish zloty. A year-over-year comparison of net sales by region follows:

	For the Year Ended			
(In thousands)	December 31, 2018	December 31, 2017	Increase (Decrease)	Percent Change
North America	$ 323,360	$ 329,629	$ (6,269)	-2
Europe	172,632	188,244	(15,612)	-8
Asia and Other	31,428	28,761	2,667	9
Total Polymers Segment	$ 527,420	$ 546,634	$ (19,214)	-4

Net sales for North American operations declined two percent due to a sales volume decline of two percent and slightly lower selling prices. These items negatively impacted the year-over-year change in net sales by $5.5 million and $0.8 million, respectively. Sales volume of phthalic anhydride and polyols used in rigid foam applications declined three and one percent, respectively. Sales volume of polyols used in rigid foam applications increased six percent in the second half of 2018 due to recaptured market share. Sales volume of specialty polyols was flat with the prior year.

Net sales for European operations decreased eight percent primarily due to a seven percent decline in sales volume and lower selling prices which negatively impacted the year-over-year change in net sales by $12.8 million and $9.5 million, respectively. The lower volume was principally due to customer inventory builds prior to the end of 2017, the carryover effect of the 2017 MDI shortage and extended winter weather which delayed the start of construction projects. The effects of foreign currency translation positively impacted the year-over-year change in net sales by $6.7 million.

Net sales for Asia and Other operations increased nine percent between years due a six percent increase in sales volume, higher selling prices and the favorable effects of foreign currency translation. These items accounted for $1.6 million, $1.0 million and $0.1 million, respectively, of the year-over-year net sales increase.

Polymer operating income for 2018 declined $18.4 million, or 22 percent, compared to operating income for 2017. Gross profit decreased $18.5 million, or 17 percent, primarily due to a three percent decline in sales volumes and lower unit margins. Operating expenses were flat versus prior year. Year-over-year comparisons of gross profit by region and total segment operating expenses and operating income follow:

	For the Year Ended			
(In thousands)	December 31, 2018	December 31, 2017(1)	Increase (Decrease)	Percent Change
Gross Profit and Operating Income				
North America	$ 67,034	$ 79,582	$ (12,548)	-16
Europe	24,756	31,451	(6,695)	-21
Asia and Other	892	114	778	682
Polymers Segment Gross Profit	$ 92,682	$ 111,147	$ (18,465)	-17
Operating Expenses	28,143	28,196	(53)	0
Operating Income	$ 64,539	$ 82,951	$ (18,412)	-22

(1) The 2017 gross profit, operating expenses and operating income line items have been immaterially changed from the amounts originally reported as a result of the Company's first quarter 2018 adoption of ASU No. 2017-07, *Compensation-Retirement Benefits (Topic 715).*

Gross profit for North American operations declined 16 percent year-over-year primarily due to lower unit margins and a two percent decline in sales volume. These two items negatively impacted the year-over-year change in gross profit by $11.2 million and $1.3 million, respectively. The decline in margins primarily reflected competitive market pressures.

Gross profit for European operations declined 21 percent primarily due to lower unit sales margins and a seven percent decline in sales volume. These items negatively impacted the year-over-year change in gross profit by $5.6 million and $2.1 million, respectively. The lower margins were primarily due to higher overhead resulting from lower production throughput in 2018 versus 2017. The favorable impact of foreign currency translation positively impacted the year-over-year change in gross profit by $1.0 million.

Gross profit for Asia and Other operations improved $0.8 million primarily due to higher unit margins and the favorable impact of foreign currency translation. These items positively impacted the year-over-year change in gross profit by $0.7 million and $0.1 million, respectively.

Operating expenses for the Polymers segment decreased $0.1 million year-over-year.

Specialty Products

Net sales for 2018 were flat with the prior year. Sales volume was up three percent versus the prior year. Operating income increased $1.7 million versus prior year primarily due to the higher sales volume and improved unit margins.

Corporate Expenses

Corporate expenses, which include deferred compensation and other operating expenses that are not allocated to the reportable segments, declined $4.3 million year-over-year to $62.3 million in 2018 from $66.6 million in 2017. The decline in corporate expenses was primarily attributable to lower deferred compensation expense ($7.2 million) and business restructuring expense ($0.5 million). These decreases were partially offset by higher 2018 employee separation costs and salaries.

Deferred compensation was $2.3 million of income in 2018 compared to $4.9 million of expense in 2017. The favorable year-over-year change was primarily due to less mutual fund related expense incurred in the current year combined with a steeper drop in Stepan share price in 2018 versus 2017.

	December 31			
	2018	2017	2016	2015
Company Stock Price	$ 74.00	$ 78.97	$ 81.48	$ 49.69

2017 Compared with 2016

<u>Summary</u>

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 $19.4 million, or 15 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 2016 ($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 2016 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 15 percent primarily due to lower sales volume and unit margins in North America. Foreign currency translation had a favorable $1.7 million effect on the consolidated operating income.

Operating expenses (including deferred compensation expense and business restructuring and asset impairment expenses) decreased $20.1 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 $2.8 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 $0.8 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 $2.1 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 $3.1 million in 2016. 2017 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 2016 restructuring expenses primarily related to the closure of the Company's surfactant plant in Canada ($2.8 million) and severance costs related to a partial restructuring of the Company's production facility in Fieldsboro. 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 $3.5 million for 2017 versus $0.8 million of expense in 2016. Most of the increase in income 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. Other, net also included net periodic benefit cost, which was $1.0 million expense in 2017 versus $1.6 million expense 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

(In thousands)	For the Year Ended			
Net Sales	December 31, 2017	December 31, 2016	Increase (Decrease)	Percent Change
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	$ 1,925,007	$ 1,766,166	$ 158,841	9

(In thousands)	For the Year Ended			
Operating Income	December 31, 2017	December 31, 2016	Increase (Decrease)	Percent Change
Surfactants	$ 120,861	$ 101,092	$ 19,769	20
Polymers	82,951	97,102	(14,151)	-15
Specialty Products	9,965	10,725	(760)	-7
Segment Operating Income	$ 213,777	$ 208,919	$ 4,858	2
Corporate Expenses, Excluding Deferred Compensation and Restructuring	58,656	57,220	1,436	3
Deferred Compensation Expense (Income)	4,857	16,805	(11,948)	-71
Business Restructuring and Asset Impairments	3,069	7,064	(3,995)	-57
Total Operating Income	$ 147,195	$ 127,830	$ 19,365	15

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:

	For the Year Ended			
(In thousands)	December 31, 2017	December 31, 2016	Increase	Percent Change
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
Total Surfactants Segment	$ 1,297,555	$ 1,181,563	$ 115,992	10

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 $19.8 million, or 20 percent, from operating income reported in 2016. The operating income increase was due to higher 2017 gross profit of $16.0 million and lower operating expenses of $3.7 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 $3.7 million, or four percent. Year-over-year comparisons of gross profit by region and total segment operating expenses and operating income follow:

	For the Year Ended			
(In thousands)	December 31, 2017	December 31, 2016 (a)	Increase (Decrease)	Percent Change
Gross Profit and Operating Income				
North America	$ 132,585	$ 124,431	$ 8,154	7
Europe	31,706	23,246	8,460	36
Latin America	29,061	28,374	687	2
Asia	19,488	20,502	(1,014)	-5
Surfactants Segment Gross Profit	$ 212,840	$ 196,553	$ 16,287	8
Operating Expenses	91,979	95,949	(3,970)	-4
Operating Income	$ 120,861	$ 100,604	$ 20,257	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 before 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 $3.7 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:

	For the Year Ended			
(In thousands)	December 31, 2017	December 31, 2016	Increase	Percent Change
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 $14.2 million, or 15 percent, compared to operating income for 2016. Gross profit decreased $15.0 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 $0.8 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:

	For the Year Ended			
(In thousands)	December 31, 2017	December 31, 2016 (a)	Increase (Decrease)	Percent Change
Gross Profit and Operating Income				
North America	$ 79,582	$ 96,665	$ (17,083)	-18
Europe	31,451	27,702	3,749	14
Asia and Other	114	1,737	(1,623)	-93
Polymers Segment Gross Profit	$ 111,147	$ 126,104	$ (14,957)	-12
Operating Expenses	28,196	29,002	(806)	-3
Operating Income	$ 82,951	$ 97,102	$ (14,151)	-15

(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 before 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 $0.8 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 $0.8 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
Company Stock Price	$ 78.97	$ 81.48	$ 49.69

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, 2018, operating activities were a cash source of $171.1 million versus a source of $198.9 million for the comparable period in 2017. For the current year, investing cash outflows totaled $107.8 million, as compared to an outflow of $82.7 million in the prior year period, and financing activities were a use of $51.6 million, as compared to a use of $50.5 million in the prior year period. Cash and cash equivalents increased by $1.3 million compared to December 31, 2017, including an unfavorable exchange rate impact of $10.4 million.

As of December 31, 2018, the Company's cash and cash equivalents totaled $300.2 million. Cash in U.S. demand deposit accounts and money market funds totaled $61.0 million and $141.6 million, respectively. The Company's non-U.S. subsidiaries held $97.6 million of cash outside the United States as of December 31, 2018.

Operating Activity

Net income in 2018 increased by $21.2 million versus the comparable period in 2017. Working capital was a cash use of $39.2 million in 2018 versus a source of $19.3 million in 2017.

Accounts receivable were a source of $5.2 million in 2018 compared to a use of $16.4 million in 2017. Inventories were a use of $26.8 million in 2018 versus a source of $5.7 million in 2017. Accounts payable and accrued liabilities were a use of $19.0 million in 2018 compared to a source of $30.5 million for the same period in 2017.

Working capital requirements were higher in 2018 compared to 2017 primarily due to the changes noted above. The change in inventories was primarily due to higher quantities, a portion which related to the Company's first quarter acquisition in Ecatepec, Mexico. The change in accrued liabilities was primarily related to lower U.S. tax liabilities in 2018 versus 2017. It is management's opinion that the Company's liquidity is sufficient to provide for potential increases in working capital requirements during 2019.

Investing Activity

Cash used for investing activities increased $25.1 million year-over-year. Cash outflows from investing activities included capital expenditures of $86.6 million compared to $78.6 million in 2017. Other investing activities were a use of $21.2 million in 2018 versus a use of $4.1 million in 2017. The increase in other investing activities was primarily attributable to a use of $22.9 million cash related to the acquisition of a surfactant production facility in Ecatepec, Mexico and a portion of their related surfactant business during the first quarter of 2018.

For 2019, the Company estimates that total capital expenditures will range from $120 million to $140 million including infrastructure and optimization spending in the United States, Mexico and Brazil.

Financing Activity

Cash flow from financing activities was a use of $51.6 million in 2018 versus a use of $50.5 million in 2017.

The Company purchases shares of 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 its 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 plans meeting the requirements of Rule 10b5-1 promulgated by the SEC. 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, 2018, the Company purchased 205,983 shares at a total cost of $15.5 million. At December 31, 2018, there were 494,287 shares remaining under the current share repurchase authorization.

Debt and Credit Facilities

Consolidated balance sheet debt decreased by $14.7 million for 2018, from $290.8 million to $276.1 million, primarily due to lower domestic debt. In 2018, 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 $16.0 million, from a negative $8.1 million to a negative $24.1 million.

As of December 31, 2018, the ratio of total debt to total debt plus shareholders' equity was 26.0 percent compared to 28.2 percent at December 31, 2017. As of December 31, 2018, the ratio of net debt to net debt plus shareholders' equity was negative 3.2 percent, compared to negative 1.1 percent at December 31, 2017. At December 31, 2018, the Company's debt included $268.3 million of unsecured private placement loans with maturities ranging from 2019 through 2027 which were issued to insurance companies pursuant to note purchase agreements (the Note Purchase Agreements). These notes 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 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. Loans under the credit agreement may be incurred, at the discretion of the Company, with terms to maturity of one to six months. The Company may choose from two interest rate options: (1) LIBOR applicable to each currency plus spreads ranging from 1.25 percent to 1.875 percent, depending on the Company's net leverage ratio, or (2) the prime rate plus 0.25 percent to 0.875 percent, depending on the Company's net leverage ratio. The credit agreement requires the Company to pay a commitment fee ranging from 0.15 percent to 0.325 percent per annum, which also depends on the Company's net leverage ratio.

The Company's outstanding Note Purchase Agreements were amended effective January 30, 2018 to make certain covenants consistent with those included in the credit agreement. As of December 31, 2018, the Company had outstanding letters of credit totaling $4.7 million under the revolving credit agreement and no borrowings. There was $345.3 million remaining available under the revolving credit agreement as of December 31, 2018.

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 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, 2018, the Company's foreign subsidiaries had outstanding debt of $7.8 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, 2018, testing for these agreements was based on the Company's consolidated financial statements. Under the most restrictive of these debt covenants:

1. The Company is required to maintain a minimum interest coverage ratio, as defined within the agreements, not to exceed 3.50 to 1.00, for the preceding four calendar quarters.
2. The Company is required to maintain a maximum net leverage ratio, as defined within the agreements, not to exceed 3.50 to 1.00.
3. The Company is required to maintain net worth of at least $325.0 million.

4. The Company is permitted to pay dividends and purchase treasury shares after December 31, 2017, in amounts of up to $100.0 million plus 100 percent of net income and cash proceeds of stock option exercises, measured cumulatively December 31, 2017. The maximum amount of dividends that could have been paid within this limitation is disclosed as unrestricted retained earnings in Note 6 to the consolidated financial statements.

The Company believes it was in compliance with all of its loan agreements as of December 31, 2018.

Contractual Obligations

At December 31, 2018, the Company's contractual obligations, including estimated payments by period, were as follows:

	Payments Due by Period				
(In thousands)	Total	Less than 1 year	1-3 years	3 – 5 years	More than 5 years
Long-term debt obligations (a)	$ 277,058	$ 37,058	$ 72,858	$ 81,430	$ 85,712
Interest payments on debt obligations (b)	46,668	10,966	17,917	11,039	6,746
Operating lease obligations	49,997	9,740	14,321	9,343	16,593
Purchase obligations (c)	5,489	3,966	1,523	—	—
Other (d)	31,247	8,447	2,620	2,550	17,630
Total	$ 410,459	$ 70,177	$ 109,239	$ 104,362	$ 126,681

(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, 2018. 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, 2018. 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 2019 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 $86.9 million of other non-current liabilities recorded on the balance sheet at December 31, 2018, 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 underfunded status (pretax) of the Company's defined benefit pension plans was $23.8 million at December 31, 2018 versus $23.3 million at December 31, 2017. See Note 13, Postretirement Benefit Plans, to the consolidated financial statements for additional details.

The Company contributed $5.8 million to its defined benefit plans in 2018. In 2019, 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 2019 contribution requirement to the U.S. pension plans. Payments to participants in the unfunded non-qualified plans should approximate $0.3 million in 2019, which is the same as payments made in 2018.

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, 2018, 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 2018, the Company's expenditures for capital projects related to the environment were $5.4 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 $28.3 million for 2018, $28.2 million for 2017 and $25.0 million for 2016.

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 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 is likely to 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 $23.4 million to $44.7 million at December 31, 2018, compared to $24.2 million to $45.4 million at December 31, 2017. Within the range of possible environmental losses, currently management has concluded that there are no amounts within the ranges that are more likely to occur than any other amounts in the ranges and, thus, has accrued at the lower end of the ranges; that accrual totaled $23.4 million at December 31, 2018 as compared to $24.2 million at December 31, 2017. Because the liabilities accrued are estimates, actual amounts could differ from the amounts reported. During 2018, cash outlays related to legal and environmental matters approximated $1.6 million compared to $2.0 million expended in 2017.

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. 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, management believes that the Company has no liability at these sites and 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 each of the past three years, management believes that its Surfactants segment will continue to benefit from diversification efforts into functional products, new technologies, improved internal efficiencies and expanded sales into its broad customer base globally. Management believes that its Polymer segment will benefit from the growing market for insulation materials and will deliver both full year volume growth and incremental margin improvement versus 2018. Management believes that its Specialty Products segment will improve year over year.

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, 2018 and December 31, 2017, the Company's deferred compensation liability was $50.5 million and $58.9 million, respectively. In 2018 and 2017, approximately 53 percent and 55 percent, respectively, of deferred compensation 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 cost estimates.

Revenue Recognition

On January 1, 2018, the Company adopted ASU No. 2014-09, *Revenue from Contracts with Customers (Topic 606).* This ASU outlines a single comprehensive model for entities to use in accounting for revenue arising from contracts with customers. The Company's contracts typically have a single performance obligation that is satisfied at the time product is shipped and control passes to the customer as compared to the "risk and rewards" criteria used in prior years. For a small portion of the business, performance obligations are deemed satisfied when product is delivered to a customer location. For arrangements where the Company consigns product to a customer location, revenue is recognized when the customer uses the inventory. The Company accounts for shipping and handling as activities to fulfill a promise to transfer a good. As such, shipping and handling fees billed to customers in a sales transaction are recorded in Net Sales and shipping and handling costs incurred 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. See Note 21 to the consolidated financial statements for more details.

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					
	2018		2017		2016	
	Net Income	Diluted EPS	Net Income	Diluted EPS	Net Income	Diluted EPS
Net Income Attributable to the Company as Reported	**$ 112.8**	**$ 4.83**	**$ 91.6**	**$ 3.92**	**$ 86.2**	**$ 3.73**
Deferred Compensation (Income) Expense	(1.1)	(0.04)	(0.1)	—	16.1	0.70
Business Restructuring and Asset Impairments	2.6	0.11	3.1	0.13	7.1	0.30
Contract Termination Settlement	—	—	—	—	(4.3)	(0.18)
Cumulative Tax Effect on Above Adjustment Items	(0.5)	(0.02)	(0.8)	(0.04)	(6.9)	(0.30)
Tax Reform Impact	—	—	14.9	0.64	—	—
Adjusted Net Income	113.8	$ 4.88	$ 108.7	$ 4.65	$ 98.2	$ 4.25

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	
	2018	2017
Current Maturities of Long-Term Debt as Reported	$ 37.1	$ 22.5
Long-Term Debt as Reported	$ 239.0	$ 268.3
Total Debt as Reported	$ 276.1	$ 290.8
Less Cash and Cash Equivalents as Reported	$ (300.2)	$ (298.9)
Net Debt	$ (24.1)	$ (8.1)

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, 2018, the Company had forward contracts with an aggregated notional amount of $28.9 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, 2018, was a net asset of $0.2 million. As of December 31, 2018, 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 $2.7 million.

Interest Rates

The Company's debt was made up of fixed-rate and variable-rate borrowings totaling $269.3 million and $7.8 million, respectively, as of December 31, 2018. For 2019, 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 2019.

The fair value of the Company's long term fixed-rate debt, including current maturities, was estimated to be $266.3 million as of December 31, 2018, which was approximately $3.0 million below 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, 2018, or $4.4 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, 2018, the Company had open forward contracts for the purchase of 0.9 million dekatherms of natural gas at a cost of $2.4 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 $0.2 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:

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, 2018 and 2017, the related consolidated statements of income, comprehensive income, equity, and cash flows for each of the three years in the period ended December 31, 2018, 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, 2018 and 2017, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2018, 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, 2018, 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, 2019, 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

Chicago, Illinois
February 27, 2019

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

Stepan Company
Consolidated Statements of Income
For the years ended December 31, 2018, 2017 and 2016

(In thousands, except per share amounts)	**2018**	2017	2016
Net Sales (Note 1)	**$ 1,993,857**	$ 1,925,007	$ 1,766,166
Cost of Sales (a)	**1,652,354**	1,586,485	1,426,897
Gross Profit (a)	**341,503**	338,522	339,269
Operating Expenses:			
Selling (Note 1) (a)	**56,319**	54,090	56,922
Administrative (Note 1) (a)	**79,243**	75,615	74,872
Research, development and technical services (Note 1) (a)	**54,263**	53,696	55,776
Deferred compensation expense (income)	**(2,329)**	4,857	16,805
	187,496	188,258	204,375
Business restructuring and asset impairments (Note 22)	**(2,588)**	(3,069)	(7,064)
Operating Income (a)	**151,419**	147,195	127,830
Other Income (Expense):			
Interest, net (Note 6)	**(10,771)**	(11,444)	(13,205)
Other, net (Note 8) (a)	**(725)**	3,486	(809)
	(11,496)	(7,958)	(14,014)
Income Before Provision for Income Taxes	**139,923**	139,237	113,816
Provision for Income Taxes (Note 9)	**27,173**	47,690	27,618
Net Income	**112,750**	91,547	86,198
Net (Income) Loss Attributable to Noncontrolling Interests (Note 1)	**12**	31	(7)
Net Income Attributable to Stepan Company	**$ 112,762**	$ 91,578	$ 86,191
Net Income Per Common Share Attributable to Stepan Company (Note 18):			
Basic	**$ 4.90**	$ 3.99	$ 3.78
Diluted	**$ 4.83**	$ 3.92	$ 3.73
Shares Used to Compute Net Income Per Common Share Attributable to Stepan Company (Note 18):			
Basic	**23,022**	22,946	22,793
Diluted	**23,325**	23,377	23,094

(a) The 2017 and 2016 amounts for the noted line items have been immaterially changed from the amounts originally reported as a result of the Company's first quarter 2018 adoption of ASU No. 2017-7, *Compensation –Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost*.

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, 2018, 2017 and 2016

(In thousands)	**2018**	2017	2016
Net Income	**$ 112,750**	$ 91,547	$ 86,198
Other Comprehensive Income (Loss):			
Foreign currency translation adjustments (Note 19)	**(37,966)**	26,293	(8,533)
Defined benefit pension plans:			
Net actuarial gain (loss) arising in period (net of taxes of $2,300, $771 and $3,391 for 2018, 2017 and 2016, respectively)	**(7,080)**	(582)	3,818
Amortization of prior service cost included in pension expense (net of taxes of $3, $4 and $4 for 2018, 2017 and 2016, respectively)	**10**	10	10
Amortization of actuarial loss included in pension expense (net of taxes of $979, $1,240 and $1,301 for 2018, 2017 and 2016, respectively)	**3,080**	2,269	2,207
Net defined benefit pension plan activity (Note 19)	**(3,990)**	1,697	6,035
Cash flow hedges:			
Losses arising in period (net of taxes of $0, $0 and $9 in 2018, 2017 and 2016, respectively)	**—**	—	(19)
Reclassifications to income in period (net of taxes of $0, $0 and $28 in 2018, 2017 and 2016, respectively)	**(10)**	(9)	45
Net cash flow hedge activity (Note 19)	**(10)**	(9)	26
Other Comprehensive Income (Loss)	**(41,966)**	27,981	(2,472)
Comprehensive Income	**70,784**	119,528	83,726
Comprehensive (Income) Loss Attributable to Noncontrolling Interests	**58**	(48)	88
Comprehensive Income Attributable to Stepan Company	**$ 70,842**	$ 119,480	$ 83,814

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

Stepan Company
Consolidated Balance Sheets
December 31, 2018 and 2017

(Dollars in thousands)		***2018***		*2017*
Assets				
Current Assets:				
Cash and cash equivalents	**$**	**300,194**	$	298,894
Receivables, less allowances of $9,654 in 2018 and $10,116 in 2017		**280,025**		293,541
Inventories (Note 5)		**200,165**		172,748
Other current assets		**22,146**		23,553
Total current assets		**802,530**		788,736
Property, Plant and Equipment:				
Land		**26,341**		17,136
Buildings and improvements		**212,072**		203,879
Machinery and equipment		**1,365,509**		1,324,415
Construction in progress		**62,868**		57,856
		1,666,790		1,603,286
Less: accumulated depreciation		**(1,057,898)**		(1,004,843)
Property, plant and equipment, net		**608,892**		598,443
Goodwill, net (Note 4)		**22,954**		25,118
Other intangible assets, net (Note 4)		**14,244**		18,538
Long-term investments (Note 2)		**25,082**		28,270
Other non-current assets		**10,964**		11,756
Total Assets	**$**	**1,484,666**	$	1,470,861
Liabilities and Equity				
Current Liabilities:				
Current maturities of long-term debt (Note 6)	**$**	**37,058**	$	22,500
Accounts payable		**205,954**		204,977
Accrued liabilities (Note 14)		**95,570**		92,776
Total current liabilities		**338,582**		320,253
Deferred income taxes (Note 9)		**18,672**		10,962
Long-term debt, less current maturities (Note 6)		**239,022**		268,299
Other non-current liabilities (Note 15)		**103,864**		130,433
Commitments and Contingencies (Note 16)				
Equity (Note 10):				
Common stock, $1 par value; authorized 60,000,000 shares; issued 26,308,668 shares in 2018 and 26,070,787 shares in 2017		**26,309**		26,071
Additional paid-in capital		**182,881**		170,408
Accumulated other comprehensive loss (Note 19)		**(141,483)**		(99,563)
Retained earnings		**813,448**		721,741
Less: Common treasury stock, at cost, 3,803,043 shares in 2018 and 3,561,509 shares in 2017		**(97,389)**		(78,561)
Total Stepan Company stockholders' equity		**783,766**		740,096
Noncontrolling interests		**760**		818
Total equity		**784,526**		740,914
Total Liabilities and Equity	**$**	**1,484,666**	$	1,470,861

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, 2018, 2017 and 2016

(In thousands)	*2018*	*2017*	*2016*
Cash Flows From Operating Activities			
Net income	**$ 112,750**	$ 91,547	$ 86,198
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	**81,115**	79,022	74,967
Deferred compensation	**(2,329)**	4,857	16,805
Realized and unrealized gain on long-term investments	**2,966**	(4,178)	(152)
Stock-based compensation	**6,837**	7,151	12,618
Deferred income taxes	**10,864**	550	(8,426)
Other non-cash items	**4,622**	4,857	7,334
Changes in assets and liabilities, excluding effects of acquisitions:			
Receivables, net	**5,196**	(16,358)	(17,180)
Inventories	**(26,832)**	5,655	(3,774)
Other current assets	**832**	(489)	1,471
Accounts payable and accrued liabilities	**(19,023)**	30,476	38,261
Pension liabilities	**(5,065)**	(1,960)	607
Environmental and legal liabilities	**(478)**	(1,142)	4,561
Deferred revenues	**(324)**	(1,125)	(1,128)
Net Cash Provided By Operating Activities	**171,131**	198,863	212,162
Cash Flows From Investing Activities			
Expenditures for property, plant and equipment	**(86,647)**	(78,613)	(103,076)
Business acquisitions, net of cash acquired (Note 20)	**(22,852)**	(4,339)	(23,510)
Other, net	**1,684**	269	(3,935)
Net Cash Used In Investing Activities	**(107,815)**	(82,683)	(130,521)
Cash Flows From Financing Activities			
Revolving debt and bank overdrafts, net	**6,045**	(6,008)	1,292
Other debt repayments	**(20,714)**	(20,714)	(15,069)
Dividends paid	**(20,857)**	(18,907)	(17,329)
Company stock repurchased	**(15,500)**	(6,000)	(2,408)
Stock option exercises	**4,163**	3,370	4,017
Other, net	**(4,785)**	(2,238)	(275)
Net Cash Used In Financing Activities	**(51,648)**	(50,497)	(29,772)
Effect of Exchange Rate Changes on Cash	**(10,368)**	7,468	(2,269)
Net Increase in Cash and Cash Equivalents	**1,300**	73,151	49,600
Cash and Cash Equivalents at Beginning of Year	**298,894**	225,743	176,143
Cash and Cash Equivalents at End of Year	**$ 300,194**	$ 298,894	$ 225,743
Supplemental Cash Flow Information			
Cash payments of income taxes, net of refunds	**$ 32,973**	$ 25,661	$ 30,581
Cash payments of interest	**$ 12,829**	$ 13,889	$ 14,730

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

Stepan Company
Consolidated Statements of Equity
For the year ended December 31, 2016

(In thousands, except share and per share amounts)	*Total*	STEPAN COMPANY STOCKHOLDERS *Common Stock*	*Additional Paid-in Capital*	*Treasury Stock*	*Accumulated Other Comprehensive Income (Loss)*	*Retained Earnings*	*Noncontrolling Interest*
Balance, December 31, 2015	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)	—
Balance, December 31, 2016	$ 635,916	$ 25,895	$ 158,042	$ (70,938)	$ (127,465)	$ 649,070	$ 1,312

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

Stepan Company
Consolidated Statements of Equity
For the year ended December 31, 2017

(In thousands, except share and per share amounts)	*Total*	STEPAN COMPANY STOCKHOLDERS *Common Stock*	*Additional Paid-in Capital*	*Treasury Stock*	*Accumulated Other Comprehensive Income (Loss)*	*Retained Earnings*	*Noncontrolling Interest*
Balance, December 31, 2016	$ 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)
Balance, December 31, 2017	$ 740,914	$ 26,071	$ 170,408	$ (78,561)	$ (99,563)	$ 721,741	$ 818

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

Stepan Company
Consolidated Statements of Equity
For the year ended December 31, 2018

(In thousands, except share and per share amounts)	*Total*	STEPAN COMPANY STOCKHOLDERS *Common Stock*	*Additional Paid-in Capital*	*Treasury Stock*	*Accumulated Other Comprehensive Income (Loss)*	*Retained Earnings*	*Noncontrolling Interest*
Balance, December 31, 2017	$ 740,914	$ 26,071	$ 170,408	$ (78,561)	$ (99,563)	$ 721,741	$ 818
Issuance of 97,471 shares of common stock under stock option plan	4,163	97	4,066	—	—	—	—
Purchase of 205,983 shares of common stock	(15,500)	—	—	(15,500)	—	—	—
Stock-based and deferred compensation	5,220	141	8,407	(3,328)	—	—	—
Net income	112,750	—	—	—	—	112,762	(12)
Other comprehensive income	(41,966)	—	—	—	(41,920)	—	(46)
Cash dividends paid:							
Common stock ($0.93 per share)	(20,857)	—	—	—	—	(20,857)	
Other (a)	(198)	—	—	—	—	(198)	—
Balance, December 31, 2018	$ 784,526	$ 26,309	$ 182,881	$ (97,389)	$ (141,483)	$ 813,448	$ 760

(a) Includes beginning retained earnings adjustment as a result of the Company's first quarter 2018 adoption of ASU No. 2016-16, *Income Taxes (Topic 740): Intra-Entity Transfers of Assets Other Than Inventory*.

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.

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, 2018, the Company's cash and cash equivalents totaled $300.2 million including $141.6 million in money market funds, each of which was rated AAAm by Standard and Poor's, Aaa-mf by Moody's and AAAmmf by Fitch. Cash in U.S. demand deposit accounts totaled $61.0 million and cash of the Company's non-U.S. subsidiaries held outside the U.S. totaled $97.6 million.

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 2018, 2017 or 2016.

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, 2018, 2017 and 2016:

(In thousands)	**2018**	2017	2016
Balance at January 1	**$ 10,116**	$ 9,755	$ 8,046
Provision charged to income	**764**	45	1,917
Accounts written off, net of recoveries	**(1,226)**	316	(208)
Balance at December 31	**$ 9,654**	$ 10,116	$ 9,755

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, 2018 and 2017, accounted for 68 and 69 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 and a large majority of the assets included within machinery and equipment represent manufacturing equipment. Major renewals and betterments are capitalized in the property accounts, while maintenance and repairs ($57,010,000, $51,926,000, and $51,530,000 in 2018, 2017 and 2016, 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

The Company's contracts typically have a single performance obligation that is satisfied at the time product is shipped and control passes to the customer. For a small portion of the business, performance obligations are deemed satisfied when product is delivered to a customer location. For arrangements where the Company consigns product to a customer location, revenue is recognized when the customer uses the inventory. The Company accounts for shipping and handling as activities to fulfill a promise to transfer a good. As such, shipping and handling fees billed to customers in a sales transaction are recorded in Net Sales and shipping and handling costs incurred 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. See Note 21 to the consolidated financial statements for more details.

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. The majority of 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 $33,519,000, $33,169,000, and $34,856,000 in 2018, 2017 and 2016, 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 (income) 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 typically 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 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. The Company completed and made all adjustments related to the Tax Act as required by SAB 118.

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, 2018, the Company held open forward contracts for the purchase of 0.9 million dekatherms of natural gas in 2019 at a cost of $2,442,573. 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 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. On January 1, 2018, the Company adopted ASU No. 2014-9, which did not have a material effect on the Company's financial position, results of operations or cash flows. The Company has added Note 21 – Revenue from Contracts with Customers 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. The most significant impact of ASU No. 2016-2, *Leases (Topic 842)* is that a lessee will be required to recognize a "right-of-use" asset and corresponding lease liability for operating leases agreements. As allowed under the ASU, the Company will apply the new lease standard beginning on January 1, 2019 by recognizing a cumulative-effect adjustment to the opening balance of retained earnings for any difference between the amount recorded as of January 1, 2019 for the "right-of-use" assets and the corresponding lease liabilities. The Company expects this adjustment to the opening balance of retained earnings to be immaterial. The adoption of these guidelines is expected to have a material impact on specific balance sheet line items but is not expected to materially impact the Company's results of operations or cash flows. The Company expects to add approximately $42 million of "right-of-use" assets and corresponding lease liabilities to its balance sheet in the first quarter of 2019 to comply with these new accounting updates. The Company has substantially completed its collection and review of global lease contracts. The Company has also substantially completed the configuration and testing of its software solution. The Company expects to be compliant with the ASU No. 2016-2 requirements in the first quarter of 2019.

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. On January 1, 2018, the Company adopted ASU No. 2016-15, which had an immaterial impact on the cash flow presentation and did not impact the Company's financial position or results of operations.

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. The amendments in this update were applied on a modified retrospective basis through a cumulative-effect adjustment directly to retained earnings as of the beginning of the period of adoption. On January 1, 2018, the Company adopted ASU No. 2016-16, which did not have a material effect on the Company's financial position or 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 SEC 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. It is not expected that the adoption of the guidance in ASU No. 2017-4 will have a material effect on the Company's financial position, results of operations or cash flows.

In January 2017, the FASB issued ASU No. 2017-1, *Business Combination (Topic 805): Clarifying the Definition of a Business*, with the objective of adding guidance to assist with evaluating whether transactions should be accounted for as an acquisition (or disposal) of assets or a business. This update provides criteria to help determine when a set of assets and activities comprise a business as opposed to an acquisition of assets. This guidance is effective for annual periods beginning after December 15, 2017, including interim periods within those periods. On January 1, 2018, the Company adopted ASU No. 2017-1, which did not have a material effect 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 31, 2017. 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. On January 1, 2018, the Company adopted ASU No. 2017-7, which did not have a material effect on the Company's financial position, results of operation or cash flows but affected the presentation of the Company's results of operations. For amounts reclassified on the Company's statements of the results of operations, see Note 8 and Note 13.

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. 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. This update is not expected to have a material impact on the Company's financial position, results of operations and cash flows.

In February 2018, the FASB issued ASU No. 2018-02, *Income Statement-Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income,* which permits a reclassification from accumulated other comprehensive income to retained earnings for stranded tax effects resulting from the Tax Act. Consequently, the update eliminates the stranded tax effects resulting from the Tax Act and should improve the usefulness of information reported to financial statement users. However, because the amendments only relate to the reclassification of the income tax effects of the Tax Act, the underlying guidance that requires that the effects of the change in tax laws or rates be included in income from continuing operations is not affected. The amendments in this update also require certain disclosures about stranded tax effects. This update is effective for public business entities for fiscal years, and interim periods within those years, beginning after December 15, 2018. The Company expects to record approximately $5,300,000 adjustment to the opening balance of retained earnings and the corresponding charge to AOCI.

In August 2018, the FASB issued ASU No. 2018-13, *Fair Value Measurement (Topic 820) Disclosure Framework-Changes to the Disclosure Requirements for Fair Value Measurement*. This update modifies some disclosure requirements related to fair value measurements used for different levels of instruments in fair value hierarchy (Level 1, Level 2 and Level 3). The amendments in the update are effective for fiscal years, and interim periods within fiscal years, beginning after December 15, 2019. The adoption of this update is not expected have an effect on the Company's financial position, results of operations and cash flows but may impact the disclosures made for fair value measurements used by the Company.

In August 2018, the FASB issued ASU No. 2018-14, *Compensation-Retirement Benefits-Defined Benefit Plans-General (Subtopic 715-20).* This update removes some disclosures that are no longer considered cost beneficial and adds some disclosures about defined benefit plans that have been identified as relevant. The amendments in this update are effective for fiscal years ending after December 15, 2020. The adoption of this update is not expected to have an effect on the Company's financial position, results of operations and cash flows but will impact the disclosures made for the Company's defined benefit retirement plans.

In August 2018, the FASB issued ASU No. 2018-15, *Intangibles-Goodwill and Other-Internal-Use software (Subtopic 350-40) Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement that is a Service Contract*. This update aligns the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software. This update requires the entity to determine which implementation costs to capitalize as an asset related to the service contact and which costs to expense over the term of the hosting contract. The amendments in this update are effective for fiscal years beginning after December 15, 2019. The Company is assessing the impact that adoption of ASU No. 2018-15 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, 2018 and 2017, 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 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. 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, 2018 and 2017, 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 $978,000, and $987,000 as of December 31, 2018 and 2017, respectively):

(In thousands)	December 31	
	2018	2017
Fair value	**$ 274,119**	$ 293,272
Carrying value	**277,058**	291,786

The following tables present financial assets and liabilities measured on a recurring basis at fair value as of December 31, 2018 and 2017, and the level within the fair value hierarchy in which the fair value measurement falls:

(In thousands)	December 2018	Level 1	Level 2	Level 3
Mutual fund assets	**$ 25,082**	**$ 25,082**	**$ —**	**$ —**
Derivative assets:				
Foreign currency contracts	**185**	**—**	**185**	**—**
Total assets at fair value	**$ 25,267**	**$ 25,082**	**$ 185**	**$ —**
Derivative liabilities:				
Foreign currency contracts	**$ 10**	**$ —**	**$ 10**	**$ —**
Total liabilities at fair value	**$ 10**	**$ —**	**$ 10**	**$ —**

(In thousands)	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	$ —
Total liabilities at fair value	$ 94	$ —	$ 94	$ —

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, 2018 and 2017, 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 $28,870,081 and $41,196,629 , respectively.

The fair values of the derivative instruments held by the Company on December 31, 2018, and December 31, 2017, are disclosed in Note 2. Derivative instrument gains and losses for the years ended December 31, 2018, 2017 and 2016, were immaterial. For amounts reclassified out of AOCI into earnings for the years ended December 31, 2018, 2017 and 2016, see Note 19.

4. Goodwill and Other Intangible Assets

The changes in the carrying value of goodwill for the years ended December 31, 2018 and 2017, were as follows:

(In thousands)	Surfactants Segment		Polymer Segment		Specialty Products Segment		Total	
	2018	2017	**2018**	2017	**2018**	2017	**2018**	2017
Balance as of January 1								
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
Goodwill acquired	**—**	—	**—**	—	**—**	—	**—**	—
Goodwill measurement period adjustment (a)	**—**	(120)	**—**	—	**—**	—	**—**	(120)
Foreign currency translation	**(2,106)**	(211)	**(58)**	141	**—**	—	**(2,164)**	(70)
Balance as of December 31								
Goodwill	**20,521**	22,627	**5,417**	5,475	**483**	483	**26,421**	28,585
Accumulated impairment loss	**(3,467)**	(3,467)	**—**	—	**—**	—	**(3,467)**	(3,467)
Goodwill, net	**$ 17,054**	$ 19,160	**$ 5,417**	$ 5,475	**$ 483**	$ 483	**$ 22,954**	$ 25,118

(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 2018 and 2017 tests indicated no impairment.

The following table presents the components of other intangible assets, all of which have finite lives, as of December 31, 2018 and 2017. The year-over-year changes in gross carrying values mainly resulted from the effects of foreign currency translation.

(In thousands)	Gross Carrying Value December 31		Accumulated Amortization December 31	
	2018	2017	**2018**	2017
Other Intangible Assets:				
Patents	**$ 6,947**	$ 6,947	**$ 4,492**	$ 3,893
Non-compete agreements	**387**	$ 453	**173**	$ 113
Trademarks	**3,800**	4,087	**1,929**	1,870
Customer lists	**10,750**	12,150	**4,356**	4,299
Supply contract	**2,113**	2,476	**1,189**	774
Know-how (a)	**7,900**	8,043	**5,514**	4,669
Total	**$ 31,897**	$ 34,156	**$ 17,653**	$ 15,618

(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, 2018, 2017 and 2016, was $3,470,000, $3,711,000, and $2,845,000, respectively. Estimated amortization expense for identifiable intangibles assets for each of the five succeeding fiscal years is as follows:

(In thousands)	
For year ended 12/31/19	$ 3,428
For year ended 12/31/20	3,296
For year ended 12/31/21	1,967
For year ended 12/31/22	1,321
For year ended 12/31/23	1,321

5. *Inventories*

The composition of inventories was as follows:

(In thousands)	December 31 2018	2017
Finished products	**$ 141,900**	$ 117,529
Raw materials	**58,265**	55,219
Total inventories	**$ 200,165**	$ 172,748

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 $31,363,000 and $33,518,000 higher than reported at December 31, 2018 and 2017, respectively.

6. Debt

Debt comprised the following at December 31, 2018 and 2017:

(In thousands)	Maturity Dates	**December 31, 2018**	December 31, 2017
Unsecured private placement notes			
3.95% (net of unamortized debt issuance cost of $360 and $346 for 2018 and 2017, respectively)	2021-2027	**$ 99,640**	$ 99,654
3.86% (net of unamortized debt issuance cost of $347 and $343 for 2018 and 2017, respectively)	2019-2025	**99,653**	99,657
4.86% (net of unamortized debt issuance cost of $186 and $191 for 2018 and 2017, respectively)	2018-2023	**46,243**	55,523
5.88% (net of unamortized debt issuance cost of $85 and $95 for 2018 and 2017, respectively)	2018-2022	**22,772**	28,476
5.69% (net of unamortized debt issuance cost of $0 and $12 for 2018 and 2017, respectively)	2018	**—**	5,703
Debt of foreign subsidiaries			
Unsecured bank debt, foreign currency	2019	**7,772**	1,786
Total debt		**$ 276,080**	$ 290,799
Less current maturities		**37,058**	22,500
Long-term debt		**$ 239,022**	$ 268,299

The majority of the Company's long-term debt financing is composed of unsecured private placement notes issued to insurance companies, totaling $269,286,000 as of December 31, 2018. These notes are denominated in U.S. dollars and have fixed interest rates ranging from 3.86 percent to 5.88 percent. The notes had original maturities of 12 years with mandatory amortization of principal beginning six years after issuance. The Company will be required to make amortization payments on the currently outstanding notes from 2019 to 2027.

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. The Company's outstanding Note Purchase Agreements were amended effective January 30, 2018 to make certain covenants consistent with those included in the revolving credit agreement. The Company maintains standby letters of credit under its workers' compensation insurance agreements and for other purposes, as needed from time to time, which are issued under the revolving credit agreement. On December 31, 2018, the Company had outstanding letters of credit of $4,725,000 and no borrowings under the revolving credit agreement with $345,275,000 remaining available.

Loans under the credit agreement may be incurred, at the discretion of the Company, with terms to maturity of one to six months. The Company may choose from two interest rate options: (1) LIBOR applicable to each currency plus spreads ranging from 1.25 percent to 1.875 percent, depending on the Company's net leverage ratio, or (2) the prime rate plus 0.25 percent to 0.875 percent, depending on the Company's net leverage ratio. The credit agreement requires the Company to pay a commitment fee ranging from 0.15 percent to 0.325 percent per annum, which also depends on the Company's net leverage ratio. The credit agreement requires 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 $7,772,000 of unsecured debt at December 31, 2018.

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 $190,442,000 and $190,495,000 at December 31, 2018, and 2017, respectively.

Debt at December 31, 2018, matures as follows: $37,058,000 in 2019; $29,286,000 in 2020; $43,572,000 in 2021; $43,573,000 in 2022; $37,857,000 in 2023 and $85,712,000 after 2023. Debt maturing in 2019 includes $29,286,000 of scheduled repayments under long-term debt agreements and $7,772,000 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, 2018, 2017 and 2016, comprised the following:

(In thousands)	**2018**	2017	2016
Interest expense	**$ 13,360**	$ 14,428	$ 15,240
Interest income	**(1,829)**	(2,075)	(1,247)
	11,531	12,353	13,993
Capitalized interest	**(760)**	(909)	(788)
Interest expense, net	**$ 10,771**	$ 11,444	$ 13,205

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 $10,455,000, $10,807,000, and $8,595,000 in 2018, 2017 and 2016, 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, 2018, are:

(In thousands) *Year*	
2019	$ 9,740
2020	8,294
2021	6,027
2022	5,242
2023	4,101
Subsequent to 2023	16,593
Total minimum future rental payments	$ 49,997

8. Other, Net

Other, net in the consolidated statements of income included the following for the years ended December 31, 2018, 2017 and 2016:

(In thousands)	***2018***	*2017*	*2016*
Foreign exchange gains (losses)	**$ 1,902**	$ (646)	$ (14)
Investment income	**1,554**	989	690
Realized and unrealized gains(losses) on investments	**(2,966)**	4,178	152
Net periodic benefit cost	**(1,215)**	(1,035)	(1,637)
Other, net	**$ (725)**	$ 3,486	$ (809)

Based on requirements of ASU No. 2017-07, *Compensation-Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost*, the Company reclassified Net periodic benefit cost outside of income from operations for the prior year periods to conform with the 2018 presentation. See Note 13 for more details for the components of Net periodic benefit cost.

9. Income Taxes

The provisions for taxes on income and the related income before taxes for the years ended December 31, 2018, 2017 and 2016, were as follows:

(In thousands)	***2018***	*2017*	*2016*
Taxes on Income			
Federal			
Current	**$ (296)**	$ 32,299	$ 18,811
Deferred	**9,314**	(1,744)	(3,192)
State			
Current	**2,095**	1,764	2,273
Deferred	**1,892**	192	(1,171)
Foreign			
Current	**14,510**	13,077	14,960
Deferred	**(342)**	2,102	(4,063)
Total	**$ 27,173**	$ 47,690	$ 27,618
Income before Taxes			
Domestic	**$ 88,522**	$ 72,662	$ 64,675
Foreign	**51,401**	66,575	49,141
Total	**$ 139,923**	$ 139,237	$ 113,816

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

(In thousands)	2018 Amount	%	2017 Amount	%	2016 Amount	%
Federal income tax provision at statutory tax rate	**$ 29,384**	**21.0**	$ 48,733	35.0	$ 39,836	35.0
State income tax provision, less applicable federal tax benefit	**3,150**	**2.3**	1,271	0.9	716	0.6
Foreign income taxed at different rates	**864**	**0.6**	(8,075)	(5.8)	(6,325)	(5.6)
U.S. taxation of foreign earnings[(a)]	**2,348**	**1.7**	(1,054)	(0.8)	14	—
Unrecognized tax benefits	**(460)**	**(0.3)**	(47)	—	23	—
Domestic production activities deduction	**—**	—	(1,339)	(1.0)	(1,633)	(1.4)
Nontaxable foreign interest income	**(1,179)**	**(0.8)**	(2,073)	(1.5)	(2,030)	(1.8)
U.S. tax reform, net impact[(b)]	**(375)**	**(0.3)**	14,807	10.7	—	—
Change in accounting methods[(c)]	**(3,383)**	**(2.4)**	(893)	(0.6)	—	—
Stock based compensation, excess tax benefits[(d)]	**(1,648)**	**(1.2)**	(2,254)	(1.6)	(1,878)	(1.7)
U.S. tax credits	**(1,324)**	**(0.9)**	(1,204)	(0.9)	(1,100)	(1.0)
Non-deductible expenses and other items, net[(e)]	**(204)**	**(0.3)**	(182)	(0.1)	(5)	0.2
Total income tax provision	**$ 27,173**	**19.4**	$ 47,690	34.3	$ 27,618	24.3

(a) Includes cost of global intangible low-taxed income (GILTI) in 2018 and withholding taxes paid on cash repatriated from foreign countries.
(b) Does not include state tax impacts, which are included in state income tax provision, less applicable federal tax benefit.
(c) For 2018, amount represents the federal tax rate change due to certain accounting methods that were adopted on the 2017 federal income tax return. For 2017, amount represents an accounting method change for depreciation.
(d) Excess tax benefits related to employee share-based payment transactions recognized in 2018, 2017 and 2016 resulting from the adoption of ASU No. 2016-9.
(e) Certain 2016 amounts have been reclassified to conform to the 2017 and 2018 presentation.

On December 22, 2017, the U.S. government enacted the Tax Act, which was comprehensive tax legislation. The Tax Act made broad and complex changes to the U.S. tax code that affect the Company's income tax provision for 2018 including, but not limited to: (1) a 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 (BEAT), 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) the 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 Tax Act established new tax laws that affected 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 Securities and Exchange Commission staff issued SAB 118, which provides guidance on accounting for the tax effects of the Tax Act. SAB 118 allows a company to record a provisional amount when it does not have the necessary information available, prepared, or analyzed in reasonable detail to complete its accounting for the change in the tax law. The measurement period ends when a company has obtained, prepared and analyzed the information necessary to finalize its accounting, but cannot extend beyond one year.

During 2018, we examined the Tax Act changes discussed above and completed our analysis. As such, we were able to make reasonable estimates of the effects of the changes and consider our accounting for the income tax effects of certain elements of the Tax Act complete in all material respects as discussed immediately below.

Deemed Repatriation Transition Tax: The Transition Tax is a tax on previously untaxed accumulated and current earnings and profits of our foreign subsidiaries. We were able to reasonably estimate the Transition Tax and recorded a provisional Transition Tax obligation of $19.4 million, with a corresponding adjustment of $19.4 million to income tax expense for the year ended December

31, 2017. On the basis of revised earnings and profits computations that were completed, we recognized a favorable measurement-period adjustment of $0.4 million to the Transition Tax obligation, with a corresponding favorable adjustment of $0.4 million to income tax expense during 2018. The effect of the measurement-period adjustment on the 2018 effective tax rate was a reduction of approximately 0.3 percent. The Transition Tax, the accounting for which has now been determined to be materially complete, resulted in recording a total Transition Tax obligation of $19.0 million, with a corresponding adjustment of $19.0 million to income tax expense. We expect another minor measurement-period Transition Tax adjustment to occur in 2019 upon finalization of the earnings and profits for some of our non-calendar-year-end foreign subsidiaries. These foreign subsidiaries are non-calendar-year-end entities for U.S. federal income tax purposes only.

Permanent Reinvestment: Pursuant to the Tax Act, the Company's foreign earnings have been subject to U.S. federal taxes. The Company now has the ability to repatriate to the U.S. parent the cash associated with these foreign earnings with little additional U.S. federal taxes. This cash may, however, be subject to foreign income and/or local country taxes if repatriated to the United States. In addition, repatriation of some foreign cash balances may be further restricted by local laws. During the year, the Company completed analyzing its foreign capital structure and determined the amount of cash at its foreign subsidiaries that can be repatriated to the United States with minimal additional taxes. In our analysis, the Company considered the future operating and liquidity needs of the Company and its foreign subsidiaries, while also considering the Company's past assertion of indefinite reinvestment in its foreign earnings. Based on this analysis, the Company repatriated approximately $100.0 million to the U.S. parent and recorded $1.8 million of additional income tax expense in 2018 as a result of the repatriation. The effect of the adjustment on the 2018 effective tax rate was an increase of approximately 1.3 percent. With regard to the cash remaining at the Company's foreign subsidiaries after the repatriation, the Company maintains its assertion of indefinite reinvestment in its foreign earnings.

Reduction of U.S. federal corporate tax rate: The Tax Act reduced the corporate tax rate to 21 percent, effective January 1, 2018. We were able to reasonably estimate the impact to our deferred tax assets and liabilities and recorded a provisional net favorable adjustment of $4.5 million for the year ended December 31, 2017. On the basis of revised temporary differences that were completed during 2018 due to tax accounting method changes and other accelerated deductions, we recognized a favorable measurement-period adjustment of $5.2 million. The effect of the measurement-period adjustment on the 2018 effective tax rate was a reduction of approximately 3.7 percent. The reduction of the U.S. federal corporate tax rate, which has now been determined to be complete, resulted in recording a total deferred income tax benefit of $9.7 million as a result of revaluing the Company's deferred tax assets and liabilities.

Cost recovery: The Company is able to claim bonus depreciation to accelerate the expensing of the cost of certain qualified property acquired and placed in service after September 27, 2017 and before January 1, 2024. For the first five-year period (through 2022), the Company can deduct 100 percent of the cost of qualified property. Starting in 2023, the additional bonus depreciation is gradually phased out by 20 percent each year through 2027.

We have completed the computations necessary and completed an inventory of our 2018 expenditures for property that was placed in service in 2018 and that qualifies for immediate expensing. We reasonably estimate said expenditures to be approximately $11.5 million. As these expenditures are temporary in nature, there was no impact to the effective tax rate. We also completed the computations necessary and completed an inventory of our 2017 expenditures for property that was placed into service from September 28, 2017 through December 31, 2017 and that qualified for immediate expensing. We concluded the impact of the true-up adjustment from this analysis, which has now been determined to be complete, was immaterial.

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 foreign tax credits). The Tax Act did not result in any additional valuation allowances for the Company.

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 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 depended, 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 depended 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. We determined to treat taxes due on future income inclusions related to GILTI as a current-period expense, option (1) above. The current-period expense for 2018 was $0.6 million which increased the 2018 effective tax rate by approximately 0.4 percent. We did not make any adjustments related to any potential deferred tax liabilities related to GILTI in our financial statements and have not recorded deferred tax liabilities related to GILTI.

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. We completed our evaluation of our existing compensation arrangements to determine whether any amounts payable to our Section 162(m) covered employees qualified under the grandfather provision. We determined that certain of these arrangements constitute qualified performance-based compensation under Section 162(m) and qualify under the grandfather provision. As a result, for compensation not yet paid or incurred related to services performed before January 1, 2018, to the extent available, we continued to treat this compensation as "qualified performance-based compensation" that is grandfathered under the Tax Act, which is deductible compensation. For services rendered after January 1, 2018, we recognized an unfavorable adjustment of $0.5 million in 2018. The effect of the adjustment on the 2018 effective tax rate was an increase of approximately 0.3 percent.

Other Miscellaneous Tax Amendments of the Tax Act: The Tax Act's other amendments including the creation of BEAT, a new minimum tax; limitations on the use of foreign tax credits (FTCs) to reduce the U.S. income tax liability; limitations on NOLs generated after December 31, 2017, to 80 percent of taxable income; and a new limitation on deductible interest expense were determined by the Company to be either not applicable or immaterial for 2018. Such tax amendments, however, may be subject to adjustment in subsequent periods in accordance with future interpretive guidance issued by the Internal Revenue Service (IRS), or may become material in prospective tax years. We continue to work with our tax advisors to determine such future impacts.

At December 31, 2018 and 2017, the tax effects of significant temporary differences representing deferred tax assets and liabilities were as follows:

(In thousands)	***2018***	*2017*
Deferred Tax Liabilities:		
Depreciation	**$ (57,665)**	$ (51,244)
Unrealized foreign exchange loss	**(980)**	(734)
Amortization of intangibles	**(1,016)**	(1,420)
Inventories	**(725)**	—
Other	**(301)**	(646)
	$ (60,687)	$ (54,044)
Deferred Tax Assets:		
Pensions	**$ 7,971**	$ 7,884
Deferred revenue	**208**	232
Other accruals and reserves	**13,123**	13,660
Inventories	**—**	1,182
Legal and environmental accruals	**7,143**	7,243
Deferred compensation	**14,214**	15,402
Bad debt and rebate reserves	**2,916**	2,865
Non-U.S. subsidiaries net operating loss carryforwards	**3,869**	2,657
Tax credit carryforwards	**2,141**	1,851
	$ 51,585	$ 52,976
Valuation Allowance	**$ (3,701)**	$ (2,255)
Net Deferred Tax Liabilities	**$ (12,803)**	$ (3,323)
Reconciliation to Consolidated Balance Sheet:		
Non-current deferred tax assets (in other non-current assets)	**5,869**	7,639
Non-current deferred tax liabilities	**(18,672)**	(10,962)
Net Deferred Tax (Liabilities) Assets	**$ (12,803)**	$ (3,323)

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 recorded $19.0 million in income tax expense, representing U.S. federal and state taxes 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 and adjusted for the year ended December 31, 2018. In 2018, the Company repatriated approximately $100.0 million to the U.S. parent, and recorded $1.8 million of additional income tax expense in 2018 as a result of the repatriation. The effect of the adjustment on the 2018 effective tax rate was an increase of approximately 1.3 percent. With regard to the cash remaining at the Company's foreign subsidiaries after the repatriation, the Company maintains its assertion of indefinite reinvestment in its foreign earnings. At this time, the determination of deferred tax liabilities on this amount is not practicable.

The Company has non-U.S. tax loss carryforwards of $14,901,000 (pretax) as of December 31, 2018, and $10,352,000 as of December 31, 2017, that are available for use by the Company between 2019 and 2038. The Company has tax credit carryforwards of $2,141,000 as of December 31, 2018, and $1,851,000 as of December 31, 2017 that are available for use by the Company between 2019 and 2028.

At December 31, 2018, the Company had valuation allowances of $3,701,000, which were attributable to deferred tax assets in Canada, 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, 2018 and 2017, unrecognized tax benefits totaled $168,000 and $1,927,000, 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 $162,000, $1,917,000 and $1,921,000 at December 31, 2018, 2017 and 2016, respectively. The Company does not believe that the amount of unrecognized tax benefits related to its current uncertain tax positions will change significantly over the next 12 months.

The Company recognizes accrued interest and penalties related to unrecognized tax benefits as income tax expense. In 2018, the Company recognized net interest and penalty income of $26,000 compared to $3,000 of net interest and penalty expense in 2017 and $9,000 of net interest and penalty expense in 2016. At December 31, 2018 the liability for interest and penalties was $30,000 compared to $56,000 at December 31, 2017.

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 2015. Some foreign jurisdictions and various U.S. states jurisdictions may be subject to examination back to 2012.

During 2016, the Internal Revenue Service started its audit of the 2011 and 2012 tax years. As of December 31, 2018, these audits were effectively settled. As such, the Company reversed an unrecognized tax benefit of $1.5 million that was offset with a corresponding reversal of $1.3 million related to an income tax refund receivable for which the Company is no longer entitled to receive.

Below are reconciliations of the January 1 and December 31 balances of unrecognized tax benefits for 2018, 2017 and 2016:

(In thousands)	**2018**	2017	2016
Unrecognized tax benefits, opening balance	**$ 1,927**	$ 1,931	$ 1,958
Gross increases – tax positions in prior period	**29**	—	—
Gross increases – current period tax positions	**26**	20	35
Foreign currency translation	**1**	69	(43)
Settlement	**(1,526)**	—	—
Lapse of statute of limitations	**(289)**	(93)	(19)
Unrecognized tax benefits, ending balance	**$ 168**	$ 1,927	$ 1,931

10. Stockholders' Equity

At December 31, 2018 and 2017, treasury stock consisted of 3,803,043 shares and 3,561,509 shares of common stock, respectively. During 2018, 165,679 shares of Company common stock were purchased in the open market and 40,304 shares of Company common stock were purchased from Company Retirement Plans. In addition, 43,961 shares were received to settle employees' minimum statutory withholding taxes related to performance stock awards, exercised SARs and deferred compensation distributions. Also, 8,410 shares of treasury stock were distributed to participants under the Company's deferred compensation plan.

11. Stock-based Compensation

On December 31, 2018, 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, 2018, there were 665,374 shares available for grant under the 2011 Plan.

Compensation expense recorded in the consolidated statements of income for all plans was $6,837,000, $7,151,000, and $12,618,000 for the years ended December 31, 2018, 2017 and 2016, respectively. The decrease in stock-based compensation in 2018 versus 2017 was primarily due to the decrease in compensation related to cash-settled SARs. Due to a $4.97 decrease in the market value of Company common stock from $78.97 at December 31, 2017 to $74.00 at December 31, 2018, the fair value of SARs decreased, resulting in a decrease of the Company's SARs liability. In 2017, the market value of Company common stock decreased $2.51 from $81.48 in 2016 to $78.97 in 2017, resulting in a decrease of the Company's SARs liability.

The total income tax benefit recognized in the income statement for share-based compensation arrangements was $1,849,000, $2,980,124, and $4,761,000 for the years ended December 31, 2018, 2017 and 2016, 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 and 2018 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, 2018, 2017 and 2016:

	For the Years Ended December 31		
	2018	2017	2016
Expected dividend yield	**1.34%**	1.39%	1.45%
Expected volatility	**27.41%**	30.01%	35.62%
Expected term	**7.3 years**	7.2 years	7.3 years
Risk-free interest rate	**2.88%**	2.22%	1.52%

A summary of stock option activity for the year ended December 31, 2018 is presented below:

	Shares	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term	Aggregate Intrinsic Value ($000)
Options				
Outstanding at January 1, 2018	391,805	$ 52.09		
Granted	77,038	73.08		
Exercised	(97,471)	42.71		
Forfeited	(9,829)	61.79		
Outstanding at December 31, 2018	361,543	58.83	6.73	$ 5,485
Vested or expected to vest at December 31, 2018	352,436	58.38	6.68	5,506
Exercisable at December 31, 2018	268,545	53.17	6.05	5,592

The weighted-average grant-date fair values of options awarded during the years ended December 31, 2018, 2017 and 2016, were $22.13, $24.49, and $14.70, respectively. The total intrinsic values of options exercised during the years ended December 31, 2018, 2017, and 2016 were $3,879,000, $5,232,000, and $6,620,000, respectively.

As of December 31, 2018, the total unrecognized compensation cost for unvested stock options was $1,655,000. That cost is expected to be recognized over a weighted-average period of 1.7 years.

Cash received from stock option exercises under the Company's stock option plans for the years ended December 31, 2018, 2017, and 2016 was $4,163,000, $3,370,000, and $4,017,000, respectively. The actual tax benefit realized for the tax deductions from stock option exercises totaled $548,000, $1,455,000, and $1,899,000 for the years ended December 31, 2018, 2017 and 2016, respectively.

Stock Awards

In 2016, 2017, and 2018, 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, 2018, is presented below:

	Shares	Weighted-Average Grant Date Fair Value
Stock Awards		
Unvested at January 1, 2018	169,033	$ 49.48
Granted	54,055	72.06
Vested	(119,501)	41.88
Forfeited	(18,217)	53.05
Unvested at December 31, 2018	85,370	73.65

The weighted-average grant-date fair values of stock awards granted during the years ended December 31, 2018, 2017 and 2016, were $72.06, $75.94, and $41.81, respectively. As of December 31, 2018, under the current Company assumption as to the number of stock award shares that will vest at the measurement periods ended December 31, 2019 and 2020, there was $3,180,000 of unrecognized compensation cost for unvested stock awards. That cost is expected to be recognized over a period of 1.7 years.

SARs

At December 31, 2018, 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 and 2018 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, 2018:

	Shares	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term	Aggregate Intrinsic Value ($000)
SARs				
Outstanding at January 1, 2018	616,650	$ 55.23		
Granted	171,131	73.11		
Exercised	(117,942)	49.68		
Forfeited	(30,693)	63.66		
Outstanding at December 31, 2018	639,146	60.64	7.10	$ 8,430

The weighted-average grant-date fair values of SARs granted during the years 2018, 2017 and 2016 were $22.19, $24.90, and $14.69 , 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, 2018 and 2017, the liability for cash-settled SARs recorded on the consolidated balance sheet (non-current liabilities) was $3,647,000 and $4,760,000, respectively. At December 31, 2018, there was $3,566,000 of total unrecognized compensation cost related to all unvested SARs. That cost is to be recognized over a weighted-average period of 1.8 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 periodically purchases 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 or income resulting from the changes in the market values and earnings of the selected investment options was $2,329,000 income in 2018 and $4,857,000 and $16,805,000 expense in 2017 and 2016, respectively. Contributing to the 2018 deferred compensation income was a $4.97 per share decrease in the value of the Company's common stock. 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 $50,451,000 and $58,915,000 at December 31, 2018 and 2017, 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 during the years 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

(In thousands)	United States		United Kingdom	
	2018	2017	**2018**	2017
Change in benefit obligation				
Benefit obligation at beginning of year	**$ 171,358**	$ 162,727	**$ 24,048**	$ 22,034
Interest cost	**6,194**	6,651	**565**	592
Actuarial (gain) loss	**(11,494)**	9,109	**(2,129)**	(156)
Benefits paid	**(7,464)**	(7,129)	**(1,255)**	(516)
Foreign exchange impact	**—**	—	**(1,223)**	2,094
Benefit obligation at end of year	**$ 158,594**	$ 171,358	**$ 20,006**	$ 24,048

(In thousands)	United States		United Kingdom	
	2018	2017	**2018**	2017
Change in plan assets				
Fair value of plan assets at beginning of year	**$ 147,908**	$ 137,092	**$ 24,168**	$ 20,336
Actual return (loss) on plan assets	**(11,558)**	15,533	**(1,583)**	1,957
Employer contributions	**5,312**	2,412	**494**	365
Benefits paid	**(7,464)**	(7,129)	**(1,254)**	(516)
Foreign exchange impact	**—**	—	**(1,249)**	2,026
Fair value of plan assets at end of year	**$ 134,198**	$ 147,908	**$ 20,576**	$ 24,168
Over (Under) funded status at end of year	**$ (24,396)**	$ (23,450)	**$ 570**	$ 120

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

(In thousands)	United States		United Kingdom	
	2018	2017	**2018**	2017
Non-current asset	**$ —**	**$ —**	**$ 570**	**$ 120**
Current liability	**(302)**	(302)	**—**	—
Non-current liability	**(24,094)**	(23,148)	**—**	—
Net amount recognized	**$ (24,396)**	$ (23,450)	**$ 570**	$ 120

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

(In thousands)	United States		United Kingdom	
	2018	2017	**2018**	2017
Net actuarial loss	**$ 45,334**	$ 39,801	**$ 5,849**	$ 5,743

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

(In thousands)	United States		United Kingdom	
	2018	2017	**2018**	2017
Projected benefit obligation	**$ 158,594**	$ 171,358	**$ —**	$ —
Accumulated benefit obligation	**158,594**	171,358	**—**	—
Fair value of plan assets	**134,198**	147,908	**—**	—

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

Net periodic benefit costs for the years ended December 31, 2018, 2017 and 2016, were as follows:

(In thousands)	United States			United Kingdom		
	2018	2017	2016	**2018**	2017	2016
Interest cost	**$ 6,194**	$ 6,651	$ 6,934	**$ 565**	$ 592	$ 733
Expected return on plan assets	**(9,284)**	(9,288)	(9,012)	**(885)**	(797)	(900)
Amortization of net actuarial loss	**3,814**	3,085	3,386	**219**	382	77
Net periodic benefit cost	**$ 724**	$ 448	$ 1,308	**$ (101)**	$ 177	$ (90)

In the first quarter of 2018, the Company implemented ASU No. 2017-07, *Compensation-Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost*, which amended the guidance for the presentation of the components of net periodic cost in the income statement. The guidance requires the service cost component of net periodic benefit cost to be included in employee compensation costs in the income statement and all other components elsewhere in the income statement outside of income from operations. The Company does not have a service component of the net periodic benefit cost because the U.S. and U.K. defined benefit plans are frozen. The other components of the net periodic benefit cost such as interest cost, amortization of the net actuarial loss and expected return on plan assets are included in the line item Other, net within Other Income (Expense) section of the Income statement. See Note 8 for more details.

Other changes in plan assets and benefit obligations recognized in other comprehensive income for the years ended December 31, 2018, 2017 and 2016, were as follows:

(In thousands)	United States			United Kingdom		
	2018	2017	2016	**2018**	2017	2016
Net actuarial (gain) loss	**$ 9,348**	$ 2,864	$ (11,062)	**$ 325**	**$ (1,318)**	$ 3,756
Amortization of net actuarial loss	**(3,814)**	(3,085)	(3,386)	**(219)**	**(382)**	(77)
Total recognized in other comprehensive income	**$ 5,534**	$ (221)	$ (14,448)	**$ 106**	**$ (1,700)**	$ 3,679
Total recognized in net periodic benefit cost and other comprehensive income	**$ 6,258**	$ 227	$ (13,140)	**$ 5**	**$ (1,523)**	$ 3,589

The estimated amounts that will be reclassified from accumulated other comprehensive income into net periodic benefit cost in 2019 are as follows:

(In thousands)	United States	United Kingdom
Net actuarial loss	**$ 2,609**	**$ 244**

Estimated Future Benefit Payments

(In thousands)	United States	United Kingdom
2019	$ 8,009	$ 482
2020	8,443	487
2021	8,954	509
2022	9,438	553
2023	9,836	592
2024-2028	51,998	3,557

Assumptions

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

	United States		United Kingdom	
	2018	2017	**2018**	2017
Discount rate	**4.30%**	3.67%	**2.80%**	2.40%

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

	United States			United Kingdom		
	2018	2017	2016	**2018**	2017	2016
Discount rate	**3.67%**	4.17%	4.39%	**2.40%**	2.60%	4.00%
Expected long-term return on plan assets	**6.75%**	7.00%	7.00%	**3.71%**	3.77%	4.59%

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 a combination of active and passive investment strategies. 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 exposure is now categorized within mid cap equity.

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 developing targets based on potential risk and potential 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 approximately 59 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 asse ts 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 43,930 common shares to the Company's ESOP trust on February 21, 2018, 23,471 shares to the Company on March 9, 2018 and 16,833 shares to the Company on August 8, 2018. In 2017, the plans sold 40,837 shares to the Company's ESOP trust on February 21, 2017 and 18,827 shares to the Company on November 20, 2017. The target allocation for employer securities is 11 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, 2018, the pension asset allocation was 59 percent equities, 31 percent fixed income, six percent insurance contracts, three percent real estate and one 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, 2018 and 2017, by asset category, were as follows:

	December 31, 2018			
(In thousands)	Level 1	Level 2	Level 3	Total
Cash and Cash Equivalents	$ 4,935	$ —	$ —	$ 4,935
Equity Securities				
U.S. Equities	34,751	—	—	34,751
Non-U.S. Equities	27,415	—	—	27,415
Employer Securities	22,063	—	—	22,063
Total Equities	84,229	—	—	84,229
Fixed Income Securities				
U.S. Corporate Bonds	—	29,659	—	29,659
U.S. Government and Agency Bonds	6,314	3,139	—	9,453
Other Bonds	—	5,922	—	5,922
Total Fixed Income	6,314	38,720	—	45,034
Total	$ 95,478	$ 38,720	$ —	$ 134,198

	December 31, 2017			
(In thousands)	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

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 2018 or 2017 were categorized as Level 3.

U.K. Plan

The Company's asset allocations for its U.K. pension plans at December 31, 2018 and 2017, by asset category, were as follows:

	December 31, 2018			
(In thousands)	**Level 1**	**Level 2**	**Level 3**	**Total**
Cash	**$ 205**	**$ —**	**$ —**	**$ 205**
Equity Securities				
Pooled Pension Funds	**—**	**12,750**	**—**	**12,750**
Fixed Income				
Pooled Pension Funds	**—**	**6,378**	**—**	**6,378**
Real Estate				
Pooled Pension Funds	**—**	**—**	**—**	**—**
Insurance Contracts	**—**	**—**	**1,243**	**1,243**
Total	**$ 205**	**$ 19,128**	**$ 1,243**	**$ 20,576**

	December 31, 2017			
(In thousands)	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

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 2017 and 2018:

(In thousands)	Insurance Contracts
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	$ 1,698
Sale proceeds (benefit payments)	(129)
Change in unrealized gain	(247)
Foreign exchange impact	(79)
Fair value, December 31, 2018	$ 1,243

Long-term Rate of Return for Plan Assets

U.S. Plans

The overall expected long-term rate of return on assets of 6.75 percent that was used to develop the 2018 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 4.79 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 6.41 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 4.8 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 2019 contributions to the funded U.S. qualified defined benefit plans. The Company expects to contribute $301,000 in 2019 to the unfunded non-qualified U.S. pension plans. The Company expects to contribute $476,000 to the U.K. defined benefit plan in 2019.

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. Prior to 2018, the Company made profit sharing contributions into the qualified retirement plans for its U.S. employees and in 2018 made profit sharing contributions into the qualified retirement plans for U.S. employees and for certain non-U.S. employees. Profit sharing contributions were determined using a formula applied to Company earnings. Profit sharing contributions for U.S. employees, who received the majority of profit sharing contributions, were made partly in cash paid to the 401(k) plan and partly in Company common stock. Profit sharing contributions are allocated to participant accounts on the basis of participant base earnings. Effective January 1, 2018, the Company amended its U.S. 401(k) plan and its profit sharing formula, which resulted in a higher potential contribution percentage to the U.S. 401(k) plan and a lower potential profit sharing contribution percentage relative to prior years.

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

(In thousands)	***2018***	*2017*	*2016*
Retirement contributions	**$ 7,617**	$ 4,998	$ 4,902
Profit sharing contributions	**4,182**	7,002	6,230
Total	**$ 11,799**	$ 12,000	$ 11,132

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, 2018 and 2017, the trust asset balances were $1,444,000 and $1,587,000, respectively, and the supplemental plan liability balances were $1,519,000 and $1,661,000, 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, 2018, 2017 and 2016, the Company recognized $374,000, $398,000 and $290,000, respectively, of statutory profit sharing expense.

14. Accrued Liabilities

The composition of accrued liabilities was as follows:

	December 31	
(In thousands)	***2018***	*2017*
Accrued payroll and benefits	**$ 53,782**	$ 58,877
Accrued customer rebates	**24,833**	16,729
Other accrued liabilities	**16,955**	17,170
Total accrued liabilities	**$ 95,570**	$ 92,776

15. Other Non-Current Liabilities

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

	December 31	
(In thousands)	***2018***	*2017*
Deferred revenue	**$ 1,215**	$ 1,539
Environmental and legal matters	**20,404**	21,888
Deferred compensation liability	**43,819**	51,890
Pension liability	**26,722**	25,632
Other non-current liabilities	**11,704**	29,484
Total other non-current liabilities	**$ 103,864**	$ 130,433

16. Contingencies

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 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 related to or has been named by government authorities as a 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 is likely to incur with respect to these sites.

As of December 31, 2018, the Company estimated a range of possible environmental and legal losses of $23.4 million to $44.7 million. The Company's accrued liability for such losses was $23.4 million at December 31, 2018, compared to $24.2 million at December 31, 2017. During 2018, cash outlays related to legal and environmental matters approximated $1.6 million compared to $2.0 million in 2017.

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. 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, management believes that the Company has no liability at these sites and 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, 2018:

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 is reasonable having considered the range of estimated cost of remediation for the Maywood site. The 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 is reasonable having considered the range of estimated 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 $2.6 million for the Company's portion of environmental response costs through December 31, 2018. 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. Based on current information, the Company believes that its recorded liability for the remediation of the affected areas is appropriate based on the estimate of expected costs. 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, 2018, 2017 and 2016:

(In thousands)	*Surfactants*	*Polymers*	*Specialty Products*	*Segment Totals*
2018				
Net sales	**$ 1,385,932**	**$ 527,420**	**$ 80,505**	**$ 1,993,857**
Operating income	**137,506**	**64,539**	**11,661**	**213,706**
Assets	**850,553**	**351,690**	**82,957**	**1,285,200**
Capital expenditures	**51,543**	**26,663**	**6,192**	**84,398**
Depreciation and amortization expenses	**50,514**	**23,253**	**5,150**	**78,917**
2017				
Net sales	$ 1,297,555	$ 546,634	$ 80,818	$ 1,925,007
Operating income (a)	120,861	82,951	9,965	213,777
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
2016				
Net sales	$ 1,181,563	$ 498,826	$ 85,777	$ 1,766,166
Operating income (a)	101,092	97,102	10,725	208,919
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

(a) The 2017 and 2016 amounts for the noted line items have been immaterially changed from the amounts originally reported as a result of the Company's first quarter 2018 adoption of ASU No. 2017-7, *Compensation –Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost.*

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

(In thousands)	***2018***	*2017*	*2016*
Operating income - segment totals (a)	**$ 213,706**	$ 213,777	$ 208,919
Business restructuring and asset impairments (b)	**(2,588)**	(3,069)	(7,064)
Unallocated corporate expenses (c)	**(59,699)**	(63,513)	(74,025)
Total operating income	**151,419**	147,195	127,830
Interest expense, net	**(10,771)**	(11,444)	(13,205)
Other, net (a)	**(725)**	3,486	(809)
Consolidated income before income taxes	**$ 139,923**	$ 139,237	$ 113,816
Assets - segment totals	**$ 1,285,200**	$ 1,311,932	$ 1,208,697
Unallocated corporate assets (d)	**199,466**	158,929	145,193
Consolidated assets	**$ 1,484,666**	$ 1,470,861	$ 1,353,890
Capital expenditures - segment totals	**$ 84,398**	$ 75,780	$ 100,205
Unallocated corporate expenditures	**2,249**	2,833	2,871
Consolidated capital expenditures	**$ 86,647**	$ 78,613	$ 103,076
Depreciation and amortization expenses – segment totals	**$ 78,917**	$ 77,119	$ 73,122
Unallocated corporate depreciation expenses	**2,198**	1,903	1,845
Consolidated depreciation and amortization expenses	**$ 81,115**	$ 79,022	$ 74,967

(a) The 2017 and 2016 amounts for the noted line items have been immaterially changed from the amounts originally reported as a result of the Company's first quarter 2018 adoption of ASU No. 2017-7, *Compensation –Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost*.

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

(c) 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.

(d) The changes in unallocated corporate assets between 2018, 2017 and 2016 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, 2018, 2017 and 2016:

(In thousands)	***2018***	*2017*	*2016*
Net sales (a)			
United States	**$ 1,193,938**	$ 1,159,578	$ 1,076,259
France	**171,010**	176,052	151,031
Poland	**170,474**	188,244	153,986
United Kingdom	**105,732**	99,069	86,458
Brazil	**100,328**	109,960	74,961
All other countries	**252,375**	192,104	223,471
Total	**$ 1,993,857**	$ 1,925,007	$ 1,766,166
Long-lived assets (b)			
United States	**$ 427,274**	$ 420,342	$ 411,023
Germany	**29,151**	29,116	27,475
Singapore	**30,838**	33,530	36,270
Brazil	**48,427**	55,974	58,106
China	**29,030**	30,849	29,508
United Kingdom	**20,225**	21,657	20,309
All other countries	**61,145**	50,631	47,670
Total	**$ 646,090**	$ 642,099	$ 630,361

(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.

18. Earnings Per Share

Below is the computation of basic and diluted earnings per share for the years ended December 31, 2018, 2017 and 2016.

(In thousands, except per share amounts)	***2018***	*2017*	*2016*
Computation of Basic Earnings per Share			
Net income attributable to Stepan Company	**$ 112,762**	$ 91,578	$ 86,191
Weighted-average number of shares outstanding	**23,022**	22,946	22,793
Basic earnings per share	**$ 4.90**	$ 3.99	$ 3.78
Computation of Diluted Earnings per Share			
Net income attributable to Stepan Company	**$ 112,762**	$ 91,578	$ 86,191
Weighted-average number of shares outstanding	**23,022**	22,946	22,793
Add weighted-average net shares from assumed exercise of options (under treasury share method) (a)	**101**	161	159
Add weighted-average net shares related to unvested stock awards (under treasury share method)	**3**	8	6
Add weighted-average net shares from assumed exercise of SARs (under treasury share method)	**110**	142	68
Add weighted-average contingently issuable net shares related to performance stock awards (under treasury share method)	**89**	120	68
Weighted-average shares applicable to diluted earnings	**23,325**	23,377	23,094
Diluted earnings per share	**$ 4.83**	$ 3.92	$ 3.73

(a) Options/SARs to purchase 50,770, 18,630 and 43,715 shares of common stock were not included in the computations of diluted earnings per share for the years ended December 31, 2018, 2017 and 2016, respectively. The options'/SARs' exercise prices were greater than the average market price for the common stock and the effect of the options/SARs 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, 2018, 2017 and 2016:

(In thousands)	Foreign Currency Translation Adjustments	Defined Benefit Pension Plan Adjustments	Cash Flow Hedge Adjustments	Total
Balance at December 31, 2015	**$ (88,337)**	**$ (36,825)**	**$ 74**	**$ (125,088)**
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)
Balance at December 31, 2016	**$ (96,775)**	**$ (30,790)**	**$ 100**	**$ (127,465)**
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
Balance at December 31, 2017	**$ (70,561)**	**$ (29,093)**	**$ 91**	**$ (99,563)**
Other comprehensive income before reclassifications	(37,920)	(7,080)	—	(45,000)
Amounts reclassified from AOCI	—	3,090	(10)	3,080
Net current period other comprehensive income	(37,920)	(3,990)	(10)	(41,920)
Balance at December 31, 2018	**$ (108,481)**	**$ (33,083)**	**$ 81**	**$ (141,483)**

Amounts reclassified out of AOCI for the three years ended December 31, 2018, 2017 and 2016, is displayed below:

(In thousands)	Amounts Reclassified from AOCI (a)			Affected Line Item in Consolidated Statements of Income
	2018	2017	2016	
Amortization of defined pension items:				
Prior service cost	**$ (12)**	$ (14)	$ (14)	
Actuarial loss	**(4,059)**	(3,509)	(3,508)	
	$ (4,071)	(3,523)	(3,522)	Total before tax (b)
	981	1,244	1,305	Tax benefit
	$ (3,090)	$ (2,279)	$ (2,217)	Net of tax
Gains and losses on cash flow hedges:				
Interest rate contracts	**$ —**	$ —	$ (82)	Interest, net
Foreign exchange contracts	**10**	9	9	Cost of sales
	10	9	(73)	Total before tax
		—	28	Tax benefit
	$ 10	$ 9	$ (45)	Net of tax
Total reclassifications for the period	**$ (3,080)**	$ (2,270)	$ (2,262)	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

2018 Acquisition

On March 26, 2018, the Company, through a subsidiary in Mexico, acquired 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 large laboratory and office space. The acquired assets and business are included in the Company's Surfactants segment. The initial purchase price of the acquisition was $21,475,000 and was paid with cash on hand. The primary assets acquired were land, buildings, machinery and equipment and inventory. In the third quarter of 2018 the Company reached alignment with BASF on the final value of inventory acquired. The incremental inventory and related value-added taxes totaled $1,377,000 and increased the total assets acquired in the transaction from $21,475,000 to $22,852,000 as of December 31, 2018. The final inventory settlement payment of $1,377,000 was made in the fourth quarter of 2018. The acquisition was accounted for as a business combination, and, accordingly, the assets acquired were measured and recorded at their estimated fair values. No intangible assets were identified as part of the acquisition. The following table summarizes the assets acquired as a result of the acquisition:

(In thousands)		
Assets:		
Property, plant and equipment	$	14,464
Inventory		5,687
Other Receivable		2,701
Total assets acquired	$	22,852

The acquired business had a minimal impact on the Company's 2018 financial results. Pro forma financial information for 2017 and 2018 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, 2017.

2016 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:

(In thousands)		
Assets:		
Current assets	$	5,165
Property, plant and equipment		5,716
Identifiable intangible assets		7,354
Goodwill		14,207

Total assets acquired	$	32,442
Liabilities:		
Current liabilities	$	408
Deferred tax liability		3,079
Total liabilities assumed	$	3,487
Net assets acquired	$	28,955

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 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, 2016.

21. Revenue from Contracts with Customers

In the majority of instances the Company deems a contract with a customer to exist when a purchase order is received from a customer for a specified quantity of product or products and the Company acknowledges receipt of such purchase order. In some instances the Company has entered into manufacturing supply agreements with customers but these agreements typically do not bind a customer to any purchase volume requirements and thus an obligation is not created until the customer submits a purchase order to the Company. The Company's contracts typically have a single performance obligation that is satisfied at the time product is shipped and control passes to the customer. For a small portion of the business, performance obligations are deemed satisfied when product is delivered to a customer location. Revenue is recognized when performance obligations under terms of a contract with a customer have been satisfied, which is predominantly at a point in time. With the 2018 adoption of ASU 2014-09, revenue is currently recognized when a customer obtains control of a product as compared to the "risk and rewards" criteria used in prior years. However, in 2018, the adoption of ASU 2014-09 did not have a material impact on the Company's financial position or results of operations.

Payment terms on sales of product typically range from 30 to 60 days. As a result, the Company has concluded it does not provide any significant benefits of financing to its customers.

The Company has elected to account for shipping and handling as activities to fulfill a promise to transfer the good. As such, shipping and handling fees billed to customers in a sales transaction are recorded in Net Sales and shipping and handling costs incurred are recorded in Cost of Sales. The Company has elected to exclude from Net Sales any value added, sales and other taxes that it collects concurrently with revenue producing activities. These accounting policy elections are consistent with the manner in which the Company has historically recorded shipping and handling fees and taxes.

In some instances, a customer may qualify for a rebate based on the volume of purchases made over a specified period of time, typically a quarterly or annual period. The Company accrues these rebates for each customer under the most likely amount method by estimating the expected volume of total purchases for each customer using actual volumes, customer projections and historical order patterns. These estimated rebates are treated as a reduction to Net Sales with the offset being recognized within Current Liabilities. This methodology is consistent with the manner in which the Company has historically estimated and recorded volume based rebates. In other instances, discounts for early payments are offered to certain customers. These discounts are principally accrued for based the historical use of discounts for all customers using the expected-value method. These estimated early payment discounts are accounted for as a reduction to Net Sales similarly to volume rebates. These forms of variable consideration are considered part of the transaction price.

The Company typically warrants its products from defects. The Company has concluded that these represent assurance-type warranties as opposed to service-type warranties. Product defects are rare in occurrence. As a result, the Company does not maintain any warranty accruals until such time as it is probable a product defect exists.

As of December 31, 2018, the Company did not have any contract assets or contract liabilities. A contract liability would typically arise when an advance or deposit is received from a customer before the Company recognizes revenue. In practice, this is rare as it would require a customer to make a payment prior to a performance obligation being satisfied. If such a situation did arise the Company would maintain a deferred revenue liability until the time a performance obligation has been satisfied. The Company did not recognize any revenue in the current period from any pre-existing contract liability balance.

The tables below provide a geographic disaggregation of net sales for the years ended December 31, 2018, 2017 and 2016. The Company's business segmentation by geographic region most effectively captures the nature and economic characteristics of the Company's revenue streams impacted by economic factors.

	2018			
(In thousands)	Surfactants	Polymers	Specialty Products	Total
Geographic Market				
North America	**$ 831,592**	**$ 323,360**	**$ 68,201**	**$1,223,153**
Europe	**276,742**	**172,632**	**12,304**	**461,678**
Latin America	**212,824**	**3,463**	**—**	**216,287**
Asia	**64,774**	**27,965**	**—**	**92,739**
Total	**$1,385,932**	**$ 527,420**	**$ 80,505**	**$1,993,857**

	2017			
(In thousands)	Surfactants	Polymers	Specialty Products	Total
Geographic Market				
North America	$ 763,044	$ 329,629	$ 66,906	1,159,579
Europe	275,121	188,244	13,912	477,277
Latin America	190,802	4,451	—	195,253
Asia	68,588	24,310	—	92,898
Total	$1,297,555	$ 546,634	$ 80,818	$1,925,007

	2016			
(In thousands)	Surfactants	Polymers	Specialty Products	Total
Geographic Market				
North America	$ 724,619	$ 319,769	$ 69,701	1,114,089
Europe	237,489	153,986	16,076	407,551
Latin America	151,229	4,640	—	155,869
Asia	68,226	20,431	—	88,657
Total	$1,181,563	$ 498,826	$ 85,777	$1,766,166

22. Business Restructuring and Asset Impairments

2018 Restructuring

During the third quarter of 2018, the Company approved a plan to shut down Surfactants operations at its German plant site. As of December 31, 2018, the Company recognized restructuring costs of $1,404,000 comprised of asset and spare part write-downs. The shutdown decision was made in order to reduce the Company's fixed cost base, facilitate a refocusing of Surfactant resources on higher margin end markets and allow for select assets to be repurposed to support future polyol growth. Decommissioning expenses associated with the shutdown are expected to be incurred throughout 2019.

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 and 2018.

Decommissioning of the assets continued throughout 2018 and $1,185,000 of decommissioning expense was recognized in 2018. As of December 31, 2018, an aggregate of $6,024,000 of expense has been recognized since the beginning of the restructuring, reflecting $1,594,000 of termination benefits for approximately 30 employees and $4,430,000 for other expenses principally related to site decommissioning costs. Site decommissioning costs will continue to be incurred in 2019.

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

(In thousands)	Termination Benefits	Other Expense	Total
Restructuring liability at January 1, 2017	$ 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
Expense recognized	-	1,185	1,185
Amounts paid	(312)	(1,194)	(1,506)
Foreign currency translation	(20)	(7)	(27)
Restructuring liability at December 31, 2018	$ 260	$ 83	$ 343

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. 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 $15,119,000, $12,600,000, and $10,410,000 that were unpaid at December 31, 2018, 2017 and 2016, 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 2018 included 99,497 shares of Company common stock (valued at $7,931,000) issued in connection with the Company's stock award plan. 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 year ended December 31, 2016.

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

	2018				
Quarter	***First***	***Second***	***Third***	***Fourth***	***Year***
Net Sales	**$ 499,335**	**$ 519,866**	**$ 507,997**	**$ 466,659**	**$ 1,993,857**
Gross Profit	**89,570**	**89,280**	**84,125**	**78,528**	**341,503**
Operating Income	**39,655**	**44,685**	**27,694**	**39,385**	**151,419**
Interest, net	**(3,151)**	**(2,672)**	**(2,797)**	**(2,151)**	**(10,771)**
Income Before Income Taxes	**37,664**	**42,497**	**25,243**	**34,519**	**139,923**
Net Income	**30,716**	**32,923**	**22,168**	**26,943**	**112,750**
Net Income Attributable to Stepan Company	**30,723**	**32,925**	**22,168**	**26,946**	**112,762**
Per Diluted Share	**1.31**	**1.41**	**0.95**	**1.16**	**4.83**

	2017				
Quarter	*First*	*Second*	*Third*	*Fourth*	*Year*
Net Sales	$ 468,269	$ 495,101	$ 487,814	$ 473,823	$ 1,925,007
Gross Profit (a)	92,119	89,988	75,576	80,839	338,522
Operating Income (a)	46,230	39,133	30,434	31,398	147,195
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

(a) The 2017 gross profit and operating income line items have been immaterially changed from the amounts originally reported as a result of the Company's first quarter 2018 adoption of ASU No. 2017-7, *Compensation –Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost*.

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, 2018. 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, 2018, 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, 2018. 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, 2018, 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, 2018, 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, 2018, 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, 2018, of the Company and our report dated February 27, 2019, 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, 2019

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, 2018, that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART III

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 30, 2019, 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 30, 2019, 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 30, 2019, 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 30, 2019, 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 30, 2019, 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 30, 2019, 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 30, 2019, 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 30, 2019, 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 30, 2019, 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	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)
3.2	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)
10.1	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)
10.2*+	Stepan Company Supplemental Profit Sharing Plan (Restated Effective as of January 1, 1994)
10.3*+	First Amendment, dated February 14, 2006, of the Stepan Company Supplemental Profit Sharing Plan (as Amended and Restated Effective January 1, 1994)
10.4*+	Second Amendment, dated November 13, 2008, of the Stepan Company Supplemental Profit Sharing Plan (as Amended and Restated Effective January 1, 1994)
10.5+	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)
10.6+	Form of 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)
10.7+	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)
10.8+	Form of 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)
10.9	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)
10.10+	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)
10.11+	Form of Stock Appreciation Rights 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)

Exhibit No.	Description
10.12+	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)
10.13+	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)
10.14+	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)
10.15+	First Amendment to the Stepan Company 2011 Incentive Compensation Plan (filed with the Company's Annual Report on Form 10-K for the year ended December 31, 2017 (File No. 001-4462), and incorporated herein by reference)
10.16+	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, 2017 (File No. 001-4462), and incorporated herein by reference
10.17+	Form of Performance Grant 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, 2017 (File No. 001-4462), and incorporated herein by reference)
10.18+	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, 2017 (File No. 001-4462), and incorporated herein by reference
10.19+	Form of Stock Awards 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, 2017 (File No. 001-4462), and incorporated herein by reference
10.20+	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)
10.21*	Stepan Company Directors Deferred Compensation Plan amended and restated as of January 1, 2012
10.22+	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)
10.23+	Separation Agreement and Release, dated 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)
10.24+	Separation Agreement and Release, dated as of September 16, 2018, by and between Stepan Company and Jennifer Ansbro Hale (filed with the Company's Current Report on Form 8-K filed on September 20, 2018 (File No. 01-4462) and incorporated herein by reference)
10.25	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)
10.26	First Supplement, dated as of June 1, 2010, to Note Purchase Agreement dated as of September 29, 2005, 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)

Exhibit No.	Description
10.27	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)
10.28	Second Supplement, dated as of November 1, 2011, to Note Purchase Agreement dated as of September 29, 2005, 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)
10.29	Second Amendment, dated as of April 23, 2014, to Note Purchase Agreement dated as of September 29, 2005 (filed with the Company's Annual Report on Form 10-K for the year ended December 31, 2017 (File No. 001-4462), and incorporated herein by reference
10.30	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)
10.31	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)
10.32	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)
10.33	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)
10.34	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)
10.35	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 & 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)
21*	Subsidiaries of Registrant at December 31, 2018
23*	Consent of Independent Registered Public Accounting Firm
24*	Power of Attorney
31.1*	Certification of President and Chief Executive Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.2*	Certification of Chief Financial Officer (Principal Financial Officer) to Section 302 of the Sarbanes-Oxley Act of 2002
32*	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
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	XBRL Taxonomy Extension Definition Document
101.LAB	XBRL Taxonomy Extension Label Linkbase Document

Exhibit No.	Description
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/ Luis E. Rojo
Luis E. Rojo
Vice President and Chief Financial Officer

February 27, 2019

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.

/s/ F. Quinn Stepan, Jr. F. Quinn Stepan, Jr.	Chairman, President and Chief Executive Officer (Principal Executive Officer)	February 27, 2019
/s/ Luis E. Rojo Luis E. Rojo	Vice President and Chief Financial Officer (Principal Financial and Accounting Officer)	February 27, 2019
/s/ Michael R. Boyce Michael R. Boyce	Director	February 27, 2019
/s/ Randall S. Dearth Randall S. Dearth	Director	February 27, 2019
/s/ Joaquin Delgado Joaquin Delgado	Director	February 27, 2019
/s/ Gregory E. Lawton Gregory E. Lawton	Director	February 27, 2019
/s/ Jan Stern Reed Jan Stern Reed	Director	February 27, 2019
/s/ F. Quinn Stepan F. Quinn Stepan	Director	February 27, 2019
/s/ Edward J. Wehmer Edward J. Wehmer	Director	February 27, 2019

Luis E. Rojo, 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, 2019

/s/ Luis E. Rojo
Luis E. Rojo

Exhibit 10.2

Stepan Company Supplemental Profit Sharing Plan

(Restated Effective as of January 1, 1994)

Stepan Company Supplemental Profit Sharing Plan
(Restated Effective as of January 1, 1994)

Contents

Stepan Company Supplemental Profit Sharing Plan
(Restated Effective as of January 1, 1994)

Contents

Article I. The Plan

1.1 Establishment and Amendment of the Plan

Stepan Company, a Delaware corporation, hereby establishes a supplemental profit sharing plan for the benefit of certain of its Employees, effective as of January l, 1994, known as the "Stepan Company Supplemental Profit Sharing Plan."

1.2 Applicability of Plan

The provisions of this Plan as set forth herein are applicable only to the Employees of a Company in current employment on or after January 1, 1994.

1.3 Purpose of the Plan

The purpose of the Plan is to enable Participants to receive profit sharing benefits to which such Participants would have been entitled under the Stepan Company Profit Sharing Plan but for the limitations of sections 401(a)(17) and 415 of the Internal Revenue Code.

1.4 Nonqualified Plan

This Plan is intended to be an unfunded deferred compensation plan for a select group of highly compensated Employees and is not intended to be a qualified plan under section 401(a) of the Internal Revenue Code. All benefits payable hereunder shall be paid from the general assets of the Company, and Members and Beneficiaries shall not have any greater rights to such assets than other general creditors of the Company.

Article II. Definitions

2.1 Definitions

Whenever used in the Plan, the following terms shall have the respective meanings set forth below unless otherwise expressly provided herein, and when the defined meaning is intended the term is capitalized.

(a) "**Account**" means the separate bookkeeping account maintained for each Member which represents the Member's total credits under the Plan as of any Valuation Date.

(b) "**Act**" means the Employee Retirement Income Security Act of 1974, as it may be amended from time to time.

(c) "**Beneficiary**" means a Beneficiary as described in section 4.5.

(d). "**Board**" means the Board of Directors of the Company.

(e) "**Change in Control**" shall be deemed to exist when either of the following events will have occurred:

(1) A third person, including a "group" as defined in section 13(d)(3) of the Securities Exchange Act of 1934, acquires shares of capital stock of the Company having 25 percent or more of the total number of votes that may be cast for the election of directors of the Company; or

(2) As a result of any tender or exchange offer, merger, or other business combination, sale of assets or contested election, or any combination of the foregoing transactions, the persons who were directors of the Company before the transaction shall during any two consecutive years thereafter cease to constitute a majority of the Board.

(f) "**Code**" means the Internal Revenue Code of 1986, as it may be amended from time to time.

(g) "**Committee**" means the person or persons appointed to administer the Plan as described in section 5.2.

(h) "**Effective Date**" means January 1, 1994.

(i) "**Employee**" means any person who is employed by the Company.

(j) "**Member**" means a Participant, or a former Participant who still has an Account balance in the Plan.

(k) "**Participant**" means any Employee of a Company who has met and continues to meet the eligibility requirements of the Plan as set forth in section 3.1.

(1) "**Plan**" means the Stepan Company Supplemental Profit Sharing Plan, as provided herein and as subsequently amended from time to time.

(m) "**Plan Administrator**" means the Company.

(n) "**Plan Year**" means the 12-consecutive-month period ending each December 31.

(o) "**Qualified Plan**" means the Stepan Company Profit Sharing Plan, as amended from time to time.

(p) "**Valuation Date**" means the last business day of each calendar quarter, and such other dates as determined by the Company pursuant to a nondiscriminatory policy.

2.2 Gender and Number

Unless the context clearly requires otherwise, the masculine pronoun whenever used shall include the feminine and neuter pronoun, and the singular shall include the plural.

Article III. Participation and Service

3.1 Participation

A salaried Employee of the Company shall become a Participant in the Plan as of the first day he becomes both (a) a Company officer, a departmental vice president, and (b) a Participant in the Qualified Plan.

3.2 Duration of Participation

A Participant shall continue to be a Participant until the Participant terminates employment with the Company; thereafter, the Participant shall be a Member for as long as the Participant has an Account balance in the Plan.

Article IV. Supplemental Profit Sharing Benefit

4.1 Supplemental Benefit

For each Plan Year in which an Employee is a Participant, the Company will credit to each Participant's Account an amount equal to (a) minus (b) where—

(a) is the amount which would have been credited to the Member's account under the Qualified Plan from employer contributions for such Year had the amounts not been limited by sections 415 and 401(a)(17) of the Code; and

(b) is the amount which actually is credited to the Member's account under the Qualified Plan.

4.2 Discretionary Benefits

The Board (or its delegate) shall have the authority to provide any discretionary supplementary or additional benefit pursuant to the Plan to a Member at any time after the Member ceases to be an Employee.

4.2 Vesting of Accounts

Each Member shall at all times be fully vested in such Member's Account.

4.3 Earnings on Account

A Member's Account under this Article IV will be credited with the same rate(s) of earnings as are Company contributions under the Qualified Plan.

The Company shall not be required to direct that any amount credited to a Member's Account actually be invested in the same funds as Company contributions under the Qualified Plan. Rather, such accruals shall be tracked as bookkeeping accounts, as if the investments corresponding to those made by each Member under the Qualified Plan were actually made under this Plan, at the same time, and in the same proportionate amounts as elected under the Qualified Plan.

The administration of such accruals under this Plan shall be the responsibility of the Committee or its designate, and shall be conducted according to such rules, procedures, and determinations as the Committee (or the Committee's designate), at its sole discretion, deems appropriate. Members and their beneficiaries shall have no right to direct the actual investment of any funds subject to this Plan.

4.4 Form and Timing of Benefit Payments

Benefit payments under this Article IV shall be payable in the same form, and at the same time, as the corresponding tax-qualified contributions payable to the Member under the Qualified Plan; provided, however, that the Committee shall have the authority, at its sole discretion, to accelerate the payout of such benefit payments upon (a) the termination of a Member's employment or (b) upon a Change in Control; and further provided, that a Member may request that the Committee permit distribution in a form other than that provided in the Qualified Plan. The Committee, in its sole discretion, shall determine whether to allow such alternate form of distribution and the terms under which such alternate form of distribution may be made.

4.5 Beneficiary

Each Member shall be entitled to designate one or more beneficiaries of the Member under this Plan. Such beneficiary may or may not be the same as those named by the Member under the Qualified Plan. All designations shall be signed by the Member and shall be in such form as prescribed by the Committee or its designate. Each designation shall be effective as of the date received by the Company.

Members may change their designations of beneficiary on such form as prescribed by the Committee or its designate. The payment of account balances under the Plan shall be in accordance with the last unrevoked written designation of beneficiary that has been signed by the Member and delivered by the Member to the Company prior to the Member's death.

In the event that all the beneficiaries named by a Member pursuant to this section 4.5 predecease the Member, the amounts that would have been paid to the Member or the Member's beneficiaries under this Plan shall be paid to the Member's estate.

In the event a Member does not designate a beneficiary, or for any reason such designation is ineffective, in whole or in part, the amounts that otherwise would have been paid to the Member or the Member's beneficiaries under the Plan shall be paid to the Member's estate.

4.6 Accounts

The Company shall establish and maintain separate individual bookkeeping accounts for Company benefits accrued hereunder and earnings accruals corresponding to such Company credits attributable to the Member pursuant to section 4.1 herein. Such accounts shall be administered according to such rules and procedures as the Committee (or its designate), at is sole discretion, deems appropriate.

4.7 Withholding Taxes

A Company may withhold from a Member's compensation and from any payment under this Plan any taxes required to be withheld with respect to contributions or benefits under this Plan.

Article V. Administration

5.1 Plan Administrator

The Company shall be the Plan Administrator, responsible for the general administration of the Plan and for carrying out the provisions thereat except to the extent that such responsibility has been allocated or delegated in or pursuant to any other provision hereof or by action of the Board of the Company.

5.2 Plan Committee

The authority to control and manage the operation and administration of the Plan is vested in an administrative Committee. The Committee shall consist of one or more individual members as the Board may appoint from time to time. Any member of the Committee may resign by delivering his written resignation 30 days in advance to the Board and other Committee members. The Company may at any time, by resolution of its Board, appoint a successor member or remove and replace a member of such Committee, with or without cause. If there are no members of the Committee, the Board shall constitute the Committee.

5.3 Compensation and Expenses

A member of the Committee shall serve without compensation for services as such if he is receiving full-time pay from the Company (or other employer affiliated with the Company) as an Employee. Any other member of the Committee may receive reasonable compensation for services as a member, to be paid by the Company. Any member of the Committee may receive reimbursement by the Company of reasonable expenses properly and actually incurred in the performance of a Committee function.

5.4 Manner of Action

A majority of the members of the Committee at the time in office shall constitute a quorum for the transaction of business. All resolutions adopted and other actions taken by the Committee at any meeting shall be by a majority vote of those present at any such meeting. Upon the concurrence in writing of a majority of the members at the time in office, action of the Committee may be taken otherwise than at a meeting.

5.5 Employment of Specialists

The Committee may authorize one or more of their number or any agent to execute or deliver any instrument, instruments, or direction on their behalf, and may employ such counsel, auditors, and other specialists, and such clerical, actuarial, and other services as they may require in carrying out the provisions of the Plan. Such expenses shall be paid by the Company.

5.6 Allocation and Delegation of Committee Responsibilities and Powers

In exercising its authority to control and manage the operation and administration of the Plan, the Committee may allocate all or any part of its responsibilities and powers to any one or more of its members and may delegate all or any part of its responsibilities and powers to any person or persons selected by it. Any such allocation or delegation and the acceptance thereof by the Committee member or delegate shall be in writing and may be revoked at any time.

5.7 Records
All resolutions, proceedings, acts, and determinations of the Committee shall be recorded, and all such records, together with such documents and instruments as may be necessary for the administration of the Plan, shall be preserved.

5.8 Rules
Subject to the limitations contained in the Plan, the Committee shall be empowered from time to time in its discretion to adopt bylaws and establish rules for the conduct of its affairs and the exercise of the duties imposed upon it under the Plan.

5.9 Administration
The Committee shall be responsible for the administration of the Plan. The Committee shall have all such powers as may be necessary or appropriate to carry out the provisions hereof and may, from time to time, establish rules for the administration of the Plan and the transaction of the Plan's business. In making any such determination or rule, the Committee shall pursue uniform policies as from time to time established by the Committee and shall not discriminate in favor of or against any Member. The Committee shall have the exclusive and absolute discretion to make any finding of fact necessary or appropriate for any purpose under the Plan including, but not limited to, the determination of the eligibility for and the amount of any benefit payable under the Plan. The Committee shall have the exclusive and absolute discretion to interpret the terms and provisions of the Plan and to determine any and all questions arising under the Plan or in connection with the administration thereof including, without limitation, the right to remedy or resolve possible ambiguities, inconsistencies, or omissions, by general rule or particular decision. All findings of fact, determinations, interpretations, and decisions of the Committee shall be final, conclusive, and binding upon all persons having or claiming to have any interest or right under the Plan.

5.10 Accounts and Records
The Accounts and records of the Plan shall be maintained by the Committee and shall accurately disclose the status of the Accounts of each Member or each Member's beneficiary in the Plan.

Each Member shall be advised from time to time, at least once annually during each Plan Year, as to the status of the Member's Account.

5.11 No Enlargement of Employee Rights
Nothing contained in the Plan shall be deemed to give any Employee the right to be retained in the service of a Company or to interfere with the right of the Company to discharge or retire any Employee at any time.

5.12 Appeals from Denial of Claims
If any claim for benefits under the Plan is wholly or partially denied, the claimant shall be given notice in writing within a reasonable period of time after receipt of the claim by the Plan (not to exceed 90 days after receipt of the claim or, if special circumstances require an extension of time, written notice of the extension shall be furnished to the claimant and an additional 90 days will be considered reasonable) by registered or certified mail of such denial, written in a manner calculated to be understood by the claimant, setting forth the following information:

(a) the specific reasons for such denial;
(b) specific reference to pertinent Plan provisions on which the denial is based;
(c) a description of any additional material or information necessary for the claimant to perfect the claim and an explanation of why such material or information is necessary; and
(d) an explanation of the Plan's claim review procedure.

The claimant also shall be advised that he or his duly authorized representative may request a review by the Committee of the decision denying the claim by filing with the Committee, within 60 days after such notice has been received by the claimant, a written request for such review, and that he may review pertinent documents, and submit issues and comments in writing within the same 60-day period. If such request is so filed, such review shall be made by the Committee within 60 days after receipt of such request, unless special circumstances require an extension of time for processing, in which case the claimant shall be so notified and a decision shall be rendered as soon as possible, but not later than 120 days after receipt of the request for review. The Member or Beneficiary shall be given written notice of the decision resulting from such review, which notice shall include specific reasons for the decision, written in a manner calculated to be understood by the claimant, and specific references to the pertinent Plan provisions on which the decision is based.

5.13 Notice of Address and Missing Persons

Each person entitled to benefits under the Plan must file with the Committee, in writing, his post office address and each change of post office address. Any communication, statement, or notice addressed to such a person at his latest reported post office address will be binding upon him for all purposes of the Plan and neither the Plan Administrator, the Committee, nor the Company shall be obliged to search for or ascertain his whereabouts. In the event that such person cannot be located, the Committee may direct that payment of such benefit with respect to such person shall be discontinued and all liability for the payment thereof shall terminate; provided, however, that in the event of the subsequent reappearance of the Member or Beneficiary prior to termination of the Plan, the benefits shall be paid in accordance with Article IV.

5.14 Data and Information for Benefits

The Company shall furnish to the Committee such data and information as may be required. The records of the Company as to a Participant's period of employment, termination of employment and reasons therefor, leave of absence, reemployment, and Compensation shall be presumed to be accurate unless determined to be incorrect. All persons claiming benefits under the Plan must furnish to the Committee or its designated agent such documents, evidence, or information as the Committee or its designated agent consider necessary or desirable for the purpose of administering the Plan; and such person must furnish such information promptly and sign such documents as the Committee or its designated agent may require before any benefits become payable under the Plan.

5.15 Indemnity for Liability

The Committee and the individual members thereof and any employees to whom the Committee has delegated responsibility in accordance with section 5.6 shall be indemnified by the Company against any and all liabilities, losses, costs, and expenses (including legal fees and expenses) of whatsoever kind and nature which may be imposed on, incurred by, or asserted against the

Committee, its members, or such Employees by reason of the performance of a Committee function if the Committee, such members, or Employees did not act dishonestly or in willful violation of the law or regulation under which such liability, loss, cost, or expense arises.

5.16 Effect of a Mistake

In the event of a mistake or misstatement as to the eligibility, participation, or service of any Member, or the amount of payments made or to be made to a Member or Beneficiary, the Committee shall, if possible, cause to be withheld or accelerated or otherwise make adjustment of such amounts of payments as will in its sole judgment result in the Member or Beneficiary receiving the proper amount of payments under this Plan.

5.17 Self Interest

A member of the Committee who is also a Member shall not vote on any question relating specifically to himself.

Article VI. Miscellaneous

6.1 Amendment and Termination

(a) The Company does hereby expressly and specifically reserve the sole and exclusive right at any time by action of the Board to amend, modify, or terminate the Plan.

(b) While the Company contemplates carrying out the provisions of the Plan indefinitely with respect to its Employees, the Company shall not be under any obligation or liability whatsoever to maintain the Plan for any minimum or other period of time.

6.2 Incompetency

Every person receiving or claiming benefits under the Plan shall be conclusively presumed to be mentally competent and of age until the Committee receives written notice, in a form and manner acceptable to it, that such person is incompetent or a minor, and that a guardian, conservator, or other person legally vested with the care of such person's estate has been appointed. In the event that the Committee finds that any person to whom a benefit is payable under the Plan is unable to properly care for such person's affairs, or is a minor, then any payment due (unless a prior claim therefor shall have been made by a duly appointed legal representative) may be paid to the spouse, a child, a parent, a brother, or a sister, or to any person deemed by the Committee to have incurred expense for such person otherwise entitled to payment.

In the event a guardian or conservator of the estate of any person receiving or claiming benefits under the Plan shall be appointed by a court of competent jurisdiction, payments shall be made to such guardian or conservator, provided that proper proof of appointment is furnished in a form and manner suitable to the Committee.

To the extent permitted by law, any payment made under the provisions of this section 6.2 shall be a complete discharge of liability under the Plan.

6.3 Nonalienation

The benefits payable at any time under the Plan shall not be subject in any manner to alienation, sale, transfer, assignment, pledge, attachment, garnishment, or encumbrance of any kind. Any attempt to alienate, sell, transfer, assign, pledge, or otherwise encumber any such benefit, whether presently or thereafter payable, shall be void. No benefit shall in any manner be liable for or subject to the debts or liabilities of any Member or of any other person entitled to any benefit.

6.4 Applicable Law

The Plan and all rights hereunder shall be governed by and construed in accordance with the laws of the State of Illinois to the extent such laws have not been preempted by applicable federal law.

6.5 Severability

If a provision of this Plan shall be held illegal or invalid, the illegality or invalidity shall not affect the remaining parts of the Plan and the Plan shall be construed and enforced as if the illegal or invalid provision had not been included in this Plan.

6.6 Notice
Any notice or filing required or permitted to be given to the Company under the Plan shall be sufficient if in writing and hand delivered, or sent by registered or certified mail to the Corporate Secretary of the Company. Notice to the Corporate Secretary of the Company, if mailed, shall be addressed to the principal executive offices of the Company. Notice mailed to a Participant shall be at such address as is given in the records of the Company. Notices shall be deemed given as of the date of delivery or, if delivery is made by mail, as of the date shown on the postmark on the receipt for registration or certification.

6.7 Costs of the Plan
All costs of implementing and administering the Plan shall be borne by the Company.

6.8 Successors
All obligations of the Company under the Plan shall be binding on any successor to the Company, whether the existence of such successor is the result of a direct or indirect purchase, merger, consolidation, or otherwise, of all or substantially all of the business and/or assets of the Company.

6.9 Source of Payments
This Plan is unfunded, and the Company will make Plan benefit payments solely on a current disbursement basis.

6.10 Counterparts
This Plan has been established by the Company and may be executed in any number of counterparts, each of which shall be considered as the original, and no requirements to produce another counterpart shall exist.

* * * * * * * * * *

In Witness Whereof, Stepan Company has caused this instrument to be executed by its duly authorized officers effective as of January 1, 1994.

Stepan Company

By /s/ Jeffrey W. Bartlett
Its Secretary & General Counsel

Attest:

By /s/ Dianna F. Gullott
Its Benefits Supervisor

Exhibit 10.3

FIRST AMENDMENT OFTHE
STEPAN COMPANY SUPPLEMENTAL PROFIT SHARING PLAN
(As Amended and Restated Effective January 1, 1994)

WHEREAS, Stepan Company (the "Company") has established and maintains the Stepan Company Supplemental Profit Sharing Plan, as amended and restated effective January 1, 1994, (the "Plan"); and

WHEREAS, the Company also maintains the Stepan Company Profit Sharing Plan and the Stepan Company Income Savings Plan (the "Qualified Plans"); and

WHEREAS, the Company reserved the right to amend the Plan in Section 6.l(a) by action of the Board of Directors; and

WHEREAS, the Company now desires to amend the Plan in conjunction with similar amendments made to the Qualified Plans; and

WHEREAS, the Company has delegated such authority to the undersigned officer of the Company;

NOW, THEREFORE, BE IT RESOLVED , that the Plan is amended in the following particulars as of the dates set forth herein:

1. Effective January 1, 2006, Section 1.1 of the Plan is hereby amended by adding the following sentence thereto:

"As used in this Plan, the term 'Company' means Stepan Company."

2. Effective July 1, 2006, the following sentence is added to Section 2.1(a) of the Plan:

"Effective July 1, 2006, a Member's Account will be divided into two sub-accounts, Sub Account A and Sub-Account B. Sub-Account A will consist of such Member's Account balance at June 30, 2006 together with credits by the Company under Section 4.1 attributable to Company contributions to the Stepan Corporation Profit Sharing Plan, and earnings (pursuant to Section 4.3) on such credits. Sub-Account B will consist of credits by the Company under Section 4.1 attributable to Company contributions to the Stepan Corporation Income Savings Plan, and earnings (pursuant to Section 4.3) on such credits."

3. Effective July 1, 2006, the following sentence is added to Section 2.l(o) of the Plan:

"Effective July 1, 2006, 'Qualified Plan' will also mean the Stepan Company Income Savings Plan, as amended from time to time."

4. Effective January 1, 2006, Section 3.1 of the Plan is amended by substituting "a Company officer or a departmental vice president" for "a Company officer, a departmental vice president" therein.

5. Effective July 1, 2006, the following sentences are added to Section 4.1 of the Plan:

"Effective July 1, 2006:

(1) For purposes of (a) above, 'employer contributions' will not include any salary reduction contributions by such Member to the Qualified Plan pursuant to Section 401(k)(2)(A) of the Code; and

(2) For purposes of (b) above, amounts actually credited to such Member's account under the Qualified Plan will not include any such salary reduction contributions.

The term 'account' for purposes of this Section 4.1 will mean all of a Member's accounts under the Qualified Plan in the aggregate, excluding any account attributable to such Member's salary reduction contributions to the Qualified Plan pursuant to Section 401(k)(2)(A) of the Code."

6. Effective July 1, 2006, the following sentences are added to Section 4.2 of the Plan:

"Effective July 1, 2006, notwithstanding the preceding sentence, each Member will be vested in his Sub-Account A at the same time as he was or is vested in his account under the Stepan Company Profit Sharing Plan and will be immediately vested in his Sub-Account B."

7. Effective July 1, 2006, the following sentence is added to Section 4.3 of the Plan following the first sentence thereof:

"Notwithstanding the preceding sentence, if and when the Company makes a contribution to the Stepan Company Income Savings Plan on behalf of a person who is also a Participant in this Plan (other than a salary reduction contribution on behalf of such person pursuant to Section 401(k) of the Code), as to such Participant the term 'Company contributions under the Qualified Plan' will mean contributions by the Company to the Stepan Company Income Savings Plan (other than salary reduction contributions pursuant to Section 401(k)(2)(A) of the Code)."

8. Effective July 1, 2006, Section 4.4 of the Plan is hereby deleted and the following is substituted in its place:

"4.4 Form and Timing of Benefit Payments

Benefit payments under this Article IV attributable to (i) his Sub-Account A (if vested) and (ii) his Sub-Account B will be payable in a lump sum at the time a Member terminates his employment; provided, however, that:

(a) The Committee will have the authority, in its sole discretion, to accelerate the payment of such benefit payments upon a Change in Control; and

(b) A member may request that the Committee permit distribution in a form other than a lump sum, and the Committee, in its sole discretion, will determine whether to allow such alternate form of distribution and the terms under which such alternate form of distribution may be paid."

IN WITNESS WHEREOF, the duly authorized officer of the Company has executed this First Amendment of the Plan on behalf of the Company and has caused its corporate seal to be affixed this 14th day of February, 2006.

STEPAN COMPANY

By /s/ F. Quinn Stepan
Title Chairman

ATTEST:

By /s/ Janet A. Catlett
Compensation & Benefits Manager

Exhibit 10.4

SECOND AMENDMENT OFTHE
STEPAN COMPANY SUPPLEMENTAL PROFIT SHARING PLAN
(As Amended and Restated Effective January 1, 1994)

WHEREAS, Stepan Company (the "Company") has established and maintains the Stepan Company Supplemental Profit Sharing Plan, as amended and restated effective January 1, 1994, as heretofore amended (the "Plan"); and

WHEREAS, the Company reserved the right to amend the Plan in Section 6.l(a) by action of the Board of Directors; and

WHEREAS, the Company now desires to amend the Plan to comply with Section 409A of the Internal Revenue Code;

NOW, THEREFORE, BE IT RESOLVED, that effective January 1, 2005, the Plan is amended as follows:

1. 1. Section 2.1 of the Plan is hereby amended by adding after Section 2.1(b) the following new definition:

"(b)A **"Affiliate"** means any corporation, partnership, joint venture, trust, association or other business enterprise which is a member of the same controlled group of corporations, trades or businesses as the Company within the meaning of Code Section 414(b) or (c); provided, however, that for purposes only of the term "Affiliate" when used in the definition of "Separation from Service" below, in applying Code Section l 563(a)(l), (2), and (3) in determining a controlled group of corporations under Code Section 414(b), the language "at least 50 percent" shall be used instead of "at least 80 percent" each place it appears in Code Section 1563(a)(l), (2), and (3), and in applying Treasury Reg.§ l.414(c)-2 for purposes of determining trades or businesses (whether or not incorporated) that are under common control for purposes of Code Section 414(c), "at least 50 percent" shall be used instead of "at least 80 percent" each place it appears in Treasury Reg. § 1.414(c)-2."

2. Section 2.1(e) of the Plan is hereby amended in its entirety so that as amended, Section 2.1(e) shall read as follows:

"(e) **"Change in Control"** shall be deemed to exist on the date on which either of the following events will have occurred:

(1) A third person, including a "group" as defined in Section 13(d)(3) of the Securities Act of 1934, acquires (or has acquired during the 12-month period ending on the date of the most recent acquisition by such person or persons)

shares of capital stock of the Company having 30 percent or more of the total voting power of the Company; or

(2) As a result of any tender or exchange offer, merger, or other business combination, sale of assets or contested election, or any combination of the foregoing transactions, a majority of members of the Board is replaced during a twelve-month period by directors whose appointment or election is not endorsed by a majority of the members of the Board prior to such appointment or election."

3. Section 2.1 of the Plan is hereby amended by adding after Section 2.l(o) the following two new definitions:

"(o)A **"Separation from Service"** means in respect of a Member, a "separation from service" within the meaning of Code Section 409A and the regulations issued thereunder, including a termination of employment with the Company and all its Affiliates due to retirement, death, or other reason. For purposes of applying the definition of "separation from service" under Section 409A, if the Member is on a bona fide leave of absence due to any medically determinable physical or medical impairment that can be expected to result in death or can be expected to last for a continuous period of not less than six months, where such impairment causes the Member to be unable to perform the duties of his or her position of employment or any substantially similar position of employment, a Separation from Service shall be deemed to occur after the expiration of 29 months of sick leave unless the Member retains the right to reemployment under an applicable statute or by contract."

"(o)B **"Specified Employees"** means, during the 12-month period beginning on April 1st of 2005 or of any subsequent calendar year, an employee of the Company or its Affiliates who met the requirements of Section 416(i)(l)(A)(i), (ii) or (iii) of the Code (applied in accordance with the regulations promulgated thereunder and without regard to Code Section 416(i)(5)) for being a "key employee" at any time during the 12-month period ending on the December 31st immediately preceding such April 1st. Notwithstanding the foregoing, a Member who otherwise would be a Specified Employee under the preceding sentence shall not be a Specified Employee for purposes of the Plan unless, as of the date of the Member's Separation from Service, stock of the Company or an Affiliate is publicly traded on an established securities market or otherwise."

4. Section 4.4 of the Plan is hereby amended in its entirely so that as amended, Section 4.4 shall read as follows:

"4.4 Form and Timing of Benefit Payments.

Benefits payable under this Article IV attributable to (i) the Member;s Sub-Account A (if vested) and (ii) the Member's Sub-Account B shall be payable in a lump sum within 90 days following the earlier to occur of: (a) the Member's Separation from Service, or (b) a

Change in Control. The actual date of payment within such 90-day period shall be determined by the Company in its sole discretion, and neither the Member nor his or her Beneficiary shall have the right to designate the taxable year of payment. Notwithstanding the foregoing, if payment to a Member is made on account of the Member's Separation from Service and the Member is a Specified Employee as of the date of Separation from Service, then any amount that is payable to the Member shall be paid instead to the Member in a lump sum on the earlier of (x) the first day of the seventh month following the Member's Separation from Service and (y) the date of the Member's death."

5. Section 4.7 of the Plan is hereby amended by adding a new sentence at the end thereof as follows:

"Notwithstanding any other provision of the Plan, the Company does not guarantee any particular tax result for any Member or Beneficiary with respect to participation in or payments under the Plan, and each Member or Beneficiary shall be responsible for any taxes imposed on the Member or Beneficiary with respect to such participation or payments under the Plan."

6. Article VI of the Plan is hereby amended by adding after Section 6.10 two new sections as follows:

"6.11 Section 409A of the Code

It is intended that the Plan (including any amendments thereto) comply with the provisions of Section 409A of the Code so as to prevent the inclusion in gross income of any amounts accrued hereunder in a taxable year that is prior to the taxable year or years in which such amounts would otherwise be actually distributed or made available to the Members. The Plan shall be interpreted, construed and administered in a manner that will comply with Section 409A of the Code, including proposed, temporary or final regulations or any other guidance issued by the Secretary of the Treasury and the Internal Revenue Service with respect thereto."

"6.12 Timing of Payments

Notwithstanding any provision of the Plan to the contrary, if calculation of the amount of a payment is not administratively practicable due to events beyond the control of the Member or his or her Beneficiary or if making of a payment would jeopardize the ability of the Company to continue as a going concern, a payment will be treated as made on the specified date or in the specified period for purposes of the Plan if the payment is made during the first calendar year in which the calculation of the amount of the payment is administratively practicable or in which the making of the payment would not have such effect on the Company, as the case may be. In addition, payments of a Member's account may be delayed or accelerated by the Company upon events and conditions as may be provided under Code Section 409A and any regulations or other guidance issued thereunder."

IN WITNESS WHEREOF, the duly authorized officer of the Company has executed this Second Amendment of the Plan on behalf of the Company and has caused its corporate seal to be affixed this 13th day of November, 2008.

STEPAN COMPANY

By /s/ Greg Servatius
Its Vice President, Human Resources

ATTEST:

By /s/ H. Edward Wynn
Its Vice President, General Counsel and Secretary

Exhibit 10.21

STEPAN COMPANY
DIRECTORS DEFERRED COMPENSATION PLAN
AMENDED AND RESTATED AS OF JANUARY 1, 2012

1. Name of Plan, History, and Effective Date of Amendment and Restatement:

   a. *Name of Plan.* This Plan shall be known as the Directors Deferred Compensation Plan (the "Plan").

   b. *History.* Stepan Company, a Delaware corporation (the "Company"), previously established this Directors Deferred Compensation Plan. The Plan was previously amended and restated as of November 3, 1992 and January 1, 2005, and further amended effective as of February 14, 2006.

   c. *Effective Date of this Amendment and Restatement.* The following provisions shall constitute an amendment, restatement and continuation of the Plan as previously amended and as in effect immediately prior to January 1, 2012, the Effective Date of the Plan as set forth herein.

2. <u>Purpose of the Plan</u>: The purpose of the Plan is to allow non-employee members of the Board of Directors of the Company (the "Board") the option of deferring some or all of their director's compensation and their director's stock award granted under the Stepan Company 2011 Incentive Compensation Plan, or any subsequent, replacement, or substituted version of such plan.

3. <u>Administration</u>: The authority to control the operation and administration of the Plan shall be vested in the Board, which shall have full authority to interpret the Plan, to determine all claims for benefits under the Plan, to decide all questions arising under the Plan, to prescribe, amend, and rescind rules and regulations pertaining to the Plan, and to make other determinations necessary or advisable for the administration of the Plan. Any interpretation of the Plan and any decision on any matter within the discretion of the Board that is made by the Board, in good faith, is final and binding on all persons.

4. <u>Participation</u>:Any non-employee director is eligible to participate in the Plan by executing and returning to the Company Secretary or his designee, a signed copy of a Deferral Election Form, as required under Section 6(a), or a Stock Award Deferral Election Form, as required under Section 8(a).

5. <u>Company Acceptance</u>: The President or any officer of the Company or his designee is authorized to accept, on behalf of the Company, a Deferral Election Form and a Stock Award Deferral Election Form.

6. <u>Deferrals of Director Compensation</u>:

   a. Upon signing a Deferral Election Form and at the participating director's election made prior to the beginning of the year for which compensation of the participating director is earned, such compensation shall be deferred. The participating director's compensation that has been deferred under this Plan shall be credited quarterly to a Deferred Compensation Account maintained in his name.

b. Investment Options. At such time as he signs his Deferral Election Form, a participating director shall elect to have his Deferred Compensation Account credited to one or more notional investment options ("Investment Options") established under the Plan for measuring the income, gain or loss recorded for the director's Deferred Compensation Account. In connection therewith, there shall be established for each participating director, one or more subaccounts of his Deferred Compensation Account ("Subaccounts") to reflect the director's Investment Option selections or for such other reasons as the Board determines necessary or desirable for the administration of the Plan. A participating director may change such election as provided for in Section 7 herein.

i. Each Investment Option, other than the Stepan Common Stock Investment Option, shall be a security, mutual fund, common or collective trust, insurance company pooled separate account, or other notional benchmark for measuring the income, gain or loss recorded for a director's Subaccount that qualifies as a "pre-determined actual investment" within the meaning of Section 31.3121(v)(2)-1(d)(2)(i)(C) of the U.S. Treasury Regulations. There shall be at least four (4) Investment Options under the Plan which shall include the common stock of the Company ("Stepan Common Stock"). The Plan Committee, as designee of the Board, may prospectively change Investment Options at any time upon notice to the directors.

ii. Each Subaccount shall be adjusted to reflect the changes in value which result from income, gain or loss as if the deferred compensation credited to the Subaccount had actually been invested in the Investment Option for which it has been established. In the case of the Stepan Common Stock Subaccount, dividends on Stepan Common Stock shall be credited as dividend equivalents as if they had been actually paid on the dividend payment date and immediately reinvested in Stepan Common Stock, based upon the closing price of Stepan Common Stock.

iii. The Investment Options offered under the Plan are for the sole purpose of providing a performance measurement for adjusting Deferred Compensation Accounts for income, gain or loss. Notwithstanding anything in this Plan to the contrary, the Company shall not be required to actually invest monies in any fund designated as an Investment Option, any decision to so invest shall remain within the complete discretion of the Company, and any amounts so invested shall remain the property of the Company. A director whose Deferred

Compensation Account includes a Stepan Common Stock Subaccount shall have no rights of a shareholder of Stepan Common Stock.

7. Investment Changes: A participating director may transfer amounts between Subaccounts by giving written notice to the Company Secretary or his designee, provided however that:

a. No amount which is credited to a director's Stepan Common Stock Subaccount, either initially or by subsequent transfer, shall be thereafter transferred from the director's Stepan Common Stock Subaccount to another Investment Option.

b. Any election under this Section 7 to transfer amounts between Subaccounts shall be made during the period permitted under the Company's Insider Trading Policy as in effect from time to time and shall be subject to the other applicable terms of such Insider Trading Policy. Any transfer the participating director elects to make shall be effective as of the last day of the calendar quarter in which such transfer is elected.

8. Deferrals of Stock Awards:

a. Upon signing a Stock Award Deferral Election Form and at the participating director's election made prior to the beginning of the year for which the stock award of the participating director is earned, such stock award (the "Deferred Stock Award") shall be deferred. The participating director's Deferred Stock Award shall be credited annually to a Deferred Stock Award Account maintained in his name. The election to defer receipt of the Deferred Stock Award applies to the entire grant.

b. Dividend Equivalents. As of the date any dividend is paid to shareholders of Stepan Common Stock, the participating director's Deferred Stock Award Account shall also be credited with an additional Common Stock equivalent equal to the number of shares of Stepan Common Stock (including fractions of a share) that could have been purchased at the closing price on such date with the dividend paid on the number of shares of Stepan Common Stock to which the participating director's Deferred Stock Award Account is then equivalent.

9. Payments: This Section 9 shall apply to payment of amounts credited to the director's Deferred Compensation Account and to the director's Deferred Stock Award Account (collectively, the "Deferred Accounts"), but shall not apply to Stock Awards granted to a director pursuant to Section 10. The director is not required to make the same election with respect to the timing and method of the payment of both his Deferred Compensation Account and his Deferred Stock

Award Account, but rather may elect a different timing and method of payment for each account.

a. A director may elect that payment of amounts credited to his Deferred Accounts begin at either one of the following times:

    i. Upon the director's separation from service from the Company; or

    ii. At any age attained by the director that is after age 59.

b. A director may elect the method of payment of amounts credited to his Deferred Accounts from among the following:

    i. 3, 5, or 10 substantially equal annual installments; or

    ii. A single lump sum.

    The amount of each such installment payment shall be calculated by dividing the balance credited to the participating director's Deferred Compensation Accounts to which the election applies at the time of each such payment by the number of remaining installments (including the current installment). For purposes of Section 409A of the Internal Revenue Code of 1986, as amended (the "Code"), each such installment payment shall be a separate payment and not one of a series of payments treated as a single payment.

c. Payment of the director's Deferred Accounts shall be made (in the case of a single lump sum) or commence (in the case of installments):

    i. In the first calendar year following the year in which the director has separated from service from the Company in the case of a director who has elected in his election form to receive payment upon separation from service from the Company, or

    ii. In the calendar year in which the director has attained the age specified by the director in his election form, in the case of a director who has elected to receive payment at a specified age that is after age 59.

d. A director's payment election shall be made in writing, as directed by the Board, no later than the December 31 prior to the calendar year for which the payment election shall first apply to a deferral of director's compensation and shall apply to all director's compensation that is deferred for future calendar years, if any, until the director is entitled to make a new distribution election under the Plan for compensation not yet earned, under rules established by the Board. Any such new payment election (i) must be made no later than December 31 prior to the calendar year for which such payment election shall first apply to a deferral of director's compensation, and (ii) shall only apply to director's compensation earned for calendar years following the calendar year in which such payment election is made.

e. A director who has failed to designate the method of payment for his Deferred Compensation Account or his Deferred Stock Award Account shall have such account for which he has failed to designate the method of payment distributed to him in the form of 5 substantially equal annual installments commencing in January of the year following the year in which the director has separated from service from the Company.

f. All amounts distributed to a director under the Plan shall be subject to the special delay rule for Specified Employees set forth below.

g. Notwithstanding anything in the Plan to the contrary, no payment that is paid by reason of a director's separation of service from the Company shall be made to any director who is a "Specified Employee" as of the date of such director's separation from service until the earlier of (i) the first day of the seventh month after the date of the director's separation from service, or (ii) the date of the director's death. Any payment that would otherwise have been made during this period shall instead be aggregated and paid to the director (or, in the case of the director's death, his surviving spouse, if there be one, or if not, to the director's estate) in the form of a single lump sum upon the earlier of the dates specified in the preceding sentence. "Specified Employee" for purposes of the Plan means, during the 12-month period beginning on April 1st of any calendar year, a director who met the requirements of Section 416(i)(1)(A)(i), (ii) or (iii) of the Code (applied in accordance with the regulations promulgated thereunder and without regard to Code Section 416(i)(5)) for being a "key employee" at any time during the 12-month period ending on the December 31st immediately preceding such April 1st. Notwithstanding the foregoing, a director who otherwise would be a Specified Employee under the preceding sentence shall not be a Specified Employee for purposes of the Plan unless, as of the date of the director's separation from service, stock of the Company (or any other entity treated as a single employer with the Company under Code Section 414(b) or (c)) is publicly traded on an established securities market or otherwise.

h. Payments to a director under the Plan will be delayed under any of the circumstances specified in Subsections (i) through (ii) below or as provided in Section 17.

    i. Payments that would violate Applicable Law. Payment of a director's Deferred Accounts will be delayed where the Board reasonably anticipates that the making of the payment would violate Federal securities laws or other applicable law; provided that such payment will be made at the earliest date at which the Board reasonably anticipates that the making of the payment would not cause such violation. For purposes of this subsection (i), the making of a payment that would cause inclusion in the director's gross income or the application of any penalty or other provision of the Code is not treated as a violation of applicable law.

ii. Other Payments. The Board shall be permitted to delay a payment of a director's Deferred Accounts upon such other events and conditions as may be prescribed under Code Section 409A and any regulations or other generally applicable official guidance issued thereunder.

i. Upon the death of a director after the event providing for payment, payment of his Deferred Accounts will be continued to his surviving spouse on the basis of the director's election under Section 9(b). If death occurs before the event providing for payment, payments will be made to the director's surviving spouse in substantially equal annual installments over a period of 5 years. Any amount credited to a director's Deferred Account after the last to die of the director or his spouse shall be continued to be paid on the same basis as provided above to such person's estate.

j. Except as otherwise provided in this Section 9(j), payment of a director's Deferred Compensation Account under this Section 9 shall be made in cash. Payment of a director's Stepan Common Stock Subaccount and a director's Deferred Stock Award Account under this Section 9 shall be distributed to the director solely in shares of Stepan Company Common Stock, except where a director's Stepan Common Stock Subaccount or Deferred Stock Award Account contains any fractional shares, in which case the value of the fractional shares shall be paid in cash.

10. Prior Stock Award:

a. Prior to January 1, 2012, each February the Company provided each non-employee director with a Stock Award credited to his Stepan Common Stock Subaccount (a "Prior Stock Award"). Although the Company no longer provides these Prior Stock Awards, a director's Stepan Common Stock Subaccount may continue to hold amounts that were previously credited and have not been distributed.

b. No transfer of any Prior Stock Award to any other Subaccount shall be allowed at any time.

c. Notwithstanding Section 9 of the Plan, the Prior Stock Award shall be payable to the non-employee director on his separation from service from the Company, in a single lump sum payment, and shall be made only in shares of Stepan Common Stock. In the event of the non-employee director's death before all such amounts have been so paid or in the event of the non-employee director's death occurs before the director has incurred a separation from service, the unpaid balance of the Stepan Common Stock Subaccount attributable to Prior Stock Awards shall be paid on the non-employee director's death to the non-employee director's surviving spouse, if there be one, or if not, to the director's estate in a single lump sum payment made in shares of Stepan Common Stock.

d. All amounts distributed to a director under the Plan that are attributable to a Prior Stock Award under this Section 10 shall be subject to the special delay rule for Specified Employees described in Section 9.

11. No Acceleration of Payment. Notwithstanding anything in the Plan to the contrary, the distribution of any portion of a director's interest under the Plan may not be accelerated, whether at the election of the director or at the discretion of the Board or otherwise, except as may be specifically permitted under Code Section 409A and any regulations or generally applicable official guidance issued thereunder.

12. Separation of Service. "Separated from Service" and variations thereof for purposes of the Plan means a "separation from service" within the meaning of Code Section 409A and the regulations promulgated thereunder, including a separation by reason of the director's retirement or termination of service with the Company for any other reason, but excluding a termination of service due to death.

13. Nontransferability, Nonassignability. The interest of a director under the Plan is not subject to the claims of his creditors, and may not be voluntarily or involuntarily assigned, transferred, alienated, pledged or encumbered.

14. No Right to Serve as a Director. Nothing in the Plan shall confer upon a director the right to continue to serve as a member of the Board.

15. Source of Benefits. This Plan is an unfunded plan. The Company shall not be required to establish a trust or otherwise fund its obligations to directors under the Plan in any way. A director's interest under the Plan is solely that of a general, unsecured creditor of the Company.

16. Section 409A of the Code. It is intended that the Plan (including any amendments thereto) comply with the provisions of Section 409A of the Code so as to prevent the inclusion in gross income of any amounts accrued hereunder in a taxable year that is prior to the taxable year or years in which such amounts would otherwise be actually distributed or made available to non-employee directors. The Plan shall be interpreted, construed and administered in a manner that will comply with Section 409A of the Code, including final regulations or any other guidance issued by the Secretary of the Treasury and the Internal Revenue Service with respect thereto. Notwithstanding any other provision of the Plan, the Company does not guarantee any particular tax result for any director or beneficiary with respect to participation in or payments under the Plan, and each director or beneficiary shall be responsible for any taxes imposed on the director or beneficiary with respect to such participation or payments under the Plan.

17. Timing of Payments. Notwithstanding any provision of the Plan to the contrary, a distribution to be made as of a specified date or within a specified period under Section 9 or 10 shall be made on the date or within the period specified or as soon

as administratively practicable thereafter, but in no event later than the last day of the same calendar year in which such date or period occurs. In addition, if calculation of the amount of a payment is not administratively practicable due to events beyond the control of the non-employee director or his beneficiary or if making of a payment would jeopardize the ability of the Company to continue as a going concern, a payment will be treated as made on the specified date or in the specified period for purposes of the Plan if the payment is made during the first calendar year in which the calculation of the amount of the payment is administratively practicable or in which the making of the payment would not have such effect on the Company, as the case may be.

18. Amendment and Termination. The Board may from time to time amend the Plan in such respects as it deems advisable and may terminate the Plan at any time; provided, however, that no such amendment or termination shall adversely affect any right or obligation with respect to any amount accrued to a participating director's Deferred Accounts under the Plan without the consent of the participating director or beneficiary, except that the consent requirement of participating directors or beneficiaries shall not apply to any amendment or termination that is deemed necessary by the Company to ensure compliance with Section 409A of the Code. Notwithstanding the preceding sentence, the Board, in its sole discretion, may terminate this Plan to the extent and in the circumstances described in Treas. Reg. § 1.409A-3(j)(4)(ix), or any successor provision.

19. Gender and Number. Where the context admits, words in any gender shall include any other gender, words in the singular shall include the plural, and words in the plural shall include the singular.

IN WITNESS WHEREOF, the duly authorized officer of the Company has executed this Amended and Restated Directors Deferred Compensation Plan on behalf of the Company and has caused its corporate seal to be affixed this 14th day of February, 2012.

STEPAN COMPANY

Name________________________________

Title_________________________________

Title______________________________

Exhibit 21

STEPAN COMPANY
SUBSIDIARIES OF REGISTRANT

Subsidiary	Organized under the Laws of:
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 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

Exhibit 23

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, 2019, 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, 2018.

/s/ Deloitte & Touche LLP
DELOITTE & TOUCHE LLP

Chicago, Illinois
February 27, 2019

Exhibit 24

POWER OF ATTORNEY

The undersigned hereby appoints F. Quinn Stepan, Jr. and Luis E. Rojo 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, 2018, 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, 2019.

/s/ F. Quinn Stepan, Jr.
F. Quinn Stepan, Jr.

/s/ Luis E. Rojo
Luis E. Rojo

/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

Exhibit 31.1

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, 2019

/s/ F. Quinn Stepan, Jr.
F. Quinn Stepan, Jr.
Chairman, President and Chief Executive Officer

Exhibit 31.2

CERTIFICATION OF CHIEF FINANCIAL OFFICER
PURSUANT TO EXCHANGE ACT RULE 13a-14(a)/15d-14(a)

I, Luis E. Rojo, 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, 2019

/s/ Luis E. Rojo
Luis E. Rojo
Vice President and Chief Financial Officer

Exhibit 32

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, 2018, 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, 2019

/s/ F. Quinn Stepan, Jr.
Name: F. Quinn Stepan, Jr.
Title: Chairman, President and Chief Executive Officer

/s/ Luis E. Rojo
Name: Luis E. Rojo
Title: Vice President and 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.