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, 2021

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)
1101 Skokie Boulevard, Suite 500, Northbrook, Illinois	**60062**
(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	Trading Symbol	Name of Each Exchange on Which Registered
Common Stock, $1 par value	**SCL**	**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 whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer", "accelerated filer", "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☒ Accelerated filer ☐ Non-accelerated filer ☐ Smaller reporting company ☐

Emerging growth company ☐

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

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒

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, 2021, of voting and non-voting common stock held by nonaffiliates of the registrant: $2,582,080,839*

Number of shares outstanding of each of the registrant's classes of common stock as of January 31, 2022:

Class	**Outstanding at January 31, 2022**
Common Stock, $1 par value	22,421,100

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 expected to be held April 26, 2022.

* Based on reported ownership by all directors and executive officers at June 30, 2021.

STEPAN COMPANY
ANNUAL REPORT ON FORM 10-K
December 31, 2021

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:

- the impact of the COVID-19 pandemic;
- accidents, unplanned production shutdowns or disruptions in any of the Company’s manufacturing facilities;
- reduced demand for Company products due to customer product reformulations or new technologies;
- the Company’s inability to successfully develop or introduce new products;
- compliance with environmental, health and safety, product registration and anti-corruption laws;
- the Company’s ability to make acquisitions of suitable candidates and successfully integrate acquisitions;
- 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;
- downturns in certain industries and general economic downturns;
- international business risks, including fluctuations in currency exchange rates, legal restrictions and taxes;
- unfavorable resolution of litigation against the Company;
- the Company’s ability to keep and protect its intellectual property rights;
- potentially adverse tax consequences due to the international scope of the Company’s operations;
- downgrades to the Company’s credit ratings or disruptions to the Company’s ability to access well-functioning capital markets;
- 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;
- the Company’s ability to retain its executive management and other key personnel;
- the Company’s ability to operate within the limitations of debt covenants; 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.

Revenue-Generating 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 production of polyols.

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

Competitive Conditions

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.

Material Resources

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. In January 2020 and January 2022, the Company’s Millsdale, Illinois facility suffered power outages that caused temporary shutdowns and further related operational issues. The Company’s operations have not experienced any other 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.

The principal raw materials used by the Company are petroleum or plant based. For 2022, the Company has contracts with suppliers that cover most of its forecasted requirements for major raw materials and is not substantially dependent upon any one supplier.

Compliance with Government Regulations

Compliance with applicable country, state and local regulations regarding the discharge of materials into the environment, or otherwise relating to the protection of the environment, resulted in capital expenditures by the Company of $13.4 million during 2021. These expenditures represented approximately seven percent of the Company’s total 2021 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 to 15 years. Recurring costs associated with the operation and maintenance of facilities for waste treatment and waste disposal and managing environmental compliance in ongoing operations at our manufacturing locations were approximately

$34.9 million in 2021. 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.

Human Capital Resources

At December 31, 2021 and 2020, the Company employed 2,439 and 2,293 persons, respectively. We view our employees as critical to helping us realize our vision of delivering innovative chemical solutions for a cleaner, healthier, more energy efficient world. The Company's five Values reflect our shared commitment to this vision and serve as a guide as we operate our business: (1) People First: Empowering Everyone to Make a Difference – we listen, share and recognize great work; (2) Integrity: Doing the Right Thing – we do what is right and safe, and can be counted upon to fulfill our commitments and speak up when we have concerns; (3) Customer Focused: Partnering to Deliver Value – our approach to collaborative chemistry helps our customers' products perform and deliver solutions that serve the needs of our global community; (4) Continuous Improvement: Improving Every Day – we embrace a spirit of continuous learning to improve the sustainability of our practices and our products; and (5) Growth, Innovation and Sustainability: Shaping the Future Through Curiosity – we see incredible possibilities and accept the challenge to make a positive impact.

Safety for all employees, our business partners, and the communities in which we operate continues to be a top priority. We have a long-standing focus on safety and responsible chemicals management, as well as a commitment to the environmental, health, safety and security performance initiative of the American Chemistry Council (ACC), a U.S.-based chemical industry association. As part of this focus and commitment, the Company invests in behavior based and risk-based safety programs for its global workforce. The goal of these programs is to help establish habits and behaviors that promote safety awareness, thinking, and responsiveness. All Company facilities are ISO 9001:2015 certified, and the Company conforms to the ACC Responsible Care Management System at its U.S. sites. In addition, facilities outside the United States are encouraged to participate in their country-specific Responsible Care® program equivalents. Special recognition is given annually to the Company's facilities that have demonstrated safety achievements. The President's Safety Award is given to sites that meet specific criteria for recordable incidents and injuries, as well as other safety and compliance requirements, over the course of the year.

We depend on our highly skilled workforce to reach our business goals, and through a robust commitment to promote safety and well-being, enable professional development, and provide excellent benefits, the Company aims to attract and retain top talent. We value the fact that we have a diverse, inclusive, and engaged community of workers, and our goal, is to create workplace environments built on respect, safety, strong teamwork, and high competency. Employee feedback is regularly solicited on workplace practices and culture. Results from these surveys are used at the corporate and site levels to define needs and develop improvement plans. Across our operations, employees are encouraged and supported in developing the technical and leadership skills they need to excel at their work and to advance in their roles. The Company provides an array of opportunities, including our Emerging Leaders Program, Leadership Development Program, technical training and certifications, language training, and educational assistance. Developing our talent pipeline and retaining our skilled labor force is a key focus, and our objective is to support employees' progress toward their professional goals through opportunities within the Company. Employees receive comprehensive and competitive benefits packages aimed at attracting top talent and supporting needs for work-life balance. Employees are rewarded for their positive contributions to company success with Pay-for-Performance incentives.

Acquisitions and Dispositions

See Note 20, *Acquisitions*, of the notes to the Company's consolidated financial statements (included in Item 8 of this Form 10-K) for information regarding the Company's acquisition activities.

Website

The Company's website address is www.stepan.com. The Company makes available free of charge on or through its website, its 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 SEC). The website also makes available the Company's sustainability report, code of conduct, corporate governance guidelines and the charters for the audit, compensation and development, compliance and nominating and corporate governance committees of the Company's Board of Directors.

Information About our Executive Officers

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 until their respective successors are duly qualified and elected.

The executive officers of the Company, their ages and certain other information as of February 25, 2022, are as follows:

Name	Age	Title	Year First Elected Officer
F. Quinn Stepan, Jr.	61	Chairman and Chief Executive Officer	1997
Scott R. Behrens	52	President and Chief Operating Officer	2014
Arthur W. Mergner	58	Executive Vice President, Supply Chain	2014
Debra A. Stefaniak	60	Vice President, Business Enablement	2015
Sean T. Moriarty	52	Vice President and General Manager –Surfactants	2017
Luis E. Rojo	49	Vice President and Chief Financial Officer	2018
Janet A. Catlett	45	Vice President and Chief Human Resources Officer	2018
Jason S. Keiper	48	Vice President and Chief Technology and Sustainability Officer	2019
David G. Kabbes	59	Vice President, General Counsel and Secretary	2019
Richard F. Stepan	45	Vice President and General Manager –Polymers	2021

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 Chief Executive Officer since January 2006. He served the Company as President from January 2006 through December 2020. On February 17, 2022, the Company announced that Mr. Stepan will retire as Chief Executive Officer of the Company on April 25, 2022. Mr. Stepan will remain in his role as Chairman of the Board of Directors of the Company.

Scott R. Behrens has served the Company as President and Chief Operating Officer since January 2021. From September 2014 through December 2020, he served as Vice President and General Manager – Surfactants of the Company. On February 17, 2022, the Company announced that Mr. Behrens will succeed F. Quinn Stepan, Jr. as President and Chief Executive Officer of the Company following Mr. Stepan's retirement on April 25, 2022.

Arthur W. Mergner has served the Company as Executive Vice President, Supply Chain since January 2021. From August 2017 through December 2020, he served as Vice President, Supply Chain and from April 2014 until August 2017, he served as Vice President and General Manager – Polymers of the Company.

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 of the Company.

Sean T. Moriarty has served the Company as Vice President and General Manager – Surfactants since January 2021. From September 2017 through December 2020, he served as Vice President and General Manager – Polymers and from September 2014 through September 2017, he served as Vice President and General Manager - North America Surfactants of the Company.

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.

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, which 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.

Jason S. Keiper has served the Company as Vice President and Chief Technology and Sustainability Officer since June 2019. From October 2018 to June 2019, Dr. Keiper served as Head, Product Technology and Engineering, of Syngenta, an agriculture company. From 2015 to September 2018, Dr. Keiper served as Head, Global Formulation and Analytical Development; Technology and Engineering of Syngenta.

David G. Kabbes has served the Company as Vice President, General Counsel and Secretary of the Company since July 2019. From January 2018 to June 2019, Mr. Kabbes served as Executive Vice President, Corporate Affairs and Chief Legal Officer of

Bunge Limited, an agricultural and food ingredient company. From February 2015 to December 2017, Mr. Kabbes served as General Counsel and Managing Director – Corporate Affairs of Bunge Limited.

Richard F. Stepan has served the Company as Vice President and General Manager – Polymers since January 2021. From January 2019 through December 2020, Mr. Stepan served as Vice President, Consumer Products, and from September 2014 through December 2018, Mr. Stepan served as Director, Consumer Products, North America of the Company.

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 Management’s Discussion and Analysis of Financial Condition and Results of Operations (included in Item 7 of this Form 10-K) and the Company’s consolidated financial statements and related notes (included in this Form 10-K).

Business and Operations Risks

The COVID-19 pandemic has had and could continue to have a material adverse impact on our business, financial position, results of operations and cash flows.

The COVID-19 pandemic has disrupted our operations and affected our business and could continue to do so, including as a result of government authorities imposing mandatory closures, work-from-home orders and social distancing protocols, or imposing other restrictions that could materially adversely affect our ability to adequately staff and maintain our operations. Specifically, in 2020 we experienced a temporary facility closure in response to government mandates in one jurisdiction in which we operate. In addition, during 2020 and 2021 at certain times we experienced reduced staffing and reduced production capacity at facilities due to the impact of the COVID-19 pandemic on our employees. We may experience additional closures in the future. The COVID-19 pandemic, and resulting restrictions and perceptions of health risks, have affected and could have long-term effects on our customers and the economies of countries in which we and our customers operate, and demand for certain of our products could be adversely affected. For example, in 2020 and 2021, construction project delays and cancellations related to the impacts of the COVID-19 pandemic reduced demand for the Company’s rigid polyol products. In addition, our operations have been adversely affected by other impacts of the COVID-19 pandemic, including, disruptions to our supply of raw materials, transportation and delivery of our products and cost inflation. Because the Company cannot predict the duration or broader impact of the COVID-19 pandemic, the impact on the Company cannot be reasonably estimated, but the COVID-19 pandemic has had and could continue to have a material adverse effect on the Company’s business, financial position, results of operations and cash flows.

Chemical manufacturing is inherently hazardous and may result in accidents or may require planned or unplanned production slowdowns or shutdowns, which may disrupt our operations or expose us to significant losses or liabilities that 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 slowdowns and 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, explosions, mechanical failure, labor-related work stoppages or slowdowns, maintenance, discharges, contamination, environmental remediation or other manufacturing problems. For example, in January 2022, unplanned weather-related production disruptions at the Company’s Millsdale, Illinois facility impacted Polymer operations. 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.

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 toxic or hazardous substances to 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 business, financial position, results of operations and cash flows. The

Company maintains property, business interruption, products liability and casualty insurance policies, 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 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 can be subject to periods of rapid and significant instability. These fluctuations in prices may be affected by supply and demand factors, such as general economic conditions, regulatory developments with respect to and 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. For example, in 2021, supply chain disruptions and inflationary pressures increased raw material prices for the Company. 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. In addition, the Company's suppliers are subject to planned and unplanned production slowdowns and 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, explosions, mechanical failure, labor-related work stoppages or slowdowns, maintenance, discharges, contamination, environmental remediation or other manufacturing problems. Certain of our suppliers' facilities are located in areas where unplanned disruptions are more likely. In the event of supply disruptions, raw materials may not be available to the Company in amounts sufficient to meet our requirements, and alternative raw materials may not be available, may cost substantially more or may take a significant amount of time to for the Company to qualify. For example, in 2021, severe weather in Texas and the U.S. Gulf Coast caused production disruptions for several of the Company's suppliers, which resulted in feedstock issues for the Company's Surfactants segment. 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 have affected and could continue to 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, technological problems, work stoppages, personnel shortages and operating hazards, as well as interstate and international transportation regulations. If the Company, its suppliers or third-party transportation operators experience 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 a material adverse effect on Company revenues, costs and operating results. For example, during the 2021, transportation disruptions due to driver shortages and increased costs negatively impacted results of operations in our Surfactants and Polymers segments.

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, or any resulting economic instability resulting from such conflict, military action or terrorist attack, 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 capital 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 business, financial position, results of operations and cash flows.

Market, Competition and Strategic Risks

Customer product reformulations or new technologies can reduce the demand for the Company's existing products, and the Company may not be successful in developing or introducing new products.

The Company's products are used in a broad range of customer product applications. Changes in customer manufacturing processes, customer product reformulations, development and use of new technologies or changes in regulatory, legislative or industry requirements may lead to reduced consumption of the Company's products or cause customers to consider some Company products obsolete or less attractive.

For example, increased concerns regarding the safety of 1,4 dioxane in consumer products and its potential impact on human health and the environment may lessen the demand for certain of the Company's products. 1,4 dioxane is generated as a by-product during the manufacture of certain of the Company's surfactant products, including alkoxylates and ether sulfates, used by its customers as cleaning agents in household cleaning, personal care and cosmetics products. In their finished form, consumer products that contain ethoxylated surfactants may contain trace amounts of 1,4 dioxane. 1,4 dioxane has been categorized by regulators as a toxic and carcinogenic substance at certain levels. In December 2019, New York adopted a law that, beginning in 2022 and 2023, will permit no more than trace amounts of the chemical in cleaning, personal care and cosmetics products. California and New Jersey, likewise, are also considering regulating 1,4 dioxane. The U.S. Environmental Protection Agency (USEPA) also continues to examine 1,4 dioxane as part of its environmental and occupational regulatory authority. We expect our customers to continue reformulating their personal care, cosmetics and cleaning products to meet New York's 2022 and 2023 deadlines. These trends and corresponding changes in consumer preferences could reduce demand for our ethoxylated surfactant products, as our customers look to reduce the levels of ethoxylated surfactants in their finished products to stay below the maximum allowed levels or transition to alternative surfactants with lower levels of 1,4 dioxane. We are currently making investments to modify our manufacturing process to reduce 1,4 dioxane content to allow customers to continue to use ethoxylated surfactants at current use levels, while also offering consumer product formulation prototypes that contain low/no dioxane surfactants currently offered by the Company.

It is imperative that the Company continue to develop new products to replace the sales of products that mature and decline in use, though the Company may not be successful in achieving its growth expectations from developing new products. Moreover, the Company cannot be certain that the costs it incurs investing in new product and technology development will result in an increase in revenues or profits commensurate with its investment, and the introduction of any new products may be disrupted or delayed by manufacturing or other technical difficulties. 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 successful development and 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.

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 as well as continue to develop and introduce new products. 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.

Downturns in certain industries, in some cases driven by consumer preferences, 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. In addition, increasing concern among consumers, public health professionals and government agencies about health and wellness issues could lead some of the Company's customers to limit the use of certain of our products or result in harm to the Company's reputation. 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 demand for such end products 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, or consumer-driven preferences result in reduced demand for our products, the Company's business, financial position, results of operations and cash flows may be materially and adversely affected.

If the Company is unable to 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 on reasonable terms or at all.

Regulatory and Legal Risks

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, or expose us to liability or enforcement actions.

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 the 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 the U.S. Toxic Substances Control Act (TSCA), the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), the Clean Air Act, the Clean Water Act, the Resource Conservation and Recovery Act (RCRA), the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), the Occupational Safety and Health Act and state and local laws, such as California's Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65). Analogous laws outside the United States apply to us in many jurisdictions, including, among others, the Registration, Evaluation, Authorization and Restriction of Chemical Substances (REACH) regulations in the European Union and the United Kingdom and Biocidal Products Regulations in the European Union and the United Kingdom. Compliance with these environmental, health and safety 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 or implement different or more costly manufacturing processes (including the installation of pollution control equipment), 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 regulations are a registration systems that impose obligations on manufacturers and importers of chemicals and other products into the European Union and United Kingdom to compile and file reports and testing data on, and perform safety assessments for, certain chemical substances. Any new substances introduced to the EU or UK markets in the future must be registered. The costs associated with the Company's compliance with these registrations have been substantial and are expected to increase as product sales increase because higher tonnage bands have higher annual registration fees and require more testing to support the registration. 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 the REACH regulations.

Furthermore, some of the laws and regulations applicable to us have changed in recent years to impose new obligations or increasing compliance costs 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 mandates that the 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. As a result of such regulations, our ability to sell certain products may be curtailed and customers may avoid purchasing some products in favor of less regulated, less hazardous or less costly alternatives. It may be impractical for us to continue manufacturing heavily regulated products, and we may incur costs to shut down or transition such operations to alternative products. Additionally, the nature, stringency and timing of any future regulations or changes in regulations are uncertain.

In addition, increasingly stringent regulation of human exposure to ethylene oxide by regulatory authorities in the United States could require material expenditures or changes in our manufacturing operations. We use ethylene oxide at our Winder, Georgia and Millsdale, Illinois facilities. We use ethylene oxide in a closed loop process to manufacture surfactants that are used in products such as laundry detergents. The Company does not manufacture ethylene oxide, nor does it use ethylene oxide as a fumigant. Ethylene oxide is listed as a hazardous air pollutant under the Clean Air Act, as amended, emissions of which are regulated by the USEPA and other regulatory authorities. In 2020, Georgia adopted a law requiring any spill or release of ethylene oxide that occurs outside of normal operations to be reported to the state within 24 hours. Georgia and Illinois legislators have proposed legislation that would impose additional restrictions on the use of ethylene oxide. The USEPA is considering new standards for ethylene oxide emissions. While our production facilities have not yet been materially affected by changes in ethylene oxide regulation, any additional regulatory restrictions on the use or emission of ethylene oxide by facilities could impair our ability to manufacturer certain products in affected locations, including at our Winder, Georgia and Millsdale, Illinois facilities.

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, as our operations currently use, and have historically used, hazardous materials and generate, and have historically generated, quantities of hazardous waste. Some existing environmental laws and regulations impose liability and responsibility on present and former owners, operators or users of facilities and sites for contamination at those locations without regard to causation or knowledge of contamination. Certain of our sites have an extended history of industrial use, which may expose us to liability. 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 the Company's Consolidated Financial Statements (included in Item 8 of this Form 10-K) for a summary of current significant environmental proceedings related to certain environmental sites. In the event that new contamination is discovered, including at facilities we may acquire in the future, 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, such as FIFRA, the EU Biocidal Products Regulation and Mexico's General Law of Ecological Equilibrium and Environmental Protection. 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 has failed to comply or fails to comply in the future 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 laws and regulations, 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 against the Company, to the extent not covered by existing insurance policies, could have a material adverse effect on its business, financial position, results of operations and cash flows. Although the Company has insurance policies that may cover some of these potential losses, there is always uncertainty as to whether such insurance may be sufficient to cover such losses or available at all 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, health and safety and product registration laws and regulations 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 also 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.

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

Doing business on a worldwide basis requires the Company to comply with anti-corruption laws and regulations imposed by governments around the world with jurisdiction over our operations, which may include the U.S. Foreign Corrupt Practices Act (FCPA) and the U.K. Bribery Act 2010 (the Bribery Act), as well as the laws of the countries where the Company does business. These laws and regulations can apply to companies and individual directors, officers, employees and agents, and may restrict the Company's operations, trade practices, investment decisions and partnering activities. Where they apply, the FCPA and the Bribery Act prohibit, among other things, the Company and its officers, directors, employees and business partners, including joint venture partners and agents acting on the Company's behalf, from corruptly offering, promising, authorizing or providing anything of value to "foreign officials" for the purposes of influencing official decisions or obtaining or retaining business or otherwise obtaining favorable treatment. The Bribery Act also prohibits non-governmental "commercial" bribery and accepting bribes. Part of the Company's business may involve dealings with governments and state-owned business enterprises, the employees and representatives of which may be considered "foreign officials" for purposes of the FCPA and the Bribery Act. The Company is also subject to the jurisdiction of various governments and regulatory agencies around the world, which may bring Company personnel and agents into contact with "foreign officials" responsible for issuing or renewing permits, licenses, or approvals or for enforcing other governmental regulations. The Company's global operations, including in countries with high levels of perceived corruption, expose it to the risk of violating, or being accused of violating, anti-corruption laws. Any failure on the part of the Company to successfully comply with these laws and regulations may expose the Company to reputational harm as well as significant sanctions, including criminal fines, imprisonment of its employees or representatives, civil penalties, disgorgement of profits, injunctions and debarment from government contracts, as well as other remedial measures. Investigations of alleged violations can be expensive and disruptive. Compliance with these laws can increase the cost of doing business globally. The Company maintains policies and procedures designed to assist the Company and its subsidiaries in complying with applicable anti-corruption laws. However, there can be no guarantee that these policies and procedures will effectively prevent violations by Company employees or representatives for which the Company may be held responsible, and any such violation could materially and adversely affect the Company's reputation, as well as its business, financial position and results of operations.

International Operations Risks

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, 2021, the Company's sales outside of the United States constituted approximately 45 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, including:

- 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;
- corruption by government officials or other third parties or other adverse government actions;
- 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 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 the Company's 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 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 that could limit the Company's ability to sell products in certain markets (for example, the EU REACH regulation) and changing laws related to or the modification or non-renewal of 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.

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, 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.

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

The Company is also exposed to fluctuations in foreign 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, 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.

Financial Risks

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

Historically, the Company has relied on the debt capital markets to fund portions of its capital investments and other corporate initiatives, as well as access to bank credit facilities as part of its overall financing strategy, including 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 outlook. 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 and adversely affect its cost of funds, liquidity, competitive position and access to credit markets and increase the cost of and counterparty risks associated with existing facilities, which could materially and adversely affect the Company's business, financial position, results of operations and cash flows.

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

The Company has a significant amount of indebtedness and may incur additional indebtedness in the future. As of December 31, 2021, the Company had $363.6 million of debt on its balance sheet consisting of unsecured promissory notes with maturities ranging from 2022 until 2031. In addition, the Company is party to a $350.0 million revolving credit facility; as of December 31, 2021, the Company had no outstanding borrowings and outstanding letters of credit totaling $6.7 million under the facility with $343.3 million remaining available for future borrowings.

Certain of the Company's foreign subsidiaries periodically 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, 2021, the Company's foreign subsidiaries had $2.9 million in unsecured bank debt.

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 debt agreements contain customary covenants and other provisions that, among other things, require maintenance of certain financial ratios and place limitations on additional debt, investments and payment of dividends. The Company's ability to comply with these provisions may be affected by events beyond our control. Failure to comply with these provisions could require repayment of outstanding debt or lead to a debt restructuring that could materially and adversely affect the Company's business, financial position, results of operations and cash flows.

In addition, 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 costs and could make borrowings under the Company's revolving credit facility or other floating rate debt materially more expensive. Further, any future disruptions in the credit and financial markets may reduce the availability of debt financing or refinancing alternatives and increase the costs associated with such financing activities. If the Company is unable to secure financing when needed on satisfactory terms, or at all, its business, financial position, results of operations and cash flows may be materially and adversely affected.

General Risks

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 or 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 investments 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 materially and adversely affect our business, financial position, results of operations and cash flows.

During the normal course of business, we have experienced and expect to continue to experience attempts to compromise our information and communications technology and related systems. To date, no cybersecurity incident or attack has had a material impact on our business or results of operations. If a material, actual or perceived breach of our security occurs, the public perception of the effectiveness of our security measures could be harmed and we could lose customers or suppliers. Any such material disruptions or breaches of security could have a material adverse effect on our business, financial position, results of operations and cash flows.

The Company continues to develop and enhance controls and security measures designed 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 of or breaches in Company IT systems that 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; as a result, the Company may not be able to recruit and retain the personnel it needs if it were to lose an existing member of executive management or other key personnel. 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 a material and 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 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.	Winder	Winder, Georgia	202 acres	Surfactants
3.	Maywood	Maywood, New Jersey	19 acres	Surfactants / Specialty Products
4.	Pasadena	Pasadena, Texas	51 acres	Surfactants
5.	Stepan France	Voreppe, France	20 acres	Surfactants
6.	Stepan Ecatepec	Ecatepec, Mexico	34 acres	Surfactants
7.	Stepan China	Nanjing, China (Nanjing Chemical Industrial Park)	13 acres (right of use arrangement)	Polymers
8.	Stepan Brazil	Vespasiano, Minas Gerais, Brazil	27 acres	Surfactants
9.	Global Technology Center	Northfield, Illinois	8 acres	N/A
10.	Company Headquarters	Northbrook, Illinois	1.72 acres (leased)	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 assessment, protection and remediation 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 laws and 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 potentially responsible party (PRP) at a number of sites where cleanup costs have been or may be incurred by the Company 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 and claims. While the Company is unable to predict the outcome of these matters, it does not believe, based upon current available facts, that the ultimate resolution of any of these matters will have a material effect on its overall financial position. The Company's 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 (collectively, the Maywood site) were listed on the National Priorities List in September 1993 pursuant to the provisions of CERCLA because of alleged chemical contamination. Pursuant to (i) a September 21, 1987 Administrative Order on Consent entered into between the USEPA and the Company for property formerly owned by the Company at the Maywood site and (ii) the issuance of an order on November 12, 2004 by the USEPA to the Company for property currently owned by the Company at the Maywood site, 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 at the Maywood site, which requires the Company to perform remedial cleanup of the soil and buried waste. The USEPA has not yet issued a ROD for chemically-contaminated groundwater at the Maywood site. Based on the most current information available, the Company believes its recorded liability is reasonable having considered the range of estimated costs 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 the USEPA, as the design of the remedial action is finalized, if a groundwater ROD is issued or if other PRPs are identified. The ultimate amount for which the Company is liable could differ materially 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.

In addition, under the terms of a settlement agreement reached on November 12, 2004, the U.S. Department of Justice and the Company agreed to fulfill the terms of a Cooperative Agreement reached in 1985. Under the Cooperative Agreement, the United States is responsible for the removal of radioactive waste at the Maywood site, including past and future remediation costs at the site. 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 generated by the Company at several sites in New Jersey, including the D'Imperio Property Superfund Site located in New Jersey (the D'Imperio site). The Company was named as a PRP in an October 2, 1998 lawsuit in the U.S. District Court for the District of New Jersey that involved the D'Imperio site. In 2021, the PRPs were provided with updated remediation cost estimates by the PRP group technical consultant and project manager, which the Company considered in its 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 continues at the D'Imperio 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 materially from the current recorded liability.

Wilmington Site

The Company is currently contractually obligated to contribute to the environmental response costs associated with the Company's formerly-owned site in Wilmington, Massachusetts (the Wilmington site). Remediation at this site is being managed by its current owner, to whom the Company sold the property in 1980. Under the Company's October 1, 1993 agreement with the current owner of the Wilmington site, 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 $3.2 million for the Company's portion of environmental response costs at the Wilmington site through December 31, 2021. 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 materially from the current recorded liability.

The Company and other prior owners of the Wilmington site also entered into an agreement in April 2004 waiving certain statute of limitations defenses for claims that 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 its Millsdale, Illinois and Fieldsboro, New Jersey 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. Based on current information, the Company believes that its recorded liability for the remediation of the affected areas is appropriate based on an estimate of expected costs. However, actual costs could differ materially from current recorded liabilities.

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.

As of January 31, 2022, there were 1,759 holders of record of the Company's common stock. This number does not include beneficial owners whose shares are held by nominees in street name.

(b) Below is a summary by month of shares purchases by the Company during the fourth quarter of 2021:

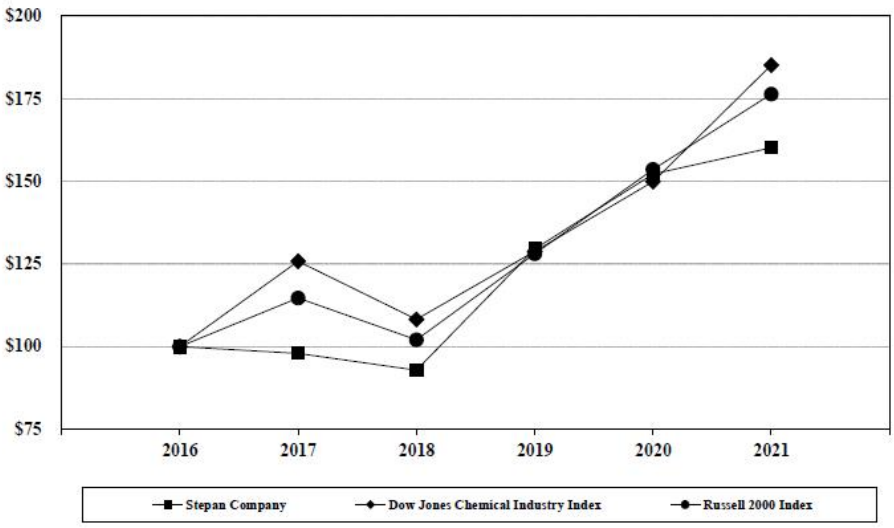
Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs (1)	Approximate Dollar Value of Shares That May Yet be Purchased Under the Plans or Programs (1)
October	430 (2)	$ 120.64	—	$ 150,000,000
November	519 (2)	$ 126.39	—	$ 150,000,000
December	—	—	—	$ 150,000,000
Total	949	$ 123.78	—	$ 150,000,000

(1) On October 20, 2021, the Company announced that its Board of Directors had authorized the Company to repurchase up to $150,000,000 of its outstanding common stock. Under this program, which does not have an expiration date, repurchases may be made from time to time through open market transactions, privately negotiated transactions or a combination of the foregoing, subject to applicable laws. The program authorization supersedes the Company's prior share repurchase authorization.

(2) Consists of shares of Company common stock tendered by employees to settle statutory withholding taxes related to the exercise of stock appreciation rights (SARs).

(c) Stock Performance Graph

The following stock performance graph compares the yearly change since December 31, 2016, 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, 2016 and shows the cumulative total return as of each December 31 thereafter.



	Cumulative Value at December 31*					
	2016	2017	2018	2019	2020	2021
Stepan Company	$100.00	$97.93	$92.82	$129.57	$152.18	$160.16
Dow Jones Chemical Industry Index	$100.00	$125.80	$108.21	$128.87	$149.91	$185.19
Russell 2000 Index	$100.00	$114.65	$102.02	$128.06	$153.62	$176.39

* Assumes $100.00 invested on December 31, 2016, in Stepan Company Stock, Dow Jones Chemical Industry Index and Russell 2000 Index.

Item 6. (Removed and Reserved)

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 is comprised of three reportable segments:

Surfactants - Surfactants, which accounted for 67 percent of the Company's consolidated net sales in 2021, are principal ingredients in consumer and industrial cleaning and disinfection 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, disinfectants, lubricating ingredients, emulsifiers for spreading agricultural products and industrial applications such as latex systems, plastics and composites. Surfactants are manufactured at five sites in the United States, two European sites (United Kingdom and France), five Latin American sites (one site in Colombia and two sites in each of Brazil and Mexico) and two Asian sites (Philippines and Singapore). Recent significant events include:

- In December 2019, the Company acquired an oilfield demulsifier product line. The Company believes this acquisition will accelerate its strategy to diversify into additional application segments within the oilfield end markets. The acquired business did not impact the Company's 2019 financial results and had a minimal impact on 2020 and 2021 financial results. See Note 20, *Acquisitions*, of the notes to the Company's consolidated financial statements (included in Item 8 of this Form 10-K) for additional details.
- On January 19, 2020, the Company experienced a power disruption that impacted its Millsdale, Illinois facility. This power outage, combined with below freezing temperatures led to significant production and operational challenges that impacted both Surfactants and Polymers produced at the site. The Millsdale facility operated on a partial basis and used existing inventories to serve the Company's customers. However, on February 17, 2020, power outage-related operational issues impacted the Millsdale site's waste water treatment plant and forced the Company to stop production at the site. As a result, the Company declared force majeure for the supply of phthalic anhydride (Polymers) and certain surfactant product lines. All production lines were fully operational prior to the end of the first quarter of 2020. The Company finalized an insurance settlement related to this power outage during 2020 and recognized $18.0 million of pre-tax insurance recovery. This insurance recovery was recognized as a reduction of expenses within cost of sales. The Surfactant and Polymer segments recognized $5.2 million and $12.8 million, respectively, of the insurance settlement. All expenses, business interruptions and insurance recoveries associated with the Millsdale power outage were recorded in the full year 2020.
- In March 2020, the Company acquired certain assets of Logos Technologies LLC's NatSurFact® business, a rhamnolipid-based line of bio-surfactants derived from renewable sources. These bio-surfactants offer synergies in several strategic end use markets including oilfield, agriculture, personal care, and household, industrial and institutional cleaning. The Company continues to focus its efforts to further develop, integrate and commercialize these unique surfactants. The Company believes the rhamnolipid technology will further advance the growth and sustainability aspirations of both the Company and its customers. See Note 20, *Acquisitions*, of the notes to the Company's consolidated financial statements (included in Item 8 of this Form 10-K) for additional details.
- In September 2020, the Company, through its subsidiaries in Mexico, acquired Clariant's anionic surfactant business located in Santa Clara, Mexico. The acquisition did not include the purchase of a manufacturing site. The business acquired was integrated into the Company's two existing manufacturing sites in Mexico (Matamoros and Ecatepec). This acquisition supports the Company's growth strategy in Latin America and the Company believes the acquisition enhances its ability to support customer growth in the Mexican consumer and functional surfactant markets. See Note 20, *Acquisitions*, of the notes to the Company's consolidated financial statements (included in Item 8 of this Form 10-K) for additional details.
- In February 2021, the Company acquired a fermentation plant, located in Lake Providence, Louisiana. The Company believes this plant complements the rhamnolipid-based bio-surfactant technology the Company acquired from Logos Technologies in March 2020. Fermentation is a new platform technology for the Company and the Company is focusing efforts to further develop, integrate, produce and commercialize these unique surfactants moving forward. Bio-surfactants, produced via fermentation are attractive due to their biodegradability, low toxicity, and in some cases, unique antimicrobial properties. These bio-surfactants offer synergies in several strategic end use markets including oilfield, agriculture, personal care and household, industrial and institutional cleaning. The acquisition of this industrial scale fermentation plant represents the latest step in the Company's bio-surfactant commercialization efforts. See Note 20, *Acquisitions*, of the notes to the Company's consolidated financial statements (included in Item 8 of this Form 10-K) for additional details.

Polymers - Polymers, which accounted for 30 percent of consolidated net sales in 2021, 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 powdered 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 are manufactured at the Company's Millsdale, Illinois, and Wilmington, North Carolina sites (see the INVISTA acquisition discussion below). Phthalic anhydride is 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 at the Company's subsidiaries in Germany and Vlissingen, Netherlands (see the INVISTA acquisition discussion below) 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, plant. Recent significant events include:

- The operational issues at the Company's Millsdale, Illinois facility, described in the Surfactants significant events paragraph above, negatively impacted Polymer earnings during 2020. This negative impact was partially offset by a related $12.8 million insurance recovery in 2020.
- In January 2021, the Company purchased INVISTA's aromatic polyester polyol business and associated assets. Included in the transaction were two manufacturing sites, one in Wilmington, North Carolina and the other in Vlissingen, Netherlands along with intellectual property, customer relationships, inventory and working capital. This acquisition expanded the Company's manufacturing capabilities in both the United States and Europe and enhanced the Company's business continuity capabilities for the market. The Company believes that INVISTA's available spare capacity, combined with debottlenecking opportunities in both plants, will allow Stepan to support future market growth in a capital efficient way. See Note 20, *Acquisitions,* of the notes to the Company's consolidated financial statements (included in Item 8 of this Form 10-K) for additional details.

Specialty Products – Specialty products, which accounted for three percent of consolidated net sales in 2021, 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, by third-party contractors. Recent significant events include:

- During 2019, the Company restructured its Specialty Products office in the Netherlands and eliminated positions from the site's supply chain, quality control and research and development areas. This restructuring was undertaken to better align the number of personnel with current business requirements and reduce costs at the site. See Note 22, *Business Restructuring,* of the notes to the Company's consolidated financial statements (included in Item 8 of this Form 10-K) for additional details.

2021 Acquisitions

INVISTA

In January 2021, the Company purchased INVISTA's aromatic polyester polyol business and associated assets. Included in the transaction were two manufacturing sites, one in Wilmington, North Carolina and the other in Vlissingen, Netherlands along with intellectual property, customer relationships, inventory and working capital. This acquisition expanded the Company's manufacturing capabilities in both the United States and Europe and enhanced the Company's business continuity capabilities for the market. The Company believes that INVISTA's available spare capacity, combined with debottlenecking opportunities in both plants, will allow Stepan to support future market growth in a capital efficient way. This acquisition was accounted for as a business combination, and accordingly, the assets acquired were measured and recorded at their fair values. The purchase price of the acquisition was $165.0 million, plus $21.6 million of working capital and $3.0 million of associated value-added taxes (VAT). The working capital acquired included $5.9 million of cash. The acquisition was paid with cash on hand. See Note 20, *Acquisitions*, of the notes to the Company's condensed consolidated financial statements (included in Item 8 of this Form 10-K) for additional details.

Fermentation Plant - Lake Providence, Louisiana

In February 2021, the Company acquired a fermentation plant located in Lake Providence, Louisiana. The Company believes this plant complements the rhamnolipid-based bio-surfactant technology the Company acquired from Logos Technologies in March 2020. Fermentation is a new platform technology for the Company and the Company is focusing efforts to further develop, integrate, produce and commercialize these unique surfactants moving forward. Bio-surfactants, produced via fermentation, are attractive due to their biodegradability, low toxicity, and in some cases, unique antimicrobial properties. These bio-surfactants offer synergies in several strategic end use markets including oilfield, agriculture, personal care and household, industrial and institutional cleaning. The acquisition of this industrial scale fermentation plant represents the latest step in the Company's bio-surfactant commercialization efforts. This acquisition was accounted for as an asset acquisition. The purchase price of the acquisition was $3.5 million and was paid with cash on hand. See Note 20, *Acquisitions*, of the notes to the Company's condensed consolidated financial statements (included in Item 8 of this Form 10-K) for additional details.

Deferred Compensation Plans

The accounting for the Company's deferred compensation plans can cause period-to-period fluctuations in Company income and expenses. Compensation expense is recognized when the value of Company common stock and mutual fund investment assets held for the plans increase, and compensation income is recognized when the value 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 deferred compensation obligations) and the income statement line items in which the effects of the activities were recorded are displayed in the following tables:

	Income (Expense) For the Year Ended December 31			
(In millions)	2021	2020	Change	
Deferred Compensation (Operating expenses)	$ (6.9)	$ (10.0)	$ 3.1	(1)
Investment Income (Other, net)	2.8	1.6	1.2	
Realized/Unrealized Gains (Losses) on Investments (Other, net)	2.1	3.1	(1.0)	
Pretax Income Effect	$ (2.0)	$ (5.3)	$ 3.3	

	Income (Expense) For the Year Ended December 31			
(In millions)	2020	2019	Change	
Deferred Compensation (Operating expenses)	$ (10.0)	$ (15.1)	$ 5.1	(1)
Investment Income (Other, net)	1.6	0.9	0.7	
Realized/Unrealized Gains on Investments (Other, net)	3.1	3.8	(0.7)	
Pretax Income Effect	$ (5.3)	$ (10.4)	$ 5.1	

(1) See the *Segment Results – Corporate Expenses* sections of this MD&A for details regarding the period-over-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			
	2021	2020	2019	2018
Company Stock Price	$ 124.29	$ 119.32	$ 102.44	$ 74.00

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 statement line items for 2021 compared to 2020 and 2020 compared to 2019:

	For the Year Ended December 31		Increase (Decrease)	Increase Due to Foreign Currency Translation
(In millions)	2021	2020		
Net Sales	$ 2,346.0	$ 1,869.8	$ 476.2	$ 24.4
Gross Profit	395.8	383.6	12.2	2.6
Operating Income	170.8	171.5	(0.7)	1.4
Pretax Income	172.5	171.1	1.4	1.5

(In millions)	For the Year Ended December 31 2020	2019	Increase	(Decrease) Due to Foreign Currency Translation
Net Sales	$ 1,869.8	$ 1,858.7	11.1	$ (45.7)
Gross Profit	$ 383.6	$ 339.7	43.9	(10.2)
Operating Income	$ 171.5	$ 127.3	44.2	(7.7)
Pretax Income	$ 171.1	$ 125.9	45.2	(7.6)

Results of Operations

2021 Compared with 2020

<u>Summary</u>

Net income attributable to the Company in 2021 increased nine percent to $137.8 million, or $5.92 per diluted share, from $126.8 million, or $5.45 per diluted share in 2020. Adjusted net income increased nine percent to $143.5 million, or $6.16 per diluted share, from $132.0 million, or $5.68 per diluted share in 2020 (see the “Reconciliation of Non-GAAP Adjusted Net Income and Diluted Earnings per Share” section of this MD&A for a reconciliation 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, expenses and income for 2021 compared to 2020. A detailed discussion of segment operating performance for 2021, compared to 2020, follows the summary.

Consolidated net sales increased $476.2 million, or 25 percent, between years. Higher average selling prices, a two percent increase in sales volume and the favorable impact of foreign currency translation positively impacted the change in net sales by $415.2 million, $36.6 million and $24.4 million, respectively. The increase in average selling prices was primarily due to the pass-through of higher raw material costs and more favorable product and customer mix. Sales volume in the Polymer and Specialty Products segments increased 29 percent and six percent, respectively. The increase in Polymer sales volume was primarily attributable to the first quarter 2021 INVISTA aromatic polyester polyol acquisition, the gradual recovery from COVID-19 delays and cancellations of reroofing and new construction projects, and the non-recurrence of the power outage at the Company’s Millsdale, Illinois facility in the first quarter of 2020. Sales volume for the Surfactant segment declined five percent year-over-year mostly due to lower sales volume in the consumer product end markets. The consumer product business has been negatively impacted by supply chain disruptions, feedstock supply issues in 2021 (following severe weather in Texas and the U.S. Gulf Coast area), customer inventory rebalancing efforts and lower demand for consumer cleaning products versus the COVID-19 pandemic peak in 2020. The favorable foreign currency translation reflects a weaker U.S. dollar against the majority of currencies where the Company has foreign operations.

Operating income decreased slightly from $171.5 million in 2020 to $170.8 million in 2021. Surfactant operating income decreased $3.1 million, or two percent, versus operating income reported in 2020. Polymer and Specialty Products operating income increased $5.4 million and $0.2 million, respectively, year-over-year. Corporate expenses, including deferred compensation and business restructuring/asset disposition expenses, increased $3.2 million year-over-year. Deferred compensation expense decreased $3.1 million and business restructuring/asset disposition expenses increased $2.1 million between years. Corporate expenses, excluding deferred compensation and business restructuring/asset disposition expenses, increased $4.2 million between years largely due to higher insurance premiums, cloud application costs, USEPA environmental oversight costs at the Company’s Maywood, New Jersey site, and corporate headquarter-related expenses (inclusive of the non-recurrence of a sales and use tax refund received in the second quarter of 2020). Foreign currency translation had a $1.4 million positive impact on operating income in 2021 versus the prior year.

Operating expenses (including deferred compensation and business restructuring/asset disposition expenses) increased $12.9 million, or six percent, year-over-year. Changes in the individual income statement line items that comprise the Company’s operating expenses were as follows:

- Selling expenses increased $3.6 million, or seven percent, between years largely due to higher salaries, corporate headquarter-related expenses (inclusive of the non-recurrence of a sales and use tax refund received in the second quarter of 2020) and the unfavorable impact of foreign currency translation.
- Administrative expenses increased $5.5 million, or six percent, year-over-year primarily due to higher insurance premiums, salaries, USEPA environmental remediation oversight costs, cloud application costs, corporate headquarter-related expenses (inclusive of the non-recurrence of a sales and use tax refund received in the second quarter of 2020) and the unfavorable impact of foreign currency translation.
- Research, development and technical service (R&D) expenses increased $4.7 million, or eight percent, year-over-year primarily due to higher salaries, outside services, corporate headquarter-related expenses (inclusive of the non-recurrence of a sale and use tax refund received in the second quarter of 2020) and the unfavorable impact of foreign currency translation.

- Deferred compensation expense decreased $3.1 million, or 31 percent, year-over-year primarily due to a $4.97 per share increase in the market price of Company common stock during 2021 compared to a $16.88 per share increase during 2020. See the *Overview* and *Segment Results - Corporate Expenses* sections of this MD&A for further details.
- Business restructuring/asset disposition expenses were $3.4 million in 2021 versus $1.2 million in 2020. The 2021 expenses include a $2.7 million loss on the sale of a corporate headquarter building and $0.7 million of ongoing decommissioning costs associated with the Company's manufacturing facility in Canada (that ceased operations in the fourth quarter of 2016). The 2020 restructuring expenses were comprised of decommissioning costs associated with the Canadian plant closure ($1.1 million) and decommissioning costs associated with the Company's 2018 sulfonation shut down in Germany ($0.1 million). See Note 22, *Business Restructuring*, of the notes to the Company's consolidated financial statements (included in Item 8 of this Form 10-K) for additional details.

Net interest expense in 2021 increased $0.3 million, or six percent, versus the prior year. This increase was primarily due to lower interest income earned in 2021 due to lower cash deposits.

Other, net was $7.5 million of income in 2021 versus $5.0 million of income in 2020. The Company recognized $5.2 million of investment income (including realized and unrealized gains and losses) for the Company's deferred compensation and supplemental defined contribution mutual fund assets in 2021 compared to $4.8 million of investment income in 2020. The Company also recognized $1.0 million of income related to the dissolution of its China joint venture in 2021. In addition, the Company recognized $2.1 million of lower net periodic pension costs and other retirement obligations in 2021 versus the prior year along with foreign exchange gains of $0.5 million in 2021 versus $1.4 million of foreign exchange gains in 2020.

The Company's effective tax rate was 20.1 percent in 2021 compared to 25.4 percent in 2020. This decrease was primarily attributable to: (a) an increase in U.S. tax benefits related to the Company's 2021 research and development tax credits and FDII/GILTI computations; (b) an increase in U.S. tax benefits related to the Company's prior year research and development tax credits and FDII/GILTI computations; and (c) a non-recurring unfavorable tax cost in the fourth quarter of 2020 related to cash repatriations to facilitate the 2021 INVISTA acquisition. See Note 9, *Income Taxes*, of the notes to the Company's consolidated financial statements (included in Item 8 of this Form 10-K) 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, 2021	December 31, 2020	Increase	Percent Change
Surfactants	$ 1,562,795	$ 1,351,686	$ 211,109	16
Polymers	713,440	452,277	261,163	58
Specialty Products	69,731	65,787	3,944	6
Total Net Sales	$ 2,345,966	$ 1,869,750	$ 476,216	25

(In thousands)	For the Year Ended			
Operating Income	December 31, 2021	December 31, 2020	Increase (Decrease)	Percent Change
Surfactants	$ 165,999	$ 169,101	$ (3,102)	-2
Polymers	73,591	68,214	5,377	8
Specialty Products	14,178	13,966	212	2
Segment Operating Income	$ 253,768	$ 251,281	$ 2,487	1
Corporate Expenses, Excluding Deferred Compensation Restructuring and asset disposition	72,739	68,559	4,180	6
Deferred Compensation Expense (Income)	6,895	9,988	(3,093)	-31
Business Restructuring and asset disposition	3,353	1,212	2,141	177
Total Operating Income	$ 170,781	$ 171,522	$ (741)	0

Surfactants

Surfactant 2021 net sales increased $211.1 million, or 16 percent, versus 2020 net sales. Higher average selling prices and the favorable impact of foreign currency translation positively impacted the change in net sales by $267.4 million and $18.3 million, respectively. The higher average selling prices were primarily due to more favorable product and customer mix and the pass-through of higher raw material costs. A five percent decline in sales volume negatively impacted the change in net sales by $74.6 million. Lower sales volume in the consumer product end markets accounted for most of the sales volume decrease. A year-over-year comparison of net sales by region follows:

	For the Year Ended			
(In thousands)	December 31, 2021	December 31, 2020	Increase	Percent Change
North America	$ 904,469	$ 826,841	$ 77,628	9
Europe	288,735	234,631	54,104	23
Latin America	299,601	234,568	65,033	28
Asia	69,990	55,646	14,344	26
Total Surfactants Segment	$ 1,562,795	$ 1,351,686	$ 211,109	16

Net sales for North American operations increased $77.6 million, or nine percent, between years. Higher average selling prices and the favorable impact of foreign currency translation positively impacted the change in net sales by $141.6 million and $2.0 million, respectively. The higher average selling prices were primarily due to more favorable product and customer mix and the pass-through of higher raw material costs. Sales volume declined eight percent and negatively impacted the year-over-year change in net sales by $66.0 million. Lower sales volume into the consumer product end markets accounted for most of the decline. Higher demand for products sold into the agricultural, oilfield and institutional cleaning end markets, partially offset the above. The consumer product business was negatively impacted by supply chain disruptions, inclusive of feedstock supply issues following the first quarter 2021 severe weather in Texas and the third quarter 2021 severe weather in the U.S. Gulf Coast, customer inventory rebalancing efforts and lower demand for consumer products versus the COVID-19 pandemic peak in 2020.

Net sales for European operations increased $54.1 million, or 23 percent, year-over-year. Higher average selling prices and the favorable impact of foreign currency translation positively impacted the change in net sales by $42.2 million and $13.5 million, respectively. The higher average selling prices were primarily due to the pass-through of higher raw material costs. A weaker U.S. dollar relative to the European euro and British pound sterling led to the favorable foreign currency translation effect. Sales volume decreased one percent and negatively impacted the change in net sales by $1.6 million year-over-year.

Net sales for Latin American operations increased $65.0 million, or 28 percent, between years. Higher average selling prices and the favorable impact of foreign currency translation positively impacted the change in net sales by $72.4 million and $2.0 million respectively. The higher average selling prices reflect more favorable product and customer mix, the pass-through of higher raw material costs, and $3.3 million of revenue recognition in 2021 related to a VAT tax recovery. Sales volume declined four percent and negatively impacted the change in net sales by $9.4 million. The decline in sales volume primarily reflects lower demand for products sold into the consumer product end markets that was partially offset by higher demand for products sold into the agricultural end market.

Net sales for Asian operations increased $14.3 million, or 26 percent, year-over-year. Higher average selling prices, a four percent increase in sales volume, and the favorable impact of foreign currency translation positively impacted the change in net sales by $11.2 million, $2.4 million and $0.7 million, respectively. The higher average selling prices were primarily due to the pass through of higher raw material costs and more favorable product and customer mix. The sales volume growth was mostly due to higher demand for products sold into the agricultural end market.

Surfactant operating income for 2021 decreased $3.1 million, or two percent, versus operating income reported in 2020. Gross profit increased $3.5 million, or one percent year-over-year. Operating expenses increased $6.6 million, or seven percent. Year-over-year comparisons of gross profit by region and total segment operating expenses and operating income follow:

(In thousands)	For the Year Ended December 31, 2021	For the Year Ended December 31, 2020	Increase (Decrease)	Percent Change
Gross Profit and Operating Income				
North America	$ 168,727	$ 173,213	$ (4,486)	-3
Europe	38,213	37,558	655	2
Latin America	54,769	46,284	8,485	18
Asia	11,215	12,414	(1,199)	-10
Surfactants Segment Gross Profit	$ 272,924	$ 269,469	$ 3,455	1
Operating Expenses	106,925	100,368	6,557	7
Operating Income	$ 165,999	$ 169,101	$ (3,102)	-2

Gross profit for North American operations decreased $4.5 million, or three percent, year-over-year primarily due to an eight percent decline in sales volume which negatively affected the change in gross profit by $13.8 million. Lower sales volume into the consumer product end markets accounted for most of the decline. Higher demand for products sold into the agricultural, oilfield and institutional cleaning end markets, partially offset the above. Higher unit margins positively impacted the change in gross profit by $9.2 million. The higher unit margins primarily reflect a more favorable customer and product mix that helped to partially offset higher 2021 supply chain expenses due to raw material availability, inflationary pressures, logistic constraints and higher planned maintenance. Prior year average unit margins were negatively impacted by high supply chain expenses related to the Millsdale, Illinois plant power outage that were partially offset by $5.2 million of insurance recovery.

Gross profit for European operations increased $0.7 million, or two percent, year-over-year. The favorable impact of foreign currency translation positively impacted the change in gross profit by $1.8 million. A weaker U.S. dollar relative to the European euro and British pound sterling led to the favorable foreign currency translation effect. Lower average unit margins and a one percent decline in sales volume negatively impacted the year-over-year change in gross profit by $0.8 million and $0.3 million, respectively.

Gross profit for Latin American operations increased $8.5 million, or 18 percent, primarily due to higher average unit margins. These higher average unit margins positively impacted the change in gross profit by $10.8 million. The higher average unit margins primarily reflect more favorable customer and product mix and $3.3 million of revenue recognized in 2021 related to a VAT tax recovery. A four percent decline in sales volume and the unfavorable impact of foreign currency translation negatively impacted the change in gross profit by $1.8 million and $0.5 million, respectively.

Gross profit for Asian operations decreased $1.2 million, or ten percent, primarily due to lower average unit margins. The lower unit margins negatively impacted the year-over-year change in gross profit by $1.8 million. Sales volume growth of four percent and the favorable impact of foreign currency translation positively impact the change in gross profit by $0.5 million and $0.1 million, respectively.

Operating expenses for the Surfactant segment increased $6.6 million, or seven percent, year-over-year. Most of this increase was attributable to higher salaries, outside services, corporate headquarter-related expenses (inclusive of the non-recurrence of a sales and use tax refund received in the second quarter of 2020) and the unfavorable effect of foreign currency translation.

Polymers

Polymers 2021 net sales increased $261.2 million, or 58 percent, versus net sales in 2020. A 29 percent increase in sales volume, higher average selling prices and the favorable impact of foreign currency translation positively impacted the change in net sales by $129.1 million, $126.4 million and $5.7 million, respectively. The higher sales volume primarily reflects the first quarter 2021 acquisition of INVISTA's polyester polyol business as well as higher demand for specialty polyols and phthalic anhydride. The higher average selling prices were mainly due to the pass-through of higher raw material costs. A year-over-year comparison of net sales by region follows:

(In thousands)	For the Year Ended December 31, 2021	For the Year Ended December 31, 2020	Increase	Percent Change
North America	$ 364,382	$ 265,700	$ 98,682	37
Europe	302,137	147,289	154,848	105
Asia and Other	46,921	39,288	7,633	19
Total Polymers Segment	$ 713,440	$ 452,277	$ 261,163	58

Net sales for North American operations increased $98.7 million, or 37 percent, due to a 23 percent increase in sales volume and higher average selling prices. These two items positively impacted the change in net sales by $61.2 million and $37.5 million, respectively. Sales volume of polyols used in rigid foam applications increased 19 percent year-over-year primarily due to the first quarter 2021 INVISTA polyester polyol acquisition and the gradual recovery from COVID-19 related delays of re-roofing and new construction projects. Sales volume of polyols used in rigid foam applications, excluding the impact of the INVISTA acquisition, increased two percent. Sales volume of specialty polyols and phthalic anhydride increased 36 percent and 33 percent, respectively, due to stronger demand within these markets. The phthalic anhydride sales volume improvement was also attributable to the non-recurrence of the Millsdale, Illinois plant power outage in 2020. Higher average selling prices were primarily due to the pass-through of higher raw material costs.

Net sales for European operations increased $154.8 million, or 105 percent, year-over-year. Higher average selling prices, a 45 percent increase in sales volume and the favorable impact of foreign currency translation positively impacted the year-over-year change in net sales by $85.9 million, $66.1million and $2.8 million, respectively. The increase in sales volume is primarily due to the first quarter 2021 INVISTA polyester polyol business acquisition. Sales volume, excluding the impact of the INVISTA acquisition, was flat versus prior year. The higher average selling prices were primarily due to the pass-through of higher raw material costs.

Net sales for Asian and Other operations increased $7.6 million, or 19 percent, primarily due to higher average selling prices and the favorable impact of foreign currency translation. These items positively impacted the change in net sales by $5.0 million and $2.9 million, respectively. The higher average selling prices were primarily due to the pass-through of higher raw material costs. Sales volume declined one percent year-over-year.

Polymer operating income for 2021 increased $5.4 million, or eight percent, versus operating income for 2020. Gross profit increased $8.6 million, or nine percent, year-over-year. Operating expenses increased $3.3 million, or 12 percent, versus prior year. Year-over-year comparisons of gross profit by region and total segment operating expenses and operating income follow:

(In thousands)	For the Year Ended December 31, 2021	For the Year Ended December 31, 2020	Increase (Decrease)	Percent Change
Gross Profit and Operating Income				
North America	$ 53,610	$ 60,161	$ (6,551)	-11
Europe	46,372	26,555	19,817	75
Asia and Other	5,073	9,691	(4,618)	-48
Polymers Segment Gross Profit	$ 105,055	$ 96,407	$ 8,648	9
Operating Expenses	31,464	28,193	3,271	12
Operating Income	$ 73,591	$ 68,214	$ 5,377	8

Gross profit for North American operations decreased $6.6 million, or 11 percent primarily due to lower average unit margins. The lower average unit margins negatively impacted the year-over-year change in gross profit by $20.4 million. The lower average unit margins reflect higher feedstock costs, feedstock availability and supply chain inflationary pressures in 2021 that exceeded the year-over-year benefit from the non-recurrence of the power outage at the Company's Millsdale, Illinois site (partially offset by $12.8 million of insurance recovery) and incremental raw material costs incurred in 2020 as a result of the Illinois River lock closures. Sales volume increased 23 percent year-over-year and positively impacted the change in gross profit by $13.8 million.

Gross profit for European operations increased $19.8 million, or 75 percent, due to a 45 percent increase in sales volume, higher average unit margins and the favorable impact of foreign currency translation. These items positively impacted the year-over-year change in gross profit by $11.9 million, $7.2 million, and $0.7 million, respectively.

Gross profit for Asia and Other operations declined $4.6 million, or 48 percent, primarily due to lower average unit margins that negatively impacted the change in gross profit by $4.9 million. The lower unit margins were primarily due to the non-recurrence of $3.7 million of government settlements, related to the government-mandated China JV shutdown in 2012, received in 2020. A one percent decline in sales volume negatively impacted the change in gross profit by $0.1 million. The favorable impact of foreign currency translation positively impacted the change in gross profit by $0.4 million.

Operating expenses for the Polymers segment increased $3.3 million, or 12 percent, year-over-year. The majority of the increase was due to higher salaries and incremental expenses incurred in 2021 due to the INVISTA polyester polyol acquisition.

Specialty Products

Specialty Products net sales increased $3.9 million, or six percent, versus net sales in 2020. This increase reflects sales volume growth of six percent and higher average selling prices. Gross profit was flat versus prior year and operating income increased $0.2 million. Most of the sales volume growth reflects improved volume within the medium chain triglycerides (MCT) product line.

Corporate Expenses

Corporate expenses, which include deferred compensation, business restructuring/asset disposition and other operating expenses that are not allocated to the reportable segments, increased $3.2 million between years. Corporate expenses were $83.0 million in 2021 versus $79.8 million in the prior year. This increase was primarily attributable to higher insurance premiums, salaries, USEPA environmental remediation oversight costs at the Company's Maywood, New Jersey site, cloud application costs, corporate headquarter-related expenses (inclusive of the non-recurrence of a sales and use tax refund received in the second quarter of 2020) and the unfavorable impact of foreign currency translation. In addition, business restructuring/asset disposition expenses increased $2.1 million between years primarily due to a $2.7 million loss incurred on the sale of a corporate headquarter building in 2021. Partially offsetting the above were lower deferred compensation expenses, which declined $3.1 million year-over-year.

Deferred compensation expense decreased $3.1 million, or 31 percent, between years. This decrease was primarily due to a $4.97 per share increase in the market price of the Company's common stock during 2021 compared to a $16.88 per share increase during 2020. The following table presents the period-end Company common stock prices used in the computation of deferred compensation expenses in 2021 and 2020:

	December 31			
	2021	2020	2019	2018
Company Stock Price	$ 124.29	$ 119.32	$ 102.44	$ 74.00

2020 Compared with 2019

<u>Summary</u>

Net income attributable to the Company for 2020 increased 23 percent from $103.1 million, or $4.42 per diluted share in 2019 to $126.8 million, or $5.45 per diluted share, in 2020. Adjusted net income increased 11 percent to $132.0 million, or $5.68 per diluted share, from $119.4 million, or $5.12 per diluted share in 2019 (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, expenses and income. A detailed discussion of segment operating performance for 2020 compared to 2019 follows the summary.

Consolidated net sales increased $11.1 million, or one percent, year-over-year. Consolidated sales volume increased three percent, which positively impacted the change in net sales by $49.6 million. Sales volume in the Surfactant segment increased six percent while sales volume in the Polymer and Specialty Products segments decreased five and three percent, respectively. Higher average selling prices positively impacted the change in net sales by $7.1 million. Foreign currency translation negatively impacted the year-over-year change in net sales by $45.7 million primarily due to a stronger U.S. dollar against the Latin American currencies used in certain of the Company's foreign operations.

Operating income increased $44.3 million, or 35 percent, year-over-year. Surfactant operating income increased $46.3 million, or 38 percent versus operating income reported in 2019. Polymer and Specialty Products operating income decreased $1.4 million and

$2.4 million, respectively. Deferred compensation expenses and business restructuring expenses decreased $5.2 million and $1.5 million, respectively, year-over-year. Corporate expenses, excluding deferred compensation and business restructuring expenses, were up $4.9 million year-over-year. Most of this increase reflects higher incentive-based compensation and acquisition-related expenses, partially offset by lower environmental remediation expenses. Foreign currency translation had an unfavorable $7.7 million effect on year-over-year consolidated operating income.

Operating expenses (including deferred compensation expense and business restructuring expenses) decreased $0.4 million, or less than one percent, between years. Changes in the individual income statement line items that comprise the Company's operating expenses were as follows:

- Selling expenses decreased $1.4 million, or two percent, year-over-year largely due to lower travel and entertainment expenses as a result of COVID-19 restrictions.
- Administrative expenses increased $4.8 million, or six percent, year-over-year. This increase was primarily due to higher incentive-based compensation and acquisition-related expenses in 2020 that were partially offset by non-recurring 2019 environmental remediation costs. The majority of the environmental remediation costs in 2019 related to the Company's Maywood, New Jersey site and the Company's formerly-owned site in Wilmington, Massachusetts.
- Research, development and technical service (R&D) expenses increased $2.9 million, or five percent, year-over-year primarily due to higher incentive-based compensation expenses.
- Deferred compensation expense decreased $5.2 million primarily due to a $16.88 per share increase in the market price of Company common stock during 2020 compared to a $28.44 per share increase in 2019. See the *Overview* and *Segment Results - Corporate Expenses* sections of this MD&A for further details.
- Business restructuring expenses were $1.2 million in 2020 versus $2.7 million in 2019. The 2020 restructuring expenses were primarily comprised of ongoing decommissioning costs associated with the Company's manufacturing facility in Canada that ceased operations in the fourth quarter of 2016 ($1.1 million) and decommissioning expenses associated with the Company's 2018 sulfonation shut down in Germany ($0.1 million). The 2019 restructuring expenses were primarily comprised of severance and office shutdown expenses related to the Specialty Products Netherland office restructuring ($0.7 million), decommissioning costs associated with the Company's Canadian plant closure ($1.4 million), and decommissioning expenses associated with the Company's sulfonation shut down in Germany ($0.9 million). See Note 22, *Business Restructuring*, of the notes to the Company's consolidated financial statements (included in Item 8 of this Form 10-K) for additional details.

Net interest expense in 2020 declined $0.5 million, or nine percent, versus 2019. This decrease was primarily attributable to lower interest expense resulting from scheduled debt repayments and the non-recurrence of two one-time events in 2019: (a) the recognition of make-whole interest expense associated with the Company's voluntary prepayment of its 5.88 percent Senior Notes, partially offset by (b) the recognition of interest income associated with a Brazilian VAT tax recovery. Partially offsetting the above was lower interest income earned in 2020 as a result of lower global interest rates.

Other, net was $5.0 million of income in 2020 versus $4.6 million of income in 2019. The Company recognized $4.8 million of investment income (including realized and unrealized gains and losses) for the Company's deferred compensation and supplemental defined contribution mutual fund assets in 2020 compared to $4.9 million of investment income in 2019. In addition, the Company reported foreign exchange gains of $1.4 million in 2020 versus $0.1 million of foreign exchange gains in 2019. The Company also reported $0.5 million of higher net periodic pension cost expense in 2020 versus 2019. Other miscellaneous items resulted in $0.2 million of higher expense in 2020 versus 2019.

The year-to-date effective tax rate was 25.4 percent in 2020 compared to 18.1 percent in 2019. This increase was primarily attributable to: (a) the non-recurrence of a favorable tax benefit recognized in the third quarter of 2019 on incremental U.S. tax credits identified as part of a research and development tax credit study; (b) a non-recurring unfavorable tax cost in the fourth quarter of 2020 related to cash repatriations to facilitate the 2021 INVISTA acquisition, and (c) a less favorable geographical mix of income in 2020 versus 2019. See Note 9, *Income Taxes*, of the notes to the Company's consolidated financial statements (included in Item 8 of this Form 10-K) for a reconciliation of the statutory U.S. federal income tax rate to the effective tax rate.

Segment Results

(In thousands) Net Sales	For the Year Ended December 31, 2020	December 31, 2019	Increase (Decrease)	Percent Change
Surfactants	$ 1,351,686	$ 1,272,723	$ 78,963	6
Polymers	452,277	512,347	(60,070)	-12
Specialty Products	65,787	73,675	(7,888)	-11
Total Net Sales	$ 1,869,750	$ 1,858,745	$ 11,005	1

(In thousands) Operating Income	For the Year Ended December 31, 2020	December 31, 2019	Increase (Decrease)	Percent Change
Surfactants	$ 169,101	$ 122,780	$ 46,321	38
Polymers	68,214	69,567	(1,353)	-2
Specialty Products	13,966	16,415	(2,449)	-15
Segment Operating Income	$ 251,281	$ 208,762	$ 42,519	20
Corporate Expenses, Excluding Deferred Compensation and Restructuring	68,559	63,618	4,941	8
Deferred Compensation Expense (Income)	9,988	15,140	(5,152)	-34
Business Restructuring	1,212	2,744	(1,532)	-56
Total Operating Income	$ 171,522	$ 127,260	$ 44,262	35

Surfactants

Surfactant 2020 net sales increased $79.0 million, or six percent, versus 2019 net sales. A six percent increase in sales volume and higher average selling prices positively impacted the change in net sales by $67.2 million and $55.0 million, respectively. The unfavorable impact of foreign currency translation negatively impacted the change in net sales by $43.2 million. A year-over-year comparison of net sales by region follows:

(In thousands)	For the Year Ended December 31, 2020	December 31, 2019	Increase (Decrease)	Percent Change
North America	$ 826,841	$ 766,341	$ 60,500	8
Europe	234,631	240,711	(6,080)	-3
Latin America	234,568	212,405	22,163	10
Asia	55,646	53,266	2,380	4
Total Surfactants Segment	$ 1,351,686	$ 1,272,723	$ 78,963	6

Net sales for North American operations increased $60.5 million, or eight percent, year-over-year. A six percent increase in sales volume and higher average selling prices positively impacted the change in net sales by $43.3 million and $17.6 million, respectively. The sales volume growth was primarily due to higher demand for products sold into the consumer product end markets, driven by increased demand for cleaning, disinfection and personal wash products as a result of COVID-19, partially offset by lower demand in the functional product end markets, principally agriculture and oilfield. Foreign currency translation negatively impacted the change in net sales by $0.4 million.

Net sales for European operations decreased $6.1 million, or three percent, year-over-year. A seven percent decrease in sales volume negatively impacted the change in net sales $16.6 million. The lower sales volume reflects lost business at one customer that was partially offset by higher demand for products from our distribution partners. Higher average selling prices and the favorable impact of foreign currency translation positively impacted the change in net sales by $7.5 million and $3.0 million, respectively. A weaker U.S. dollar relative to the European euro and British pound sterling led to the foreign currency translation effect.

Net sales for Latin American operations increased $22.2 million, or ten percent, between years, primarily due to an 18 percent increase in sales volume and higher average selling prices. These items positively impacted the year-over-year change in net sales by $38.8 million and $31.3 million, respectively. The sales volume growth primarily reflects higher demand for products sold into the consumer product end markets, driven by increased demand for cleaning products, and a fully operational Ecatepec, Mexico facility in 2020. Partially offsetting the above was the unfavorable impact of foreign currency translation which negatively impacted the change in net sales by $47.9 million. The year-over-year strengthening of the U.S dollar against the Brazilian real, Mexican peso and the Colombian peso led to the foreign currency effect.

Net sales for Asian operations increased $2.4 million, or four percent, primarily due to a three percent increase in sales volume and the favorable impact of foreign currency translation. These items favorably impacted the change in net sales by $1.7 million and $2.1 million, respectively. The sales volume growth was mostly due to higher demand for products sold into the agricultural end market. A weaker U.S. dollar relative to the Philippine peso led to the foreign currency translation effect. Lower average selling prices negatively impacted the change in net sales by $1.4 million.

Surfactant operating income for 2020 increased $46.3 million, or 38 percent, versus operating income reported in 2019. Gross profit increased $49.1 million, or 22 percent year-over-year. Operating expenses increased $2.8 million, or three 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, 2020	December 31, 2019	Increase (Decrease)	Percent Change
Gross Profit and Operating Income				
North America	$ 173,213	$ 140,335	$ 32,878	23
Europe	37,558	34,083	3,475	10
Latin America	46,284	32,292	13,992	43
Asia	12,414	13,622	(1,208)	-9
Surfactants Segment Gross Profit	$ 269,469	$ 220,332	$ 49,137	22
Operating Expenses	100,368	97,552	2,816	3
Operating Income	$ 169,101	$ 122,780	$ 46,321	38

Gross profit for North American operations increased $32.9 million, or 23 percent, between years primarily due to higher unit margins that positively impacted the change in gross profit by $25.0 million. The higher unit margins primarily reflect a more favorable customer and product mix largely due to increased volume to the Company’s Tier 2 and Tier 3 customers. A six percent increase in sales volumes positively impacted the change in gross profit by $7.9 million. Most of the sales volume increase was attributable to increased demand for cleaning, disinfection and personal wash products.

Gross profit for European operations increased $3.5 million, or ten percent, primarily due to higher unit margins and the favorable impact of foreign currency translation. These items positively impacted the change in gross profit by $5.4 million and $0.4 million, respectively. The higher unit margins were attributable to a more favorable product and customer mix in 2020 resulting from higher demand for biocidal quaternaries and lower demand for commodity softeners. A seven percent decline in sales volume negatively impacted the change in gross profit by $2.3 million.

Gross profit for Latin American operations increased $14.0 million, or 43 percent, year-over-year primarily due to higher unit margins that contributed $19.0 million to the increase in net sales. The higher unit margins primarily reflect the Company’s Mexican sites being fully operational in 2020 versus the prior year when Mexico incurred higher freight and supply chain expenses as a result of the 2019 sulfonation equipment failure at the Ecatepec, Mexico site. In addition, more favorable customer and product mix favorably impacted gross margins largely due to increased volume to the Company’s Tier 2 and Tier 3 customers. An 18 percent increase in sales volume favorably impacted net sales by $5.9 million. The sales volume growth primarily reflects higher demand for products sold into the consumer products end markets, driven by increased demand for cleaning and disinfection products, and a fully operational Ecatepec, Mexico facility in 2020. The unfavorable impact of foreign currency translation negatively impacted gross margins by $10.9 million.

Gross profit for Asian operations decreased $1.2 million, or nine percent, primarily due to lower unit margins. The lower unit margins negatively impacted the change in gross profit by $1.9 million. The lower unit margins were partially offset by a three percent increase in sales volume and the favorable impact of foreign currency translation. These items positively impacted the change in gross profit by $0.4 million and $0.3 million, respectively.

Operating expenses for the Surfactant segment increased $2.8 million, or three percent, year-over-year. Most of this increase was attributable to higher salaries and incentive-based compensation expense.

Polymers

Polymers 2020 net sales decreased $60.1 million, or 12 percent, versus net sales in 2019. A five percent decrease in sales volume negatively impacted the year-over-year change in net sales by $29.9 million. The unfavorable impact of lower average selling prices and foreign currency translation negatively impacted the year-over-year change in net sales by $27.6 million and $2.6 million, respectively. A year-over-year comparison of net sales by region follows:

	For the Year Ended			
(In thousands)	December 31, 2020	December 31, 2019	Increase (Decrease)	Percent Change
North America	$ 265,700	$ 314,549	$ (48,849)	-16
Europe	147,289	158,455	(11,166)	-7
Asia and Other	39,288	39,343	(55)	0
Total Polymers Segment	$ 452,277	$ 512,347	$ (60,070)	-12

Net sales for North American operations declined $48.8 million, or 16 percent, primarily due to a 10 percent decrease in sales volume. The decline in sales volume negatively impacted the year-over-year change in net sales by $32.2 million. Sales volume of phthalic anhydride decreased 38 percent due to volume lost as a result of the first quarter 2020 Millsdale, Illinois plant power outage, share loss at one customer and soft market demand. Sales volume of polyols used in rigid foam applications decreased two percent due to COVID-19 related construction project delays and cancellations. Lower average selling prices negatively impacted the change in net sales by $16.6 million. The lower average selling prices reflect lower raw material market prices.

Net sales for European operations decreased $11.2 million, or seven percent, year-over-year. Lower average selling prices, the unfavorable impact of foreign currency translation and a one percent decrease in sales volume negatively impacted the year-over-year change in net sales by $8.2 million, $1.9 million and $1.0 million, respectively. The lower average selling prices reflect lower raw material costs and a stronger U.S. dollar relative to the Polish zloty led to the foreign currency translation impact. The decline in sales volume principally reflects softer demand during the first half of 2020 due to deferred and canceled construction projects as a result of COVID-19.

Net sales for Asian and Other operations were flat year-over-year. A nine percent increase in sales volume favorably impacted the change in net sales by $3.4 million and was primarily attributable to higher demand in livestock and cold storage end markets within China. Lower average selling prices and the unfavorable impact of foreign currency translation negatively impacted the change in net sales by $2.7 million and $0.7 million, respectively. The lower average selling prices reflect lower raw material costs.

Polymer operating income for 2020 decreased $1.4 million, or two percent, versus operating income for 2019. Gross profit decreased $2.0 million, or two percent, year-over-year. Operating expenses decreased $0.7 million, or two percent, in 2020 versus 2019. 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, 2020	December 31, 2019	Increase (Decrease)	Percent Change
Gross Profit and Operating Income				
North America	$ 60,161	$ 69,362	$ (9,201)	-13
Europe	26,555	23,299	3,256	14
Asia and Other	9,691	5,752	3,939	68
Polymers Segment Gross Profit	$ 96,407	$ 98,413	$ (2,006)	-2
Operating Expenses	28,193	28,846	(653)	-2
Operating Income	$ 68,214	$ 69,567	$ (1,353)	-2

Gross profit for North American operations decreased $9.2 million, or 13 percent, primarily due to a 10 percent decline in sales volume and lower unit margins. These two items negatively impacted the year-over-year change in gross profit by $7.1 million and $2.1 million, respectively. The decrease in sales volume primarily reflects lost phthalic anhydride volume due to the first quarter 2020 Millsdale, Illinois power outage and share loss at one customer, combined with lower rigid polyols demand as a result of COVID-19 related construction project delays and cancellations. The lower unit margins were primarily attributable to the first quarter 2020 power outage at the Company's Millsdale, Illinois facility, which forced a temporary production shutdown and resulted in higher maintenance, supply chain costs and unit overhead rates. In addition, incremental raw material costs were incurred in 2020 as a result of the Illinois River lock closures. Partially offsetting the above was a $12.8 million insurance recovery related to the Millsdale power outage.

Gross profit for European operations increased $3.3 million, or 14 percent, primarily due to higher unit margins. The higher unit margins positively impacted the year-over-year change in gross profit by $3.6 million. The higher unit margins partially reflect the non-recurrence of a maintenance shutdown at the Company's Germany site in 2019. The unfavorable impact of foreign currency translation and a one percent decline in sales volume negatively impacted the change in gross profit by $0.2 million and $0.1 million, respectively. The decline in sales volume primarily reflects lower demand for polyols used in rigid foam applications during the first half of 2020 due to deferred or canceled construction projects as a result of COVID-19.

Gross profit for Asia and Other operations improved $3.9 million, or 68 percent, due to higher unit margins, nine percent volume growth and the favorable impact of foreign currency translation. These items positively impacted the year-over-year change in gross profit by $3.2 million, $0.5 million and $0.2 million, respectively. Unit margins benefited from a government reimbursement related to the government-mandated China JV shutdown in 2012 ($3.7 million) and were negatively impacted by the higher cost of outsourcing due to unplanned production issues in the fourth quarter of 2020.

Operating expenses for the Polymers segment decreased $0.7 million, or two percent, year-over-year.

Specialty Products

Specialty Products net sales decreased $7.9 million, or 11 percent, versus net sales in 2019. This decrease was primarily due to a three percent decrease in sales volume and lower average selling prices. Gross profit and operating income decreased $2.5 million and $2.4 million, respectively, primarily due to lower margins within the Company's medium chain triglycerides product line.

Corporate Expenses

Corporate expenses, which include deferred compensation, business restructuring and other operating expenses that are not allocated to the reportable segments, decreased $1.7 million between 2020 and 2019. Corporate expenses were $79.8 million in 2020 versus $81.5 million in 2019. This decrease was primarily attributable to lower deferred compensation ($5.2 million), business restructuring ($1.5 million) and environmental remediation expenses ($3.7 million) in 2020. Higher incentive-based compensation and acquisition-related expenses partially offset the decreases above.

Deferred compensation expense decreased $5.2 million between years. This decrease was primarily due to a $16.88 per share increase in the market price of the Company's common stock in 2020 compared to a $28.44 per share increase in 2019. The following table presents the period-end Company common stock market prices used in the computation of deferred compensation expenses in 2020 and 2019:

	December 31		
	2020	2019	2018
Company Stock Price	$ 119.32	$ 102.44	$ 74.00

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 proceeds from debt issuance and borrowings under credit facilities. The Company's principal uses of cash have included funding operating activities, capital investments and acquisitions. The generation of cash from operations and the Company's ability to access capital markets is expected to meet the Company's requirements and plans for cash for working capital, capital expenditures, debt maturities, contributions to pension plans, dividend distributions to stockholders, share repurchases and other needs.

For 2021, cash generated from operating activities was a cash source of $72.1 million versus a source of $235.2 million in 2020. For 2021, investing cash outflows totaled $376.8 million versus a cash outflow of $139.0 million in 2020. Financing activities were a source of $117.3 million in 2021 versus a use of $64.9 million in 2020. Cash and cash equivalents decreased by $190.8 million compared to December 31, 2020, inclusive of a $3.4 million unfavorable foreign exchange rate impact.

As of December 31, 2021, the Company's cash and cash equivalents totaled $159.2 million. Cash in U.S. demand deposit accounts and money market funds totaled $25.3 million and $46.7 million, respectively. The Company's non-U.S. subsidiaries held $87.2 million of cash outside the United States as of December 31, 2021.

Operating Activity

Net income in 2021 increased by $10.2 million versus the comparable period in 2020. Working capital was a cash use of $140.5 million in 2021 versus a cash source of $3.0 million in 2020.

Accounts receivable were a use of $104.2 million in 2021 compared to a use of $23.4 million in 2020. Inventories were a use of $79.3 million in 2021 versus a use of $15.4 million in 2020. Accounts payable and accrued liabilities were a source of $44.4 million in 2021 compared to a source of $55.7 million for the same period in 2020.

Working capital requirements were higher in 2021 compared to 2020 primarily due to the changes noted in the preceding paragraph. The major factors driving the increase in working capital in 2021 were significantly higher raw material costs, sales volume growth of two percent and significantly higher average selling prices. It is management's opinion that the Company's liquidity is sufficient to provide for potential increases in working capital requirements during 2022.

Investing Activity

Cash used for investing activities increased $237.8 million year-over-year. Cash used for capital expenditures was $194.5 million in 2021 versus $125.8 million in 2020. This increase is largely attributable to the previously announced alkoxylation plant the Company is building at its Pasadena, Texas site and equipment upgrades to meet new 1,4 Dioxane regulatory requirements. Other investing activities were a use of $182.3 million in 2021 versus a use of $13.2 million in 2020. The current year increase primarily reflects the Company's acquisition of INVISTA's aromatic polyester polyol business and associated assets for $183.7 million, net of cash received, during the first quarter of 2021.

For 2022, the Company estimates that total capital expenditures will range from $350.0 million to $375.0 million. This projected spending includes the new alkoxylation plant that is being built in Pasadena, Texas, equipment upgrades to meet new 1,4 Dioxane regulatory requirements, growth initiatives, infrastructure, and optimization spending in the United States, Germany and Mexico.

Financing Activity

Cash flow from financing activities was a source of $117.3 million in 2021 versus a use of $64.9 million in 2020. The year-over-year change is primarily due to $200.0 million of cash received from the issuance of private placement notes in 2021.

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 to mitigate the dilutive effect of new shares issued under its compensation plans. The Company may, from time to time, seek to purchase additional amounts of its outstanding equity and/or retire 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, 2021, the Company purchased 135,103 shares of its common stock on the open market at a total cost of $17.0 million. At December 31, 2021, the Company has $150.0 million remaining under its Board of Directors share repurchase authorization.

Debt and Credit Facilities

Consolidated balance sheet debt increased by $164.9 million in 2021, from $198.7 million at December 31, 2020 to $363.6 million, primarily due to higher domestic debt. Net debt (which is defined as total debt minus cash – See the "Reconciliation of Non-GAAP Net Debt" section of this MD&A) increased by $355.7 million in 2021, from a negative $151.3 million to $204.4 million. This net debt change was due to a cash reduction of $190.8 million and debt increase of $164.9 million.

As of December 31, 2021, the ratio of total debt to total debt plus shareholders' equity was 25.3 percent compared to 16.8 percent at December 31, 2020. As of December 31, 2021, the ratio of net debt to net debt plus shareholders' equity was 16.0 percent versus a negative 18.1 percent as of December 31, 2020. At December 31, 2021, the Company's debt included $360.7 million of unsecured private placement notes, with maturities ranging from 2022 through 2031, that were issued to insurance companies pursuant to note purchase agreements (the Note Purchase Agreements) and $2.9 million of foreign credit line borrowings. The proceeds from the private placement 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 liquidity needs.

On June 10, 2021, the Company entered into a note purchase and private shelf agreement (the Prudential note purchase agreement) pursuant to which it issued and sold $50.0 million in aggregate principal amount of its 2.30% Senior Notes, Series 2021-A, due June 10, 2028 (the Series 2021-A Notes). The Series 2021-A Notes bear interest at a fixed rate of 2.30 percent, with interest to be paid semi-annually and with equal annual principal payments beginning on June 10, 2024 and continuing through final maturity on June 10, 2028. On December 10, 2021, pursuant to the Prudential note purchase agreement, the Company issued and sold $50.0 million in aggregate principal amount of its 2.73% Senior Notes, Series 2021-D, due December 10, 2031 (the Series 2021-D Notes). The Series 2021-D Notes bear interest at a fixed rate of 2.73 percent, with interest to be paid semi-annually and with equal annual principal payments beginning on December 10, 2025 and continuing through final maturity on December 10, 2031.

On June 10, 2021, the Company entered into a note purchase and master note agreement (the NYL note purchase agreement) pursuant to which, on September 23, 2021, the Company issued and sold $50.0 million in aggregate principal amount of its 2.37% Senior Notes, Series 2021-B, due September 23, 2028 (the Series 2021-B Notes). The Series 2021-B Notes bear interest at a fixed rate of 2.37 percent, with interest to be paid semi-annually and with equal annual principal payments beginning on September 23, 2024 and continuing through final maturity on September 23, 2028.

On December 10, 2021, pursuant to the NYL note purchase agreement, the Company issued and sold $50.0 million in aggregate principal amount of its 2.73% Senior Notes, Series 2021-C, due December 10, 2031 (the Series 2021-C Notes). The Series 2021-C Notes bear interest at a fixed rate of 2.73 percent, with interest to be paid semi-annually and with equal annual principal payments beginning on December 10, 2025 and continuing through final maturity on December 10, 2031.

On November 19, 2021, pursuant to the NYL note purchase agreement, the Company agreed to issue $25 million in aggregate principal amount of its 2.83% Senior Notes, Series 2022-A, due March 1, 2032 (the Series 2022-A Notes) on March 1, 2022, subject to customary closing conditions. On November 19, 2021, pursuant to the Prudential note purchase agreement, the Company agreed to issue $50 million in aggregate principal amount of its 2.83% Senior Notes, Series 2022-B, due March 1, 2032 (the Series 2022-B Notes) on March 1, 2022, subject to customary closing conditions. The Series 2022-A Notes and the Series 2022-B Notes will bear interest at a fixed rate of 2.83 percent, with interest to be paid semi-annually and with equal annual principal payments beginning on March 1, 2026 and continuing through final maturity on March 1, 2032.

The proceeds of the issuance of the Series 2021-A Notes, Series 2021-B Notes, Series 2021-C Notes and Series 2021-D Notes are being used and the proceeds of the issuance of the Series 2022-A Notes and the Series 2022-B Notes will be used primarily for capital expenditures, to pay down existing debt and for other corporate purposes. The Prudential note purchase agreement and the NYL note purchase agreement require the maintenance of certain financial ratios, contain covenants that are substantially similar to the Company’s existing long-term debt and provide for customary events of default.

On January 30, 2018, the Company entered into a five-year committed $350.0 million multi-currency revolving credit facility with a syndicate of banks that matures on January 30, 2023. This credit agreement allows the Company to make unsecured borrowings, as requested from time to time, to finance working capital needs, permitted acquisitions, capital expenditures and for general corporate purposes. This unsecured facility is the Company’s primary source of short-term borrowings. As of December 31, 2021, the Company had outstanding letters of credit totaling $6.7 million under the revolving credit agreement and no borrowings, with $343.3 million remaining available.

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, 2021, the Company’s foreign subsidiaries had outstanding debt of 2.9 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, 2021, 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 $750.0 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 beginning 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, *Debt*, of the notes to the consolidated financial statements (included in Item 8 of this Form 10-K).

The Company believes it was in compliance with all of its loan agreements as of December 31, 2021.

Material Cash Requirements

At December 31, 2021, the Company's material cash requirements included the following contractual obligations (including estimated payments by period):

	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 (1)	$ 364,290	$ 40,718	$ 86,429	$ 111,430	$ 125,713
Interest payments on debt obligations (2)	47,826	$ 11,284	$ 17,750	$ 11,207	$ 7,585
Operating lease obligations (3)	83,021	15,573	20,734	10,275	36,439
Purchase obligations (4)	8,362	7,037	1,325	—	—
Other (5)	50,257	14,498	5,735	7,659	22,365
Total	$ 553,756	$ 89,110	$ 131,973	$ 140,571	$ 192,102

(1) Excludes unamortized debt issuance costs of $0.7 million.

(2) Interest payments on debt obligations represent interest on all Company debt at December 31, 2021. Future interest rates may change, and, therefore, actual interest payments could differ from those disclosed in the above table.

(3) The majority of operating lease obligations consist of railcar and real estate leases.

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

(5) The "Other" category comprises deferred revenues that represent commitments to deliver products, expected 2022 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 $64.6 million of other non-current liabilities recorded on the balance sheet at December 31, 2021, as summarized in Note 15, *Other Non-Current Liabilities*, of the notes to the Company's consolidated financial statements (included in Item 8 of this Form 10-K). 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.

Off-Balance Sheet Arrangements

During the periods covered by this Form 10-K, the Company was not party to any off-balance sheet arrangements that have or are reasonably likely to have a material current or future effect on the Company's financial condition, revenues or expenses, results of operations, liquidity, cash requirements or capital resources.

Pension Plans

The Company sponsors a number of defined benefit pension plans, the most significant of which cover employees in the Company's 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 overfunded status (pretax) of the Company's defined benefit pension plans was $7.9 million at December 31, 2021, versus underfunded status (pretax) of $9.1 million at December 31, 2020. See Note 13, *Postretirement Benefit Plans*, of the notes to the Company's consolidated financial statements (included in Item 8 of this Form 10-K) for additional details.

The Company contributed $0.8 million to its defined benefit plans in 2021. In 2022, 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 2022 contribution requirement to the U.S. pension plans. Payments to participants in the unfunded non-qualified plans should approximate $0.3 million in 2022, which is similar to payments made in 2021.

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, 2021, the Company had a total of $6.7 million of outstanding standby letters of credit.

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 regulations 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 2021, the Company's expenditures for capital projects related to the environment were $13.4 million. Expenditures for capital projects related to the environment are capitalized and depreciated over their estimated useful lives, which are typically 10 to 15 years. Recurring costs associated with the operation and maintenance of facilities for waste treatment, waste disposal and managing environmental compliance in ongoing operations at the Company's manufacturing locations were approximately $34.9 million for 2021, $35.4 million for 2020 and $31.8 million for 2019.

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 these 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 $23.1 million to $41.7 million at December 31, 2021, compared to $22.9 million to $41.1 million at December 31, 2020. Within the range of possible environmental losses, management has currently 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. The Company's environmental and legal accruals totaled $23.1 million at December 31, 2021 as compared to $22.9 million at December 31, 2020. Because the liabilities accrued are estimates, actual amounts could differ materially from the amounts reported. During 2021, cash outlays related to legal and environmental matters approximated $3.5 million compared to $4.5 million expended in 2020.

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 and the possibility of other viable entities' responsibilities for cleanup, 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 the Company's consolidated financial statements (included in Item 8 of this Form 10-K) for a summary of the significant environmental proceedings related to certain environmental sites.

Outlook

Management believes that demand for Surfactant products sold into the institutional cleaning, agricultural and oilfield end markets should improve versus 2021. Management remains cautiously optimistic that consumer consumption of cleaning, disinfection and personal wash products will improve slightly in 2022 after significant de-stocking efforts in 2021. Management believes the Polymer segment will deliver year-over-year growth in 2022 and that the long-term prospects for the Polymer segment remain attractive as energy conservation efforts and more stringent building codes are expected to continue. Management believes its Specialty Products segment will improve slightly year-over-year. Despite optimism that demand for the Company's products will remain strong, management also believes the Company will continue to be challenged by the same external factors that impacted the Company in 2021.

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, liabilities, income and expenses at the date of the financial statements and to provide disclosures of contingent assets, liabilities and related 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:

Business Combinations

The Company makes acquisitions from time to time. When such acquisitions occur, the Company applies the accounting guidance per FASB ASC Topic 805, *Business Combinations* (ASC 805), to determine whether the acquisition should be treated as an asset acquisition or a business combination. When the acquisition meets the criteria of a business combination the Company recognizes the identifiable assets acquired and liabilities assumed at their estimated fair values as of the date of the acquisition. The Company recognizes goodwill for any portion of the purchase price that exceeds the sum of the net fair value of all the assets purchased in the acquisition and the liabilities assumed. Considerable estimates, complex judgments and assumptions are typically required to arrive at the fair value of elements acquired in a business combination, inclusive of discount rates, customer attrition rates, royalty rates, economic lives, and estimated future cash flows expected to be generated from the assets acquired. These items are typically most relevant to the fair valuation of identifiable intangible assets and property, plant and equipment.

In some instances, the purchase price allocation of an acquisition is not complete by the end of a reporting period. This situation most typically arises when an acquisition is complex and/or completed very close to the end of a reporting period and all necessary information is not available by the end of the reporting period in which the acquisition occurs. In these instances, the Company reports provisional amounts for any incomplete items and makes subsequent adjustments as necessary information becomes available or determines that additional information is not obtainable. Any subsequent adjustments could have a material impact on the Company's financial condition or results of operations as they could impact the initial fair values assigned to intangible assets and property, plant and equipment and/or their estimated economic lives. ASC 805 requires purchase price allocations to be finalized within one year from the acquisition date.

Goodwill and Intangible Assets

The Company's intangible assets include patents, agreements not to compete, trademarks, customer lists and relationships, technological and manufacturing know-how and goodwill, all of which were acquired as part of business combinations or asset acquisitions. Goodwill represents the excess of cost over the fair value of net assets acquired in a business combination. 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. Intangible assets with finite lives are amortized over the useful lives of the assets. Currently, the useful lives for the Company's finite-life intangible assets are as follows: patents – 15 years; non-compete agreements – three years; trademarks – eight to 11 years; customer relationships – 12 to 20 years and know-how – seven to 20 years. 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 on a reporting unit level. The Company's reporting units are typically defined as one level below operating segments and highly correlated to geographic regions. The Company tests goodwill for impairment annually (the Company conducts its goodwill impairment testing during the second quarter of each calendar year), or more frequently when events or changes in circumstances indicate it is more likely than not that the fair value of the reporting unit to which goodwill relates has declined below its carrying value. In this case, the Company would recognize an impairment charge for the amount by which the carrying value exceeds the reporting unit's fair value. Goodwill is evaluated for impairment using qualitative and/or quantitative testing procedures. The Company has the option to first perform qualitative testing to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying value. If the Company chooses not to complete a qualitative assessment for a given reporting unit, or if the initial assessment indicates that it is more likely than not that the estimated fair value of a reporting unit is less than its carrying value, additional quantitative testing is performed.

When estimating a reporting unit's fair value as part of the quantitative assessment, the Company uses a combination of market and income-based methodologies. The market approach uses a combination of earnings before interest, taxes, depreciation and amortization (EBITDA) and EBITDA multiples to estimate a reporting unit's fair value. EBITDA multiples typically mirror similar businesses or comparative companies whose securities are actively traded in public markets. Significant degradation of either EBITDA or EBITDA multiples could result in a triggering event, requiring goodwill to be tested for impairment during an interim period. The income approach takes into consideration multiple variables, including forecasted sales volume and operating income, current industry and economic conditions, historical results and other elements to calculate the present value of future cash flows. The income approach fair value calculations include estimates of long-term growth rates and discount rates that are commensurate with the risks and uncertainty inherent in the respective reporting units. The Company reported no goodwill or intangible asset impairments in any of the periods presented in these condensed consolidated financial statements.

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 or at the elected time, 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, 2021 and December 31, 2020, the Company's deferred compensation liability was $61.2 million and $61.6 million, respectively. In 2021 and 2020, approximately 47 percent and 53 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 $0.2 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. Estimating the possible costs of remediation requires making assumptions related to the nature and extent of contamination and the methods and resulting costs of remediation. Some of the factors on which the Company bases its estimates include information provided by decisions rendered by State and Federal environmental regulatory agencies, information provided by feasibility studies, and remedial action plans developed.

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.

Recent Accounting Pronouncements

See Note 1, *Summary of Significant Accounting Policies*, of the notes to the Company's consolidated financial statements (included in Item 8 of this Form 10-K) for information on recent accounting pronouncements which affect the Company.

Non-GAAP Reconciliations

The Company believes that certain non-GAAP measures, when presented in conjunction with comparable GAAP measures, are useful for evaluating the Company's performance and financial condition. 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 Company's definitions of these adjusted measures may differ from similarly titled measures used by other entities.

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

Management uses the non-GAAP adjusted net income metric to evaluate the Company's operating performance. Management excludes the items listed in the table below because they are non-operational items. The cumulative tax effect was calculated using the statutory tax rates for the jurisdictions in which the transactions occurred.

	Twelve Months Ended December 31					
(In millions, except per share amounts)	2021		2020		2019	
	Net Income	Diluted EPS	Net Income	Diluted EPS	Net Income	Diluted EPS
Net Income Attributable to the Company as Reported	**$ 137.8**	**$ 5.92**	**$ 126.8**	**$ 5.45**	**$ 103.1**	**$ 4.42**
Deferred Compensation (Income) Expense	2.0	0.08	5.3	0.23	10.5	0.45
Business Restructuring/Asset Disposition	3.3	0.14	1.2	0.05	2.7	0.12
Cash-Settled SARs	0.2	0.01	0.4	0.02	2.8	0.12
Environmental Remediation	2.0	0.08	—	—	4.3	0.18
Voluntary Debt Prepayment	0.0	—	—	—	1.2	0.05
Cumulative Tax Effect on Above Adjustment Items	(1.8)	(0.07)	(1.7)	(0.07)	(5.2)	(0.22)
Adjusted Net Income	143.5	$ 6.16	$ 132.0	$ 5.68	$ 119.4	$ 5.12

Reconciliations of Non-GAAP Net Debt

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.

(In millions)	December 31	
	2021	2020
Current Maturities of Long-Term Debt as Reported	$ 40.7	$ 37.9
Long-Term Debt as Reported	$ 322.9	$ 160.8
Total Debt as Reported	$ 363.6	$ 198.7
Less Cash and Cash Equivalents as Reported	$ (159.2)	$ (349.9)
Net Debt	$ 204.4	$ (151.2)
Equity	$ 1,074.2	$ 986.7
Net Debt plus Equity	$ 1,278.6	$ 835.5
Net Debt/Net Debt plus Equity	16%	-18%

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, 2021, the Company had forward contracts with an aggregated notional amount of $51.5 million. Except for the Company's subsidiaries in Argentina, Brazil, China and Colombia, foreign currency exposures are substantially hedged by forward contracts. The fair value of all forward contracts as of December 31, 2021, was a net asset of $0.1 million. As of December 31, 2021, 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 $4.3 million.

Interest Rates

The Company's debt was comprised entirely of fixed-rate borrowings totaling $360.7 million and foreign subsidiaries $2.9 million of unsecured debt as of December 31, 2021. 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 2022.

The fair value of the Company's long term fixed-rate debt, including current maturities, was estimated to be $366.6 million as of December 31, 2021, which was approximately $5.2 million above the carrying value. Market risk was estimated as the potential increase to the fair value that would result from a hypothetical 10 percent decrease in the Company's weighted average long-term borrowing rates at December 31, 2021, or $3.9 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, 2021, the Company had open forward contracts for the purchase of 1.4 million dekatherms of natural gas at a cost of $5.7 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 $0.6 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

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Stepan Company and subsidiaries (the "Company") as of December 31, 2021 and 2020, the related consolidated statements of income, comprehensive income, shareholders' equity, and cash flows for each of the three years in the period ended December 31, 2021, 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, 2021 and 2020, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2021, 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, 2021, 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 25, 2022 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 misstatement 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.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current-period audit of the financial statements that were communicated or required to be communicated to the audit committee and that (1) relate to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing a separate opinion on the critical audit matters or on the accounts or disclosures to which they relate.

Contingencies — Refer to Note 16 to the financial statements

Critical Audit Matter Description

The Company is involved in several property sites where the Company may be exposed to liabilities for the remediation of environmental contamination. Environmental loss contingencies are evaluated based on the likelihood of the Company incurring a liability and whether a loss or range of losses is reasonably estimable. The likelihood and amount of a loss or range of losses are estimated based on currently available information and assumptions related to the nature and extent of contamination and the methods and resulting costs of remediation. Past estimates for environmental liabilities are subject to adjustment as new facts emerge during the investigatory and remediation processes.

Given the subjectivity of estimating the likelihood of a loss, the range of potential loss, and the amount of liability to recognize, performing audit procedures to evaluate whether environmental loss contingencies were appropriately recorded and disclosed as of December 31, 2021, required especially challenging, subjective and complex auditor judgment and an increased extent of effort.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to the environmental loss contingencies included the following, among others:

- We tested the effectiveness of internal controls related to the Company's development of the estimated environmental loss contingencies, including the assumptions related to the nature and extent of contamination and the methods and resulting costs of remediation.
- We inquired of Company legal counsel and external legal counsel to understand developments in environmental matters.
- We evaluated written responses received from external legal counsel as it relates to the environmental loss contingencies.
- We inquired of the Company's third-party environmental specialists to understand developments in environmental matters.
- We searched data on the U.S. Environmental Protection Agency website to identify any additional information relevant to the specific property sites.
- We read Board of Directors meeting minutes to identify any additional information relevant to the specific property sites.
- We evaluated whether the assumptions related to the nature and extent of contamination and the methods and resulting costs of remediation used by the Company to determine the estimated losses or ranges of losses were reasonable by comparing those assumptions to decisions rendered by state and Federal environmental regulatory agencies, information provided by feasibility studies and remedial action plans developed.
- If the Company's reasonable estimate of loss for a remediation site is a range, we evaluated whether the amount of the liability recognized by the Company within that range was reasonable based on the facts and circumstances specific to the remediation site.
- We evaluated the Company's environmental contingencies disclosures for consistency with our knowledge of the Company's environmental matters.

Acquisitions — Refer to Note 20 to the financial statements

Critical Audit Matter Description

The Company completed the acquisition of Arteva Specialties B.V., INV Performance, LLC, INVISTA Textiles (U.K.) Limited, INV Management Services, LLC, and INVISTA Equities, LLC (collectively, "INVISTA") to acquire INVISTA's aromatic polyester polyol business and associated assets. The acquisition has been accounted for under the acquisition method of accounting for business combinations. The net purchase price was comprised of the $165.0 million cash purchase price paid to the seller and $21.6 million of working capital measured at its fair value as of the acquisition date. Accordingly, the purchase price was allocated to the polyester polyol operations of the business using a discounted cash flow model. Following, the operations allocation, the purchase price was then allocated to the assets acquired and liabilities assumed compromising the polyester polyol operations business based on their respective fair values, including $64.8 million in goodwill and $46.0 million in intangibles. The operations allocation required management to make significant estimates and assumptions related to forecasts of future revenues and earnings before interest, taxes, depreciation, and amortization (EBITDA) and discount rates.

Given the operations allocation required management to make significant estimates and assumptions related to the forecasts of future costs, revenues, and EBITDA (the "forecasts"), as well as the selection of the discount rates, and considering the sensitivity of business assumptions used in the valuation, performing audit procedures to evaluate the reasonableness of the forecasts and selected discount rates required a high degree of auditor judgement and an increased extent of effort, including the need to involve fair value specialists.

How the Critical Audit Matter was Addressed in the Audit

Our audit procedures related to the acquisition included the following, among others:

- We tested the operating effectiveness of internal controls related to the Company's review of the stock and asset purchase agreement, review of opening balances, purchase price allocation specific to property and intangible assets, and cash flow forecast determination.
- We read and evaluated the purchase agreement and supporting schedules
- We evaluated the identification of tangible and intangible assets and liabilities for completeness

- We tested the classification of identifiable assets acquired and liabilities assumed in a business combination, including performing a sensitivity analysis on the intangible assets.

- For the tangible assets subject to valuation, internal fair value specialists were engaged to assist with (1) evaluating the reasonableness of the valuation methodology and valuation assumptions with generally accepted valuation practices (2) evaluating whether multiple valuation techniques are appropriate in the circumstances and for which sufficient data is available, and (3) evaluating whether the valuation techniques are appropriate in relation to the business, industry, and environment.

- With the assistance of our fair value specialists, we evaluated the reasonableness of the discount rates by (1) testing the source information underlying the determination of the discount rates and testing the mathematical accuracy of the calculation, (2) developing a range of independent estimates and comparing those to the discount rates selected by management, and (3) evaluating whether management's forecasts were consistent with the evidence obtained in other areas of the audit.

- We evaluated the reasonableness of management's forecasts by comparing the forecasts to (1) historical results, (2) internal communications to management and the Board of Directors, and (3) forecasted information included in industry reports and other economic indicators.

- We evaluated whether management's forecasts were consistent with evidence obtained in other areas of the audit.

/s/ Deloitte & Touche LLP
DELOITTE & TOUCHE LLP

Chicago, Illinois
February 25, 2022

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

Stepan Company
Consolidated Statements of Income
For the years ended December 31, 2021, 2020 and 2019

(In thousands, except per share amounts)	*2021*	*2020*	*2019*
Net Sales (Note 1)	$ 2,345,966	$ 1,869,750	$ 1,858,745
Cost of Sales	1,950,156	1,486,137	1,519,031
Gross Profit	395,810	383,613	339,714
Operating Expenses:			
Selling (Note 1)	59,186	55,543	56,956
Administrative (Note 1)	92,906	87,362	82,577
Research, development and technical services (Note 1)	62,689	57,986	55,037
Deferred compensation expense (Note 12)	6,895	9,988	15,140
	221,676	210,879	209,710
Business restructuring and loss on asset disposition (Note 22)	(3,353)	(1,212)	(2,744)
Operating Income	170,781	171,522	127,260
Other Income (Expense):			
Interest, net (Note 6)	(5,753)	(5,409)	(5,932)
Other, net (Note 8)	7,509	4,954	4,571
	1,756	(455)	(1,361)
Income Before Provision for Income Taxes	172,537	171,067	125,899
Provision for Income Taxes (Note 9) \	34,642	43,411	22,798
Net Income	137,895	127,656	103,101
Net (Income) Loss Attributable to Noncontrolling Interest (Note 1)	(91)	(886)	28
Net Income Attributable to Stepan Company	$ 137,804	$ 126,770	$ 103,129
Net Income Per Common Share Attributable to Stepan Company (Note 18):			
Basic	$ 6.01	$ 5.52	$ 4.47
Diluted	$ 5.92	$ 5.45	$ 4.42
Shares Used to Compute Net Income Per Common Share Attributable to Stepan Company (Note 18):			
Basic	22,922	22,949	23,054
Diluted	23,287	23,256	23,316

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, 2021, 2020 and 2019

(In thousands)	2021	2020	2019
Net Income	**$ 137,895**	$ 127,656	$ 103,101
Other Comprehensive Income:			
Foreign currency translation adjustments (Note 19)	**(28,154)**	(2,973)	4,425
Defined benefit pension plans:			
Net actuarial gain (loss) arising in period (net of tax expense of $2,661, tax benefit of $265 and tax expense of $1,263 for 2021, 2020 and 2019, respectively)	**8,188**	(996)	4,112
Amortization of prior service cost included in pension expense (net of taxes of $4, $3 and $3 for 2021, 2020 and 2019, respectively)	**8**	8	9
Amortization of actuarial loss included in pension expense (net of taxes of $1,157, $1,089 and $657 for 2021, 2020 and 2019, respectively)	**3,643**	3,332	2,082
Net defined benefit pension plan activity (Note 19)	**11,839**	2,344	6,203
Cash flow hedges:			
Reclassifications to income in period	**(9)**	(9)	(9)
Net cash flow hedge activity (Note 19)	**(9)**	(9)	(9)
Other Comprehensive Income	**(16,324)**	(638)	10,619
Comprehensive Income	**121,571**	127,018	113,720
Comprehensive Income Attributable to Noncontrolling Interest	**(122)**	(959)	47
Comprehensive Income Attributable to Stepan Company	**$ 121,449**	$ 126,059	$ 113,767

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

Stepan Company
Consolidated Balance Sheets
December 31, 2021 and 2020

(Dollars in thousands)	*2021*	*2020*
Assets		
Current Assets:		
Cash and cash equivalents	**$ 159,186**	$ 349,938
Receivables, less allowances of $10,157 in 2021 and $10,133 in 2020	**419,542**	301,318
Inventories (Note 5)	**305,538**	218,783
Other current assets	**29,102**	35,612
Total current assets	**913,368**	905,651
Property, Plant and Equipment:		
Land	**50,675**	27,135
Buildings and improvements	**260,809**	248,234
Machinery and equipment	**1,541,925**	1,476,675
Construction in progress	**237,548**	120,606
	2,090,957	1,872,650
Less: Accumulated depreciation	**(1,240,353)**	(1,189,983)
Property, plant and equipment, net	**850,604**	682,667
Goodwill, net (Note 4)	**97,187**	27,972
Other intangible assets, net (Note 4)	**60,784**	24,068
Long-term investments (Note 2)	**34,495**	30,652
Operating lease assets (Note 7)	**69,612**	62,421
Other non-current assets	**39,562**	18,905
Total Assets	**$ 2,065,612**	$ 1,752,336
Liabilities and Equity		
Current Liabilities:		
Current maturities of long-term debt (Note 6)	**$ 40,718**	$ 37,857
Accounts payable	**323,362**	236,750
Accrued liabilities (Note 14)	**136,396**	141,947
Total current liabilities	**500,476**	416,554
Deferred income taxes (Note 9)	**12,491**	20,745
Long-term debt, less current maturities (Note 6)	**322,862**	160,812
Non-current operating lease liability (Note 7)	**56,668**	51,567
Other non-current liabilities (Note 15)	**98,922**	114,293
Commitments and Contingencies (Note 16)		
Equity (Note 10):		
Common stock, $1 par value; 60,000,000 authorized shares; 26,760,714 issued shares in 2021 and 26,658,032 issued shares in 2020	**26,761**	26,658
Additional paid-in capital	**220,820**	206,716
Accumulated other comprehensive loss (Note 19)	**(153,236)**	(136,881)
Retained earnings	**1,133,550**	1,023,829
Less: Common treasury stock, at cost, 4,340,729 shares in 2021 and 4,185,242 shares in 2020	**(153,702)**	(133,629)
Total Stepan Company stockholders' equity	**1,074,193**	986,693
Noncontrolling interest	**—**	1,672
Total equity	**1,074,193**	988,365
Total Liabilities and Equity	**$ 2,065,612**	$ 1,752,336

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, 2021, 2020 and 2019

(In thousands)	*2021*	*2020*	*2019*
Cash Flows From Operating Activities			
Net income	**$ 137,895**	$ 127,656	$ 103,101
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	**90,876**	81,860	78,701
Deferred compensation	**6,895**	9,988	15,140
Realized and unrealized gain on long-term investments	**(2,289)**	(3,143)	(3,955)
Stock-based compensation	**11,716**	10,080	8,872
Deferred income taxes	**(33,605)**	(4,506)	(5,016)
Other non-cash items	**2,158**	3,068	2,240
Changes in assets and liabilities, excluding effects of acquisitions:			
Receivables, net	**(104,231)**	(23,417)	4,894
Inventories	**(79,258)**	(15,358)	28,460
Other current assets	**(1,434)**	(13,927)	(680)
Accounts payable and accrued liabilities	**44,414**	55,739	(15,084)
Pension liabilities	**(1,729)**	(612)	(790)
Environmental and legal liabilities	**450**	(3,021)	2,519
Deferred revenues	**277**	10,809	26
Net Cash Provided By Operating Activities	**72,135**	235,216	218,428
Cash Flows From Investing Activities			
Expenditures for property, plant and equipment	**(194,482)**	(125,792)	(105,572)
Proceeds from asset disposition	**4,149**	—	—
Asset acquisition (Note 20)	**(3,503)**	(2,040)	—
Business acquisitions, net of cash acquired (Note 20)	**(184,473)**	(13,519)	(9,000)
Other, net	**1,480**	2,317	1,905
Net Cash Used In Investing Activities	**(376,829)**	(139,034)	(112,667)
Cash Flows From Financing Activities			
Revolving debt and bank overdrafts, net (Note 6)	**2,861**	—	(7,495)
Other debt borrowings (Note 6)	**200,000**	—	—
Other debt repayments (Note 6)	**(37,858)**	(23,571)	(46,429)
Dividends paid	**(28,083)**	(25,405)	(23,097)
Company stock repurchased	**(16,969)**	(15,253)	(13,184)
Stock option exercises	**1,369**	2,926	3,037
Other, net	**(3,987)**	(3,631)	(3,326)
Net Cash (Used In) Provided By Financing Activities	**117,333**	(64,934)	(90,494)
Effect of Exchange Rate Changes on Cash	**(3,391)**	3,307	(78)
Net Increase (Decrease) in Cash and Cash Equivalents	**(190,752)**	34,555	15,189
Cash and Cash Equivalents at Beginning of Year	**349,938**	315,383	300,194
Cash and Cash Equivalents at End of Year	**$ 159,186**	$ 349,938	$ 315,383
Supplemental Cash Flow Information			
Cash payments of income taxes, net of refunds/payments	**$ 92,867**	$ 39,017	$ 29,331
Cash payments of interest	**$ 9,542**	$ 9,329	$ 12,250

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, 2019

		STEPAN COMPANY STOCKHOLDERS					
(In thousands, except share and per share amounts)	*Total*	*Common Stock*	*Additional Paid-in Capital*	*Common Treasury Stock*	*Accumulated Other Comprehensive Income (Loss)*	*Retained Earnings*	*Noncontrolling Interest*
Balance, December 31, 2018	$ 808,185	$ 26,309	$ 182,881	$ (97,389)	$ (141,483)	$ 837,107	$ 760
Issuance of 59,799 shares of common stock under stock option plan	3,037	60	2,977	—	—	—	—
Purchase of 144,457 shares of common stock	(13,184)	—	—	(13,184)	—	—	—
Stock-based and deferred compensation	3,835	124	7,277	(3,566)	—	—	—
Net income	103,101	—	—	—	—	103,129	(28)
Other comprehensive income	10,619	—	—	—	10,638	—	(19)
Cash dividends paid:							
Common stock ($1.030 per share)	(23,097)	—	—	—	—	(23,097)	—
Other (1)	—	—	—	—	(5,325)	5,325	—
Balance, December 31, 2019	$ 892,496	$ 26,493	$ 193,135	$ (114,139)	$ (136,170)	$ 922,464	$ 713

(1) Reflects beginning retained earnings adjustment as a result of the Company's first quarter 2019 adoption of ASU No. 2018-02, *Income Statement-Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income.*

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, 2020

		STEPAN COMPANY STOCKHOLDERS					
(In thousands, except share and per share amounts)	*Total*	*Common Stock*	*Additional Paid-in Capital*	*Common Treasury Stock*	*Accumulated Other Comprehensive Income (Loss)*	*Retained Earnings*	*Noncontrolling Interest*
Balance, December 31, 2019	$ 892,496	$ 26,493	$ 193,135	$ (114,139)	$ (136,170)	$ 922,464	$ 713
Issuance of 48,389 shares of common stock under stock option plan	2,926	48	2,878	—	—	—	—
Purchase of 173,956 shares of common stock	(15,253)	—	—	(15,253)	—	—	—
Stock-based and deferred compensation	6,583	117	10,703	(4,237)	—	—	—
Net income	127,656	—	—	—	—	126,770	886
Other comprehensive income	(638)	—	—	—	(711)	—	73
Cash dividends paid:							
Common stock ($1.130 per share)	(25,405)	—	—	—	—	(25,405)	—
Balance, December 31, 2020	$ 988,365	$ 26,658	$ 206,716	$ (133,629)	$ (136,881)	$ 1,023,829	$ 1,672

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, 2021

		STEPAN COMPANY STOCKHOLDERS					
(In thousands, except share and per share amounts)	*Total*	*Common Stock*	*Additional Paid-in Capital*	*Common Treasury Stock*	*Accumulated Other Comprehensive Income (Loss)*	*Retained Earnings*	*Noncontrolling Interest*
Balance, December 31, 2020	$ 988,365	$ 26,658	$ 206,716	$ (133,629)	$ (136,881)	$ 1,023,829	$ 1,672
Issuance of 20,435 shares of common stock under stock option plan	1,369	20	1,349	—	—	—	—
Purchase of 135,103 shares of common stock	(16,969)	—	—	(16,969)	—	—	—
Stock-based and deferred compensation	9,734	83	12,755	(3,104)	—	—	—
Net income	137,895	—	—	—	—	137,804	91
Other comprehensive income	(16,324)	—	—	—	(16,355)	—	31
Cash dividends paid:							
Common stock ($1.250 per share)	(28,083)	—	—	—	—	(28,083)	
Other (1)	(1,794)	—	—	—	—	—	(1,794)
Balance, December 31, 2021	$ 1,074,193	$ 26,761	$ 220,820	$ (153,702)	$ (153,236)	$ 1,133,550	$ —

(1) Reflects the derecognition of noncontrolling interest due to the dissolution of the China joint venture. See Note 1, *Summary of Significant Accounting Policies*, of the notes to the Company's consolidated financial statements (included in Item 8 of this Form 10-K).

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's (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, liabilities, income and expenses at the date of the financial statements and to provide disclosures of contingent assets, liabilities and related 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.

Prior to the fourth quarter of 2021, the Company had an 80 percent ownership interest in the Nanjing Stepan Jinling Chemical Limited Liability Company (a joint venture) and exercised controlling influence over the entity. As a result, the China joint venture results were included in the Company's consolidated financial statements. The partner's interest in the joint venture's net income was reported in the net income attributable to noncontrolling interest line of the consolidated statements of income and its interest in the net assets of the joint venture was reported in the noncontrolling interest line (a component of equity separate from Company equity) of the consolidated balance sheets. The joint venture was dissolved during the fourth quarter of 2021.

Business Combinations

The Company makes acquisitions from time to time. When such acquisitions occur, the Company applies the accounting guidance per FASB ASC Topic 805, *Business Combinations* (ASC 805), to determine whether the acquisition should be treated as an asset acquisition or a business combination. When the acquisition meets the criteria of a business combination the Company recognizes the identifiable assets acquired and liabilities assumed at their estimated fair values as of the date of the acquisition. The Company recognizes goodwill for any portion of the purchase price that exceeds the sum of the net fair value of all the assets purchased in the acquisition and the liabilities assumed. Considerable estimates, complex judgments and assumptions are typically required to arrive at the fair value of elements acquired in a business combination, inclusive of discount rates, customer attrition rates, royalty rates, economic lives, and estimated future cash flows expected to be generated from the assets acquired. These items are typically most relevant to the fair valuation of identifiable intangible assets and property, plant and equipment.

In some instances, the purchase price allocation of an acquisition is not complete by the end of a reporting period. This situation most typically arises when an acquisition is complex and/or completed very close to the end of a reporting period and all necessary information is not available by the end of the reporting period in which the acquisition occurs. In these instances, the Company reports provisional amounts for any incomplete items and makes subsequent adjustments as necessary information becomes available or determines that additional information is not obtainable. Any subsequent adjustments could have a material impact on the Company's financial condition or results of operations as they could impact the initial fair values assigned to intangible assets and property, plant and equipment and/or their estimated economic lives. ASC 805 requires purchase price allocations to be finalized within one year from the acquisition date.

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, 2021, the Company's cash and cash equivalents totaled $159,186,000 including $46,689,000 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 $25,253,000 and cash of the Company's non-U.S. subsidiaries held outside the U.S. totaled $87,244,000 as of December 31, 2021. At December 31, 2020, the Company's cash and cash equivalents totaled $349,938,000 including $123,695,000 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 $76,164,000 and cash of the Company's non-U.S. subsidiaries held outside the U.S. totaled $150,079,000 as of December 31, 2020.

Receivables and Credit Risk/Losses

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 both credit risk and losses on accounts receivable balances. The Company's credit risk and loss exposure predominately relates to the sale of products to its customers. When extending credit to customers the Company evaluates a customer's credit worthiness based on a combination of qualitative and quantitative factors, inclusive of, but not limited to, a customer's credit rating from external providers, financial condition and past payment experience. The Company performs credit reviews on all customers at inception and on a scheduled basis thereafter dependent on customer risk and the level of credit extended. Payment terms extended are short term in duration, typically ranging from 30 to 60 days. The majority of the Company's sales are made to large companies that are able to weather periodic changes in economic conditions. This risk of losses is further mitigated by the Company's 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 2021, 2020 or 2019.

The Company maintains allowances for potential credit losses. With the adoption of ASU No. 2016-13, *Financial Instruments – Credit Losses*, the Company assesses the likelihood of default based on various factors, including the length of time receivables are past due, historical experience, existing economic conditions and forward-looking economic forecasts. The Company also evaluates expected losses based on portfolios of data inclusive of geographical areas, specific end market uses of its products, etc. Although the Company's historical credit loss experience has not been significant, its exposure to credit losses may increase if customers are adversely affected by economic pressures or uncertainty due to domestic or global economic recessions, disruptions due to COVID-19, or other adverse global/regional events and customer specific factors. Specific customer allowances are recorded when a review of customer creditworthiness and current economic conditions indicate that collection is doubtful. General allowances are also maintained based on historical averages and trade receivable levels and incorporate existing economic conditions and forecast assumptions, when warranted. The Company reviews its reserves for credit losses on a quarterly basis. The Company also maintains other customer allowances that occur in the normal course of business. The adoption of ASU No. 2016-13 has not had a material impact on the Company's allowances for potential credit losses.

The following is an analysis of the allowance for doubtful accounts and other accounts receivable allowances for the years ended December 31, 2021, 2020 and 2019:

(In thousands)	**2021**	2020	2019
Balance at January 1	**$ 10,133**	$ 9,325	$ 9,654
Provision charged to income	**943**	864	29
Accounts written off, net of recoveries	**(919)**	(56)	(358)
Balance at December 31	**$ 10,157**	$ 10,133	$ 9,325

Inventories

Inventories are valued at cost, which is not in excess of market value, and include material, labor and plant overhead costs. Currently, the first in, first out (FIFO) method is used to determine the cost of the Company's inventory.

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 ($75,351,000, $69,234,000, and $58,464,000 in 2021, 2020 and 2019, 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. Long-lived assets are reviewed for impairment when conditions exist that indicate the carrying amount of the assets may not be fully recoverable. Such conditions could include significant adverse changes in the business environment, significant declines in forecasted operations or an approved plan to discontinue an asset or an asset group before the end of its useful life.

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. The Company adopted 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* in the first quarter of 2020. As a result, deferred implementation costs for hosted cloud computing service arrangements are now stated at historical cost and amortized on a straight-line basis over the term of the hosting arrangement.

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

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, *Fair Value Measurements*, of the notes to the Company's consolidated financial statements (included in Item 8 of this Form 10-K)), its outstanding debt for disclosure purposes (see Note 2, *Fair Value Measurements*, of the notes to the Company's consolidated financial statements (included in Item 8 of this Form 10-K)) and its pension plan assets (see Note 13, *Postretirement Benefit Plans*, of the notes to the Company's consolidated financial statements (included in Item 8 of this Form 10-K)).

The Company also applies fair value measurements to 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, *Revenue from Contracts with Customers*, of the notes to the Company's consolidated financial statements (included in Item 8 of this Form 10-K) for more details.

Cost of Sales

Cost of sales is comprised of raw material costs (including inbound freight expense to deliver the raw materials), manufacturing plant labor expenses and various manufacturing overhead expenses, such as utilities, maintenance, operating supplies, 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 is comprised of salaries and 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 is comprised of salaries and 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 $38,778,000, $35,999,000, and $34,139,000 in 2021, 2020 and 2019, respectively. The remainder of research, development and technical service expenses reflected on the consolidated statements of income relate to technical services, which include routine product testing, quality control and sales service support.

Compensation expense or income related to the Company's deferred compensation plans is presented in the deferred compensation expense line in the Consolidated Statements of Income. For more details, see Note 12, *Deferred Compensation*, of the notes to the Company's consolidated financial statements (included in Item 8 of this Form 10-K).

Environmental Expenditures

Environmental expenditures that relate to current operations are typically recorded 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. Estimating the possible costs of remediation requires making assumptions related to the nature and extent of contamination and the methods and resulting costs of remediation. 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, *Contingencies*, of the notes to the Company's consolidated financial statements (included in Item 8 of this Form 10-K) for environmental contingencies details.

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 – 15 years; non-compete agreements – three years; trademarks – eight to 11 years; customer relationships – 12 to 20 years and know-how – seven to 20 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, *Goodwill and Other Intangibles*, of the notes to the Company's consolidated financial statements (included in Item 8 of this Form 10-K) 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, *Income Taxes*, 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. See Note 9, *Income Taxes*, of the notes to the Company's consolidated financial statements (included in Item 8 of this Form 10-K) for more information about the Company's income taxes.

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 four 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 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 prior to 2015 are cash-settled, and SARs granted in 2015 and later are stock-settled. 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. Compensation expense for the stock-settled SARs is calculated in the same way as compensation expense for stock options. See Note 11, *Stock-based Compensation*, of the notes to the Company's consolidated financial statements (included in Item 8 of this Form 10-K) 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, *Earnings Per Share*, of the notes to the Company's consolidated financial statements (included in Item 8 of this Form 10-K) 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, *Accumulated Other Comprehensive Income (Loss)*, of the notes to the Company's consolidated financial statements (included in Item 8 of this Form 10-K) 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, *Segment Reporting*, of the notes to the Company's consolidated financial statements (included in Item 8 of this Form 10-K) for detailed information about the Company's segment reporting.

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, *Derivative Instruments*, of the notes to the Company's consolidated financial statements (included in Item 8 of this Form 10-K) for further information regarding the Company's use of derivatives.

At December 31, 2021, the Company held open forward contracts for the purchase of 1.4 million dekatherms of natural gas in 2022 at a cost of $5,712,000. 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 December 2019, the FASB issued ASU No. 2019-12, *Income Taxes (Topic 740), Simplifying the Accounting for Income Taxes*. This update provides guidance to reduce complexity in certain areas of accounting for income taxes. The amendments in this update are effective for fiscal years beginning after December 15, 2020. The adoption of this update did not have a material effect on the Company's financial position, results of operations and cash flows.

In March 2020, the FASB issued ASU No. 2020-04, *Reference Rate Reform (Topic 848) Facilitation of the Effect of Reference Rate Reform on Financial Reporting*. This update provides optional guidance for a limited period of time to ease the burden of implementing the usage of new reference rates. The amendments apply to contract modifications that replace a reference rate affected by reference rate reform and contemporaneous modifications of other contract terms related to the replacement of the reference rate. If elected the optional expedients to contract modifications must be applied consistently for all eligible contracts or eligible transactions. The amendments in this update may be implemented between March 12, 2020 and December 31, 2022. The guidance should be applied prospectively. The Company has not currently utilized any of the optional expedients of exceptions available under this ASU. The Company will continue to assess whether this ASU is applicable throughout the effective period.

In October 2021, the FASB issued ASU No. 2021-08, Business Combinations (Topic 805) *Accounting for Contract Assets and Contract Liabilities from Contracts with Customers* which improves the accounting for acquired revenue contracts with customers in a business combination by addressing current inconsistencies in recognition of an acquired contract liabilities as well as payment terms and their effect on subsequent revenue recognized by the acquirer. Under current GAAP, an acquirer generally recognizes assets acquired and liabilities assumed in a business combination, including contract assets and contract liabilities arising from revenue contracts with customers and other similar contracts that are accounted for in accordance with ASU No. 2014-09, *Revenue from Contracts with Customers* (Topic 606) at fair value on the acquisition date. This amendment requires acquiring entities to apply Topic

606 to recognize and measure contract assets and contract liabilities in a business combination. The amendments in this update are effective for fiscal years beginning after December 31, 2022 and should be applied prospectively. The Company is in the process of assessing the impact that adoption of ASU No. 2021-08 may 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, 2021 and 2020, 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. Fair value of cash and cash equivalents is a Level 1 measurement.

Derivative assets and liabilities

Derivative assets and liabilities include the foreign currency exchange contracts discussed in Note 3, *Derivative Instruments*, of the notes to the Company's consolidated financial statements (included in Item 8 of this Form 10-K). Fair value and carrying value were the same because the contracts were recorded at fair value. The fair values of the foreign currency contracts were calculated as the difference between the applicable forward foreign exchange rates at the reporting date and the contracted foreign exchange rates multiplied by the contracted notional amounts. The Company's fair value measurements for derivative assets and liabilities fall within Level 2 of the fair value hierarchy.

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 include 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, *Postretirement Benefit Plans*, of the notes to the Company's consolidated financial statements (included in Item 8 of this Form 10-K). 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 and therefore its fair value measurements for mutual fund assets fall within Level 1 of the fair value hierarchy.

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 reflects 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 within Level 2 of the fair value hierarchy.

At December 31, 2021 and 2020, 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 $710,000, and $617,000 as of December 31, 2021 and 2020, respectively):

(In thousands)	December 31	
	2021	2020
Fair value	**$ 369,456**	$ 210,370
Carrying value	**364,290**	199,286

The following tables present financial assets and liabilities, excluding cash and cash equivalents, measured on a recurring basis at fair value as of December 31, 2021 and 2020, and the level within the fair value hierarchy in which the fair value measurement falls:

(In thousands)	**December 2021**	**Level 1**	**Level 2**	**Level 3**
Mutual fund assets	**$ 34,495**	**$ 34,495**	**$ —**	**$ —**
Derivative assets:				
Foreign currency contracts	**436**	**—**	**436**	**—**
Total assets at fair value	**$ 34,931**	**$ 34,495**	**$ 436**	**$ —**
Derivative liabilities:				
Foreign currency contracts	**$ 338**	**$ —**	**$ 338**	**$ —**

(In thousands)	December 2020	Level 1	Level 2	Level 3
Mutual fund assets	$ 30,652	$ 30,652	$ —	$ —
Derivative assets:				
Foreign currency contracts	335	—	335	—
Total assets at fair value	$ 30,987	$ 30,652	$ 335	$ —
Derivative liabilities:				
Foreign currency contracts	$ 566	$ —	$ 566	$ —

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, 2021 and 2020, 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 $51,542,000 and $48,336,000, respectively.

The fair values of the derivative instruments held by the Company on December 31, 2021, and December 31, 2020, are disclosed in Note 2, *Fair Value Measurements*, of the notes to the Company's consolidated financial statements (included in Item 8 of this Form 10-K). Derivative instrument gains and losses for the years ended December 31, 2021, 2020 and 2019, were immaterial. For amounts reclassified out of AOCI into earnings for the years ended December 31, 2021, 2020 and 2019, see Note 19, *Accumulated Other Comprehensive Income (Loss)*, of the notes to the Company's consolidated financial statements (included in Item 8 of this Form 10-K).

4. Goodwill and Other Intangible Assets

The changes in the carrying value of goodwill for the years ended December 31, 2021 and 2020, were as follows:

(In thousands)	Surfactants Segment		Polymer Segment		Specialty Products Segment		Total	
	2021	2020	**2021**	2020	**2021**	2020	**2021**	2020
Balance as of January 1								
Goodwill	**$ 25,537**	$ 23,664	**$ 5,419**	$ 5,406	**$ 483**	$ 483	**$ 31,439**	$ 29,553
Accumulated impairment loss	**(3,467)**	(3,467)	**—**	—	**—**	—	**(3,467)**	(3,467)
Goodwill, net	**22,070**	20,197	**5,419**	5,406	**483**	483	**27,972**	26,086
Goodwill acquired (1)	**—**	4,225	**72,467**	—	**—**	—	**72,467**	4,225
Goodwill measurement period adjustment (1)	**940**	(336)	**—**	—	**—**	—	**940**	(336)
Foreign currency translation	**(788)**	(2,016)	**(3,404)**	13	**—**	—	**(4,192)**	(2,003)
Balance as of December 31								
Goodwill	**25,689**	25,537	**74,482**	5,419	**483**	483	**100,654**	31,439
Accumulated impairment loss	**(3,467)**	(3,467)	**—**	—	**—**	—	**(3,467)**	(3,467)
Goodwill, net	**$ 22,222**	$ 22,070	**$ 74,482**	$ 5,419	**$ 483**	$ 483	**$ 97,187**	$ 27,972

(1) See Note 20, *Acquisitions*, of the notes to the Company's consolidated financial statements (included in Item 8 of this Form 10-K) 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 2021 and 2020 tests indicated no impairment.

The following table presents the components of other intangible assets, all of which have finite lives, as of December 31, 2021 and 2020. The year-over-year changes in gross carrying values mainly resulted from acquisitions that took place in 2021 and the effects of foreign currency translation.

(In thousands)	Gross Carrying Value		Accumulated Amortization	
	December 31		December 31	
	2021	2020	**2021**	2020
Other Intangible Assets:				
Patents (2)	**$ 7,411**	$ 7,411	**$ 6,139**	$ 5,713
Non-compete agreements (2)	**594**	623	**404**	270
Trademarks (2)	**12,013**	4,087	**4,160**	2,905
Customer lists/relationships (2)	**44,447**	21,424	**9,557**	6,842
Supply contract	**1,472**	1,579	**1,472**	1,579
Know-how (1)(2)	**27,029**	14,183	**10,450**	7,930
Total	**$ 92,966**	$ 49,307	**$ 32,182**	$ 25,239

(1) 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

(2) The 2020 balances include intangible assets acquired as part of the Company's Clariant (Mexico) and Logos Technologies acquisitions in 2020. The 2021 balances include intangible assets acquired as part of the Company's INVISTA acquisition in January 2021. See Note 20, *Acquisitions*, of the notes to the Company's consolidated financial statements (included in Item 8 of this Form 10-K) for additional details.

Aggregate amortization expense for the years ended December 31, 2021, 2020 and 2019, was $7,292,000, $3,621,000, and $3,399,000, respectively. Estimated amortization expense for identifiable intangibles assets for each of the five succeeding fiscal years is as follows:

(In thousands)		
For year ended 12/31/22	$	6,918
For year ended 12/31/23		6,891
For year ended 12/31/24		6,609
For year ended 12/31/25		6,168
For year ended 12/31/26		5,845

5. *Inventories*

The composition of inventories was as follows:

	December 31			
(In thousands)	**2021**		2020	
Finished products	**$**	**184,010**	$	148,878
Raw materials		**121,528**		69,905
Total inventories	**$**	**305,538**	$	218,783

6. *Debt*

Debt comprised the following at December 31, 2021 and 2020:

(In thousands)	Maturity Dates	**December 31, 2021**		December 31, 2020	
Unsecured private placement notes					
3.95% (net of unamortized debt issuance cost of $230 and $273 for 2021 and 2020, respectively)	2022-2027	**$**	**85,485**	$	99,727
3.86% (net of unamortized debt issuance cost of 181 and $236 for 2021 and 2020, respectively)	2022-2025		**56,962**		71,193
4.86% (net of unamortized debt issuance cost of $69 and $108 for 2021 and 2020 respectively)	2022-2023		**18,502**		27,749
2.30% (net of unamortized debt issuance cost of $100 and $0 for 2021 and 2020, respectively)	2024-2028		**49,900**		—
2.37% (net of unamortized debt issuance cost of $108 and $0 for 2021 and 2020, respectively)	2024-2028		**49,892**		—
2.73% (net of unamortized debt issuance cost of $22 and $0 for 2021 and 2020, respectively)	2025-2031		**99,978**		—
Debt of foreign subsidiaries					
Unsecured bank debt, foreign currency	2022		**2,861**		—
Total debt		**$**	**363,580**	$	198,669
Less current maturities			**40,718**		37,857
Long-term debt		**$**	**322,862**	$	160,812

The Company's long-term debt financing is currently comprised of certain unsecured private placement notes issued to insurance companies, totaling $360,719,000 as of December 31, 2021. These notes are denominated in U.S. dollars and have fixed interest rates ranging from 2.30 percent to 4.86 percent. The notes had original maturities of seven to 12 years with mandatory amortization of principal beginning four, five and six years after issuance. The Company will be required to make amortization payments on the currently outstanding notes from 2022 to 2031.

On June 10, 2021, the Company entered into the Prudential note purchase agreement pursuant to which it issued and sold $50,000,000 in aggregate principal amount of its Series 2021-A Notes. The Series 2021-A Notes bear interest at a fixed rate of 2.30%, with interest to be paid semi-annually and with equal annual principal payments beginning on June 10, 2024 and continuing through final maturity on June 10, 2028. On December 10, 2021, pursuant to the Prudential note purchase agreement, the Company issued and sold $50,000,000 in aggregate principal amount of its Series 2021-D Notes. The Series 2021-D Notes bear interest at a fixed rate of 2.73%, with interest to be paid semi-annually and with equal annual principal payments beginning on December 10, 2025 and continuing through final maturity on December 10, 2031.

On June 10, 2021, the Company entered into the NYL note purchase agreement pursuant to which, on September 23, 2021, the Company issued and sold $50,000,000 in aggregate principal amount of its Series 2021-B Notes. The Series 2021-B Notes bear interest at a fixed rate of 2.37% with interest to be paid semi-annually and with equal annual principal payments beginning on September 23, 2024 and continuing through final maturity on September 23, 2028. On December 10, 2021, pursuant to the NYL note purchase agreement, the Company issued and sold $50,000,000 in aggregate principal amount of its Series 2021-C Notes. The Series 2021-C Notes bear interest at a fixed rate of 2.73% with interest to be paid semi-annually and with equal annual principal payments beginning on December 10, 2025 and continuing through final maturity on December 10, 2031.

The proceeds of the issuance of the Series 2021-A Notes, Series 2021-B Notes, Series 2021-C Notes and Series 2021-D Notes are being used for capital expenditures, to pay down existing debt and for other corporate purposes. The Prudential note purchase agreement and the NYL note purchase agreement require the maintenance of certain financial ratios, contain covenants that are substantially similar to the Company's existing long-term debt and provide for customary events of default.

The Company has a committed $350,000,000 multi-currency revolving credit agreement that expires on January 30, 2023. The Company maintains import letters of credit and 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. As of December 31, 2021, the Company had outstanding letters of credit totaling $6,720,000 and no outstanding borrowings under the revolving credit agreement. There was $343,280,000 available under the revolving credit agreement as of December 31, 2021.

Loans under the credit agreement may be incurred, at the discretion of the Company, with terms to maturity of one month, three months or 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.

The Company's foreign subsidiaries had $2,861,000 of unsecured debt at December 31, 2021.

The Company's loan agreements contain provisions, which, among others, require maintenance of certain financial ratios and place limitations on additional debt, investments and payment of dividends. Based on the loan agreement provisions that place limitations on dividend payments, unrestricted retained earnings (i.e., retained earnings available for dividend distribution) were $468,095,000 and $373,884,000 at December 31, 2021 and 2020, respectively.

Debt at December 31, 2021, matures as follows: $40,718,000 in 2022; $37,857,000 in 2023; $48,572,000 in 2024; $62,858,000 in 2025; $48,572,000 in 2026 and $125,713,000 after 2026. Debt maturing in 2022 includes $37,857,000 of scheduled repayments under long-term debt agreements. The Company's foreign subsidiaries routinely have short-term working capital loans. These short-term loan agreements could be supplemented, 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, 2021, 2020 and 2019, comprised the following:

(In thousands)	**2021**	2020	2019
Interest expense	**$ 10,145**	$ 9,859	$ 12,744
Interest income	**(1,255)**	(2,171)	(5,717)
	8,890	7,688	7,027
Capitalized interest	**(3,137)**	(2,279)	(1,095)
Interest expense, net	**$ 5,753**	$ 5,409	$ 5,932

7. Leases

The Company's operating leases are primarily comprised of real estate, railcar, storage tank, warehouse, auto, trailer and manufacturing/office equipment leases. Real estate and railcars comprise approximately 60 percent and 25 percent, respectively, of the Company's consolidated right of use (ROU) asset balance. Except for real estate, typical lease terms range from one to ten years. Real estate lease terms typically range from one to fifty years. The Company's four principal real estate leases consist of the office lease for the corporate headquarters in Northbrook, Illinois and land leases in the Philippines, Singapore and Lake Providence, Louisiana. As of December 31, 2021, the Company had railcar and storage tank leases valued at approximately $1,208,000, that had not commenced. These leases will commence in the first quarter of 2022.

As most of the Company's leases do not provide an implicit borrowing rate, the Company uses its incremental borrowing rate (IBR) based on the information available at the commencement date in determining the present value of lease payments. IBRs were specifically determined for the United States, Philippines, Singapore, Brazil and China, typically for five-year increments. The U.S. IBR was used for all other countries as the leases in these countries are not material. The total value of leases that reside in the five countries identified above represents approximately 98 percent of the Company's consolidated ROU asset balance. Lease cost is recognized in both the Cost of Sales and Operating Expenses sections of the Consolidated Statements of Income.

(In thousands)	**Year ended December 31, 2021**	Year ended December 31, 2020
Lease Cost		
Operating lease cost	**$ 15,630**	$ 11,821
Short-term lease cost	**6,570**	4,922
Variable lease cost	**892**	1,135
Total lease cost	**$ 23,092**	$ 17,878
Other Information		
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash flow from operating leases	**$ 14,885**	$ 11,843
Right-of-use assets obtained in exchange for operating lease liabilities	**19,610**	27,766

The following table outlines maturities of lease liabilities as of December 31, 2021:

(In thousands)	
Undiscounted Cash Flows:	
2022	$ 15,573
2023	12,679
2024	8,055
2025	5,946
2026	4,329
Subsequent to 2026	36,439
Total Undiscounted Cash Flows	$ 83,021
Less: Imputed interest	(12,447)
Present value	$ 70,574
Current operating lease liabilities (1)	13,906
Non-current operating lease liabilities	56,668
Total lease liabilities	$ 70,574

(1) This item is included in Accrued liabilities line on the Company's Consolidated Balance Sheet.

Weighted-average remaining lease term-operating leases	10 Years
Weighted-average discount rate-operating leases	2.9 %

8. Other, Net

Other, net in the Consolidated Statements of Income included the following for the years ended December 31, 2021, 2020 and 2019:

(In thousands)	***2021***	*2020*	*2019*
Foreign exchange gains	**$ 501**	$ 1,367	$ 123
Investment income	**2,886**	1,681	968
Realized and unrealized gains on investments	**2,289**	3,143	3,955
Net periodic benefit cost	**302**	(874)	(351)
Other retirement obligation	**559**	(363)	(694)
Gain on sale of asset	**—**	—	570
Gain on dissolution of the China joint venture	**972**	—	—
Other, net	**$ 7,509**	$ 4,954	$ 4,571

9. Income Taxes

The provisions for taxes on income and the related income before taxes for the years ended December 31, 2021, 2020 and 2019, were as follows:

(In thousands)	***2021***	*2020*	*2019*
Taxes on Income			
Federal			
Current	**$ 35,057**	$ 21,889	$ 9,998
Deferred	**(25,653)**	(3,453)	(2,879)
State			
Current	**9,320**	4,305	2,248
Deferred	**(6,556)**	(562)	(1,783)
Foreign			
Current	**23,870**	21,723	15,568
Deferred	**(1,396)**	(491)	(354)
Total	**$ 34,642**	$ 43,411	$ 22,798
Income before Taxes			
Domestic	**$ 77,696**	$ 81,906	$ 63,399
Foreign	**94,841**	89,161	62,500
Total	**$ 172,537**	$ 171,067	$ 125,899

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

(In thousands)		***2021 Amount***	*%*		***2020 Amount***	*%*		*2019 Amount*	*%*
Federal income tax provision at statutory tax rate	**$**	**36,233**	**21.0**	$	35,924	21.0	$	26,439	21.0
State income tax provision, less applicable federal tax benefit (1)		**2,184**	**1.3**		2,956	1.7		367	0.3
Foreign income taxed at different rates		**2,356**	**1.4**		1,964	1.1		623	0.5
U.S. taxation of foreign earnings (2)		**(134)**	**(0.1)**		4,134	2.4		2,349	1.9
Unrecognized tax benefits		**1,775**	**1.0**		1,454	0.8		2,954	2.3
Prior years return to provision true-up (3)		**(3,314)**	**(1.9)**		(588)	(0.3)		(1,740)	(1.4)
Stock based compensation, excess tax benefits		**(1,287)**	**(0.7)**		(1,816)	(1.1)		(1,633)	(1.3)
U.S. tax credits (4)		**(2,692)**	**(1.6)**		(1,831)	(1.1)		(6,412)	(5.1)
Non-deductible expenses and other items, net		**(479)**	**(0.3)**		1,214	0.9		(149)	(0.1)
Total income tax provision	**$**	**34,642**	**20.1**	$	43,411	25.4	$	22,798	18.1

(1) For 2019, amount includes incremental state research credits for the tax years 2015 - 2019 that were identified as part of a research and development tax credit study.

(2) Includes cost of global intangible low-taxed income (GILTI) in 2021, 2020 and 2019 plus other taxes paid or withheld on cash repatriated from foreign countries in 2021, 2020 and 2019. For 2021, includes the benefit of separate limitation loss foreign tax credit attributes, related to prior years, that were utilized in 2021.

(3) For 2021, amount resulted from a higher federal research credit, higher foreign-derived intangible income (FDII), and lower GILTI related to the 2020 tax year.

(4) For 2019, amount includes incremental federal research credits for 2015 - 2019 that were identified as part of a research and development tax credit study. Also includes a federal tax rate change due to the classification of certain 2016 and 2017 depreciable fixed assets as deductible research costs.

At December 31, 2021 and 2020, the tax effects of significant temporary differences representing deferred tax assets and liabilities were as follows:

(In thousands)	*2021*	*2020*
Deferred Tax Assets:		
Pensions	**$ 537**	$ 4,935
Deferred revenue	**3,444**	3,073
Other accruals and reserves	**13,331**	14,960
Legal and environmental accruals	**7,385**	7,055
Deferred compensation	**16,210**	16,222
Bad debt and rebate reserves	**2,706**	2,821
Non-U.S. subsidiaries net operating loss carryforwards	**1,494**	2,495
Amortization of intangibles	**5,092**	—
Inventories	**3,108**	—
Tax credit carryforwards	**2,829**	4,713
	$ 56,136	$ 56,274
Deferred Tax Liabilities:		
Depreciation	**$ (42,299)**	$ (62,986)
Unrealized foreign exchange loss	**(2,908)**	(2,444)
Amortization of intangibles	**—**	(842)
Inventories	**—**	(2,504)
Other	**(1,614)**	(386)
	$ (46,821)	$ (69,162)
Valuation Allowance	**$ (862)**	$ (896)
Net Deferred Tax Assets (Liabilities)	**$ 8,453**	$ (13,784)
Reconciliation to Consolidated Balance Sheet:		
Non-current deferred tax assets (in other non-current assets)	**20,944**	6,961
Non-current deferred tax liabilities	**(12,491)**	(20,745)
Net Deferred Tax Assets (Liabilities)	**$ 8,453**	$ (13,784)

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. Pursuant to the 2017 U.S. Tax Cuts and Jobs Act (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. As such, the Company intends to limit its distributions to earnings previously taxed in the U.S. or earnings that would qualify for the 100 percent dividends received deduction provided for in the Tax Act as long as such distributions would not result in any significant foreign taxes. In 2021, the Company repatriated $15,340,000 between May and December from its Brazilian, Colombian, and Mexican subsidiaries. The Company did not incur any incremental taxes as a result of this repatriation. In anticipation of the INVISTA acquisition, the Company's Philippines entities declared a cash dividend of approximately $20,700,000 to the U.S. parent in December 2020. The Company recorded $2,384,000 of additional income tax expense in 2020 as a result of the expected repatriation. The Company's U.S. parent received the cash in 2021. The effect of the adjustment on the 2020 effective tax rate was an increase of approximately 1.4 percent.

The Company evaluated its indefinite reinvestment assertion with regards to certain accumulated foreign earnings as of December 31, 2021. The Company does not consider the undistributed earnings of its Canadian subsidiary to be indefinitely reinvested in foreign operations to the extent of the subsidiary's paid-up capital (PUC) as determined under Canadian tax law which is used to determine tax-free distributions for Canadian tax purposes. The Company also does not consider the undistributed earnings of one of its Dutch subsidiaries, and one of its Singapore subsidiaries to be indefinitely reinvested in foreign operations. A distribution from any of these subsidiaries should not result in any significant foreign taxes to the extent of the distribution limitations discussed above and therefore, the Company has not recognized a deferred tax liability for these undistributed earnings as of December 31, 2021. In 2021, the Company dissolved its China joint venture that prior to dissolution had not been considered indefinitely reinvested. The dissolution resulted in $142,000 of additional income tax expense in 2021. The Company considers the undistributed earnings of its remaining foreign subsidiaries to be indefinitely reinvested in foreign operations. At this time, the determination of deferred tax liabilities on this amount is not practicable.

The Company had non-U.S. tax loss carryforwards of $3,351,000 (pretax) as of December 31, 2021, and $6,551,000 as of December 31, 2020, that are available for use by the Company between 2022 and 2029. The Company had tax credit carryforwards of $2,829,000 as of December 31, 2021, and $4,713,000 as of December 31, 2020, that are available for use by the Company between 2022 and 2034. The Company had non-U.S. capital loss carryforwards of $638,000 as of December 31, 2021, and $633,000 as of December 31, 2020. The Company's capital loss carryforwards do not expire.

As of December 31, 2021, and 2020, the Company had valuation allowances of $862,000 and $896,000, respectively, which were attributable to deferred tax assets in Canada, 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, 2021, 2020 and 2019, unrecognized tax benefits totaled $7,292,000, $4,735,000 and $3,273,000, 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 $6,973,000, $4,545,000 and $3,105,000 at December 31, 2021, 2020 and 2019, 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 2021, the Company recognized net interest and penalty expense of $260,000 compared to $31,000 of net interest and penalty expense in 2020 and $19,000 of net interest and penalty expense in 2019. At December 31, 2021 the liability for interest and penalties was $340,000 compared to $80,000 at December 31, 2020.

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 2016. Some foreign jurisdictions and various U.S. states jurisdictions may be subject to examination back to 2014.

During 2021, the Internal Revenue Service started its audit of the 2016-2019 tax years. As of December 31, 2021, these audits were still open and the Company had not been notified of any significant proposed adjustments.

Below are reconciliations of the January 1 and December 31 balances of unrecognized tax benefits for 2021, 2020 and 2019:

(In thousands)	**2021**	2020	2019
Unrecognized tax benefits, opening balance	**$ 4,735**	$ 3,273	$ 168
Gross increases – tax positions in prior period	**938**	190	2,760
Gross increases – current period tax positions	**1,662**	1,288	355
Foreign currency translation	**(14)**	15	7
Lapse of statute of limitations	**(29)**	(31)	(17)
Unrecognized tax benefits, ending balance	**$ 7,292**	$ 4,735	$ 3,273

10. Stockholders' Equity

At December 31, 2021 and 2020, treasury stock consisted of 4,340,729 shares and 4,185,242 shares of common stock, respectively. During 2021, 135,103 shares of Company common stock were purchased in the open market. In addition, 26,875 shares were received to settle employees' minimum statutory withholding taxes related to performance stock awards, exercised SARs and deferred compensation distributions. Also, 6,491 shares of treasury stock were distributed to participants under the Company's deferred compensation plan.

11. Stock-based Compensation

On December 31, 2021, the Company had outstanding stock options, stock awards and stock appreciation rights (SARs) awarded under its 2011 Incentive Compensation Plan (2011 Plan). Stock options, stock awards and SARs are currently granted to Company executives and other key employees. In addition, stock awards are currently granted to non-employee directors of the Company. 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, 2021, there were 528,479 shares available for grant under the 2011 Plan.

Compensation expense recorded in the consolidated statements of income for all plans was $11,716,000, $10,080,000, and $8,872,000 for the years ended December 31, 2021, 2020 and 2019, respectively. The increase in stock-based compensation in 2021 versus 2020 was primarily due to higher compensation expenses related to performance awards. Management's assessment that higher profitability performance targets for certain grants would be achieved led to the increase of compensation expenses for performance awards.

The total income tax benefit recognized in the income statement for share-based compensation arrangements was $2,867,000, $2,390,000, and $1,501,000 for the years ended December 31, 2021, 2020 and 2019, 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 generally cliff vest after two years. Starting in 2017, stock options 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 a 10-year contractual term. 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, 2021, 2020 and 2019:

	For the Years Ended December 31		
	2021	2020	2019
Expected dividend yield	**1.30%**	1.31%	1.32%
Expected volatility	**31.81%**	26.00%	26.98%
Expected term	**7.3 years**	7.3 years	7.3 years
Risk-free interest rate	**0.96%**	1.47%	2.53%

A summary of stock option activity for the year ended December 31, 2021 is presented below:

	Shares	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term	Aggregate Intrinsic Value ($000)
Options				
Outstanding at January 1, 2021	392,550	$ 74.24		
Granted	66,352	123.70		
Exercised	(20,435)	66.95		
Forfeited	(2,501)	107.86		
Outstanding at December 31, 2021	435,966	81.92	6.18	$ 18,474
Vested or expected to vest at December 31, 2021	429,507	81.42	6.14	18,415
Exercisable at December 31, 2021	363,297	75.34	5.67	17,783

The weighted-average grant-date fair values of options awarded during the years ended December 31, 2021, 2020 and 2019, were $36.49, $25.90, and $26.49, respectively. The total intrinsic values of options exercised during the years ended December 31, 2021, 2020, and 2019 were $1,287,000, $2,534,000, and $2,518,000, respectively.

As of December 31, 2021, the total unrecognized compensation cost for unvested stock options was $2,229,000. 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, 2021, 2020, and 2019 was $1,369,000, $2,926,000, and $3,037,000, respectively. The actual tax benefit realized for the tax deductions from stock option exercises totaled $172,000, $339,000, and $348,000 for the years ended December 31, 2021, 2020 and 2019, respectively.

Stock Awards

In 2019, 2020, and 2021, 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. In addition, the Company grants stock awards that have no performance conditions associated with their vesting to non-employee directors of the Company.

A summary of stock award activity for the year ended December 31, 2021, is presented below:

	Shares	Weighted-Average Grant Date Fair Value
Stock Awards		
Unvested at January 1, 2021	107,351	$ 94.66
Granted	40,127	119.76
Vested	(48,613)	88.93
Forfeited/Modified due to change of assumptions	4,413	82.30
Unvested at December 31, 2021	103,278	61.30

The weighted-average grant-date fair values of stock awards granted during the years ended December 31, 2021, 2020 and 2019, were $119.76, $98.46, and $89.12, respectively. As of December 31, 2021, under the current Company assumption as to the number of stock award shares that will vest at the measurement periods ended December 31, 2022 and 2023, there was $4,971,000 of unrecognized compensation cost for unvested stock awards. That cost is expected to be recognized over a period of 1.6 years.

SARs

At December 31, 2021, the Company had both cash-settled and Company stock-settled SARs outstanding. SARs granted prior to 2015 are cash-settled, and SARs granted in 2015 and later are stock-settled. SARs granted prior to 2017 cliff vest after two years. Starting in 2017, SARs 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, 2021:

	Shares	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term	Aggregate Intrinsic Value ($000)
SARs				
Outstanding at January 1, 2021	653,498	$ 80.64		
Granted	143,104	123.68		
Exercised	(62,118)	65.97		
Forfeited	(7,497)	107.86		
Outstanding at December 31, 2021	726,987	90.06	6.83	$ 24,885

The weighted-average grant-date fair values of SARs granted during the years 2021, 2020 and 2019 were $36.49, $25.88, and $26.43, 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, 2021, and 2020, the liability for cash-settled SARs recorded on the consolidated balance sheet (non-current liabilities) was $1,502,000 and $2,368,000, respectively. At December 31, 2021, there was $4,828,000 of total unrecognized compensation cost related to all unvested SARs. That cost is to be recognized over a weighted-average period of 1.7 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 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 additional compensation expense or income resulting from the changes in the market values and earnings of the selected investment options was $6,895,000 expense in 2021, $9,988,000 expense in 2020 and $15,140,000 expense in 2019. The main factor in the decrease of the 2021 deferred compensation expense versus 2020 deferred compensation expense was a $4.97 per share decrease in the market price of the Company’s common stock in 2021 versus a $16.88 per share increase in the price of stock in 2020. The Company’s deferred compensation liability was $61,219,000 and $61,558,000 at December 31, 2021 and 2020, 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	
	2021	2020	**2021**	2020
Change in benefit obligation				
Benefit obligation at beginning of year	**$ 187,371**	$ 176,499	**$ 25,526**	$ 21,850
Interest cost	**4,671**	5,668	**357**	445
Actuarial loss (income)	**(8,682)**	13,327	**(1,171)**	3,032
Benefits paid	**(8,497)**	(8,123)	**(1,198)**	(657)
Foreign exchange impact	**—**	—	**(238)**	856
Benefit obligation at end of year	**$ 174,863**	$ 187,371	**$ 23,276**	$ 25,526

(In thousands)	United States		United Kingdom	
	2021	2020	**2021**	2020
Change in plan assets				
Fair value of plan assets at beginning of year	**$ 175,336**	$ 160,423	**$ 28,504**	$ 24,357
Actual return on plan assets	**11,459**	22,738	**(78)**	3,320
Employer contributions	**276**	298	**526**	526
Benefits paid	**(8,497)**	(8,123)	**(1,198)**	(657)
Foreign exchange impact	**—**	—	**(290)**	958
Fair value of plan assets at end of year	**$ 178,574**	$ 175,336	**$ 27,464**	$ 28,504
Over (Under) funded status at end of year	**$ 3,711**	$ (12,035)	**$ 4,188**	$ 2,978

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

(In thousands)	United States		United Kingdom	
	2021	2020	**2021**	2020
Non-current asset	**$ 7,166**	$ 3,470	**$ 4,188**	$ 2,978
Current liability	**(290)**	(288)	**—**	—
Non-current liability	**(3,165)**	(15,217)	**—**	—
Net amount recognized	**$ 3,711**	$ (12,035)	**$ 4,188**	$ 2,978

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

(In thousands)	United States		United Kingdom	
	2021	2020	**2021**	2020
Net actuarial loss	**$ 19,508**	$ 33,745	**$ 3,767**	$ 4,653

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

(In thousands)	United States		United Kingdom	
	2021	2020	**2021**	2020
Projected benefit obligation	**$ —**	$ 146,848	**$ —**	$ —
Accumulated benefit obligation	**—**	146,848	**—**	—
Fair value of plan assets	**—**	135,070	**—**	—

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

Net periodic benefit costs for the years ended December 31, 2021, 2020 and 2019, were as follows:

(In thousands)	United States			United Kingdom		
	2021	2020	2019	**2021**	2020	2019
Interest cost	**$ 4,671**	$ 5,668	$ 6,616	**$ 357**	$ 445	$ 554
Expected return on plan assets	**(10,348)**	(9,747)	(9,450)	**(320)**	(548)	(787)
Amortization of net actuarial loss	**4,444**	4,262	2,490	**129**	79	244
Net periodic benefit cost	**$ (1,233)**	$ 183	$ (344)	**$ 166**	$ (24)	$ 11

Other changes in plan assets and benefit obligations recognized in other comprehensive income for the years ended December 31, 2021, 2020 and 2019, were as follows:

(In thousands)	United States			United Kingdom		
	2021	2020	2019	**2021**	2020	2019
Net actuarial (gain) loss	**$ (9,793)**	$ 336	$ (5,174)	**$ (757)**	$ 272	$ (1,144)
Amortization of net actuarial loss	**(4,444)**	(4,262)	(2,490)	**(129)**	(79)	(244)
Total recognized in other comprehensive income	**$ (14,237)**	$ (3,926)	$ (7,664)	**$ (886)**	$ 193	$ (1,388)
Total recognized in net periodic benefit cost and other comprehensive income	**$ (15,470)**	$ (3,743)	$ (8,008)	**$ (720)**	$ 169	$ (1,377)

Estimated Future Benefit Payments

(In thousands)	United States	United Kingdom
2022	$ 8,949	$ 551
2023	9,283	594
2024	9,601	624
2025	9,829	652
2026	9,982	697
2027-2031	50,512	4,044

Assumptions

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

	United States		United Kingdom	
	2021	2020	**2021**	2020
Discount rate	**2.90%**	2.60%	**1.80%**	1.40%

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

	United States			United Kingdom		
	2021	2020	2019	**2021**	2020	2019
Discount rate	**2.60%**	3.30%	4.30%	**1.40%**	2.10%	2.80%
Expected long-term return on plan assets	**6.75%**	6.75%	6.75%	**1.13%**	2.30%	3.82%

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 equity 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 diversified among multiple asset categories, managers, styles, and securities. The investment management firm recommends asset allocations based on the time horizon available for investment, funded status, the nature of the plan cash flows and liabilities and other factors. The asset allocation targets are approved by the Company's Plan Committee.

Allowable investment categories include:

Equities: Common stocks of large, medium, and small companies (company stock), including both U.S. and non-U.S. based companies. The long-term target allocation for equities, excluding Company stock, is approximately 25 percent and the total equity target is 35 percent including Company stock.

Fixed Income (Debt): Bonds or notes issued or guaranteed by the U.S. government, and to a lesser extent, by non-U.S. governments, or by their agencies or branches, mortgage-backed securities, including collateralized mortgage obligations, corporate bonds, municipal bonds and dollar-denominated debt securities issued in the U.S. by non-U.S. banks and corporations. A small percentage of the fixed income assets may be in debt securities that are below investment grade. The target allocation for fixed income is 63 percent. The fixed income portfolio has a duration similar to the plan's liability stream and is designated to perform consistent with the movement of the plan's liabilities.

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 31,362 shares of the Company's common stock to the Company's ESOP trust on February 24, 2021. In 2020, the plans sold 31,706 shares to the Company's ESOP trust on February 24, 2020. In 2019, the plans sold 32,299 shares to the Company's ESOP trust on February 21, 2019.

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 may 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.

The target allocation for cash is two percent of plan assets.

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 overall strategy is to achieve a mix of investments for long-term growth and near-term benefit payments with a wide diversification of asset types. 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, 2021, the pension asset allocation was 13 percent equities, 74 percent fixed income, four percent insurance contracts, and nine 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, 2021 and 2020, by asset category, were as follows:

(In thousands)	December 31, 2021			
	Level 1	**Level 2**	**Level 3**	**Total**
Cash and Cash Equivalents	**$ 10,918**	**$ —**	**$ —**	**$ 10,918**
Equity Securities				
U.S. Equities	**25,083**	**—**	**—**	**25,083**
Non-U.S. Equities	**12,544**	**—**	**—**	**12,544**
Employer Securities	**25,204**	**—**	**—**	**25,204**
Total Equities	**62,831**	**—**	**—**	**62,831**
Fixed Income Securities				
U.S. Corporate Bonds	**—**	**69,073**	**—**	**69,073**
U.S. Government and Agency Bonds	**20,072**	**2,845**	**—**	**22,917**
Other Bonds	**—**	**12,835**	**—**	**12,835**
Total Fixed Income	**20,072**	**84,753**	**—**	**104,825**
Total	**$ 93,821**	**$ 84,753**	**$ —**	**$ 178,574**

(In thousands)	December 31, 2020			
	Level 1	Level 2	Level 3	Total
Cash and Cash Equivalents	$ 7,056	$ —	$ —	$ 7,056
Equity Securities				
U.S. Equities	54,805	—	—	54,805
Non-U.S. Equities	23,155	—	—	23,155
Employer Securities	27,938	—	—	27,938
Total Equities	105,898	—	—	105,898
Fixed Income Securities				
U.S. Corporate Bonds	—	41,489	—	41,489
U.S. Government and Agency Bonds	11,152	1,570	—	12,722
Other Bonds	—	8,171	—	8,171
Total Fixed Income	11,152	51,230	—	62,382
Total	$ 124,106	$ 51,230	$ —	$ 175,336

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 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 2021 or 2020 were categorized as Level 3.

U.K. Plan

The Company's asset allocations for its U.K. pension plans at December 31, 2021 and 2020, by asset category, were as follows:

(In thousands)		Level 1		Level 2		Level 3		Total
				December 31, 2021				
Cash		**—**	**$**	**2,414**	**$**	**—**	**$**	**2,414**
Equity Securities								
Pooled Pension Funds		**—**		**3,715**		**—**		**3,715**
Fixed Income								
Pooled Pension Funds		**—**		**20,332**		**—**		**20,332**
Insurance Contracts		**—**		**—**		**1,003**		**1,003**
Total	**$**	**—**	**$**	**26,461**	**$**	**1,003**	**$**	**27,464**

(In thousands)		Level 1		Level 2		Level 3		Total
				December 31, 2020				
Cash	$	—	$	2,576	$	—	$	2,576
Equity Securities								
Pooled Pension Funds		—		3,603		—		3,603
Fixed Income								
Pooled Pension Funds		—		21,166		—		21,166
Insurance Contracts		—		—		1,159		1,159
Total	$	—	$	27,345	$	1,159	$	28,504

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 2021 and 2020:

(In thousands)		Insurance Contracts
Fair value, December 31, 2019	$	1,205
Sale proceeds (benefit payments)		(119)
Change in unrealized gain		41
Foreign exchange impact		32
Fair value, December 31, 2020	$	1,159
Sale proceeds (benefit payments)		(131)
Change in unrealized gain		(15)
Foreign exchange impact		(10)
Fair value, December 31, 2021	$	1,003

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 2021 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 4.13 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 7.81 percent for U.S. and international equities. This return is based on a blended average of three different statistical models that each incorporates multiple factors including, for example, inflation, Gross Domestic Product and the Fed Funds Target Rate.

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

U.K. Plan

The overall expected long-term return on plan assets is a weighted-average of the expected long-term returns for equity securities, debt securities and other assets. The redemption yield at the measurement date on U.K. government fixed interest bonds and the yield on corporate bonds are used as proxies for the return on the debt portfolio. The returns for equities and property are estimated as a premium of 3.7 percent added to the risk-free rate. Cash is assumed to have a long-term return of 0.1 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 2022 contributions to the funded U.S. qualified defined benefit plans. The Company expects to contribute $290,000 in 2022 to the unfunded non-qualified U.S. pension plans. The Company expects to contribute $505,000 to the U.K. defined benefit plan in 2022.

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 starting 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. In 2019, 2020 and 2021, profit sharing contributions for U.S. employees were made to the employee stock ownership plan. Profit sharing contributions are allocated to participant accounts on the basis of participant base earnings

Defined contribution expenses for the Company's qualified defined contribution plans and statutory profit sharing contributions were as follows:

(In thousands)	***2021***	*2020*	*2019*
Retirement contributions	**$ 8,134**	$ 8,035	$ 7,328
Profit sharing contributions	**5,081**	6,107	4,702
Total	**$ 13,215**	$ 14,142	$ 12,030

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 appreciate and decrease (i.e., supplemental plan income is recognized) when the value of the trust assets declines. At December 31, 2021 and 2020, the trust asset balances were $2,146,000 and $1,778,000, respectively, and the supplemental plan liability balances were $2,221,000 and $1,853,000, 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.

Certain foreign locations are required by law to make profit sharing contributions to employees based on statutory formulas. For the years ended December 31, 2021, 2020 and 2019, the Company recognized $219,000, $1,679,000 and $935,000, respectively, of statutory profit sharing expense that is included in the table above.

In all Company locations, approximately 77 percent of union and non-union employees are eligible for either the Company's sponsored or statutory profit sharing contributions and 100 percent of U.S. based union and non-union employees are eligible for the Company's sponsored profit sharing contribution.

14. Accrued Liabilities

The composition of accrued liabilities was as follows:

	December 31	
(In thousands)	***2021***	*2020*
Accrued payroll and benefits	**$ 70,983**	$ 79,070
Accrued customer rebates	**21,030**	23,628
Other accrued liabilities	**44,383**	39,249
Total accrued liabilities	**$ 136,396**	$ 141,947

15. Other Non-Current Liabilities

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

	December 31	
(In thousands)	***2021***	*2020*
Deferred revenue	**$ 9,979**	$ 11,276
Environmental and legal matters	**17,663**	17,921
Deferred compensation liability	**50,122**	51,508
Pension liability	**4,552**	17,229
Other non-current liabilities	**16,606**	16,359
Total other non-current liabilities	**$ 98,922**	$ 114,293

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 assessment, protection and remediation matters. Some of these proceedings may result in fines, penalties, judgments or costs being assessed against the Company at some future time. The Company's operations are subject to extensive local, state and federal regulations, including the U.S. Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) and the Superfund amendments of 1986 (Superfund) as well as comparable regulations applicable to the Company's foreign locations. Over the years, the Company has received requests for information related 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 by the Company 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 and claims.

In determining the appropriate level of environmental reserves, the Company considers several factors such as information obtained from investigatory studies; changes in the scope of remediation; the interpretation, application and enforcement of laws and regulations; changes in the costs of remediation programs; the development of alternative cleanup technologies and methods; and the relative level of the Company's involvement at various sites for which the Company is allegedly associated. The level of annual expenditures for remedial, monitoring and investigatory activities will change in the future as major components of planned remediation activities are completed and the scope, timing and costs of existing activities are changed. As of December 31, 2021, the Company estimated a range of possible environmental losses and legal losses of $23,127,000 to $41,659,000. Within the range of possible environmental losses and legal losses, management has currently concluded that no single amount is more likely to occur than any other amounts in the range and, thus, has accrued at the lower end of the range. These accruals totaled $23,127,000 at December 31, 2021 and $22,884,000 at December 31, 2020. Although the Company believes that its reserves are adequate for contingencies, it is possible due to the uncertainties noted above, that additional reserves could be required in the future. Cash expenditures related to legal matters and environmental matters approximated $3,461,000 for the year ended December 31, 2021, compared to $4,483,000 in 2020, respectively.

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 material 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 Company's major contingencies at December 31, 2021:

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 (collectively, the Maywood site) were listed on the National Priorities List in September 1993 pursuant to the provisions of CERCLA because of alleged chemical contamination. Pursuant to (i) a September 21, 1987 Administrative Order on Consent entered into between the U.S. Environmental Protection Agency (USEPA) and the Company for property formerly owned by the Company at the Maywood site and (ii) the issuance of an order on November 12, 2004 by the USEPA to the Company for property currently owned by the Company at the Maywood site, 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 at the Maywood site, which requires the Company to perform remedial cleanup of the soil and buried waste. The USEPA has not yet issued a ROD for chemically-contaminated groundwater at the Maywood site. Based on the most current information available, the Company believes its recorded liability is reasonable having considered the range of estimated costs 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 the USEPA, as the design of the remedial action is finalized, if a groundwater ROD is issued or if other PRPs are identified. The ultimate amount for which the Company is liable could differ materially 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.

In addition, under the terms of a settlement agreement reached on November 12, 2004, the U.S. Department of Justice and the Company agreed to fulfill the terms of a Cooperative Agreement reached in 1985. Under the Cooperative Agreement, the United States is responsible for the removal of radioactive waste at the Maywood site, including past and future remediation costs at the site. 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 generated by the Company at several sites in New Jersey, including the D'Imperio site. The Company was named as a PRP in an October 2, 1998 lawsuit in the U.S. District Court for the District of New Jersey that involved the D'Imperio Site. In 2021, the PRPs were provided with updated remediation cost estimates by the PRP group technical consultant and project manager which the Company considered in its 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 continues at the D'Imperio 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 materially from the current recorded liability.

Wilmington Site

The Company is currently contractually obligated to contribute to the environmental response costs associated with the Company's formerly-owned site in Wilmington, Massachusetts (the Wilmington site). Remediation at this site is being managed by its current owner to whom the Company sold the property in 1980. Under the Company's October 1, 1993 agreement with the current owner of the Wilmington site, 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 $3,243,000 for the Company's portion of environmental response costs at the Wilmington site through December 31, 2021. 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 materially from the current recorded liability.

The Company and other prior owners of the Wilmington site also entered into an agreement in April 2004 waiving certain statute of limitations defenses for claims that 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 its Millsdale, Illinois and Fieldsboro, New Jersey 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. Based on current information, the Company believes that its recorded liability for the remediation of the affected areas is appropriate based on an estimate of expected costs. However, actual costs could differ materially from current recorded liabilities.

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 and disinfection products 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, 2021, 2020 and 2019:

(In thousands)	***Surfactants***	***Polymers***	***Specialty Products***	***Segment Totals***
2021				
Net sales	**$ 1,562,795**	**$ 713,440**	**$ 69,731**	**$ 2,345,966**
Operating income	**165,999**	**73,591**	**14,178**	**253,768**
Assets	**1,245,207**	**556,799**	**78,100**	**1,880,106**
Capital expenditures	**154,953**	**29,077**	**4,976**	**189,006**
Depreciation and amortization expenses	**51,375**	**30,598**	**5,836**	**87,809**
2020				
Net sales	$ 1,351,686	$ 452,277	$ 65,787	$ 1,869,750
Operating income	169,101	68,214	13,966	251,281
Assets	1,018,555	361,219	92,964	1,472,738
Capital expenditures	88,484	26,719	5,960	121,163
Depreciation and amortization expenses	49,429	22,873	5,686	77,988
2019				
Net sales	$ 1,272,723	$ 512,347	$ 73,675	$ 1,858,745
Operating income	122,780	69,567	16,415	208,762
Assets	907,032	338,179	86,718	1,331,929
Capital expenditures	69,725	29,188	4,441	103,354
Depreciation and amortization expenses	48,422	22,151	5,483	76,056

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

(In thousands)	***2021***	*2020*	*2019*
Operating income - segment totals	**$ 253,768**	$ 251,281	$ 208,762
Business restructuring and asset disposition (1)	**(3,353)**	(1,212)	(2,744)
Unallocated corporate expenses (2)	**(79,634)**	(78,547)	(78,758)
Total operating income	**170,781**	171,522	127,260
Interest expense, net	**(5,753)**	(5,409)	(5,932)
Other, net	**7,509**	4,954	4,571
Consolidated income before income taxes	**$ 172,537**	$ 171,067	$ 125,899
Assets - segment totals	**$ 1,880,106**	$ 1,472,738	$ 1,331,929
Unallocated corporate assets	**185,506**	279,598	247,438
Consolidated assets	**$ 2,065,612**	$ 1,752,336	$ 1,579,367
Capital expenditures - segment totals	**$ 189,006**	$ 121,163	$ 103,354
Unallocated corporate expenditures	**5,476**	4,629	2,218
Consolidated capital expenditures	**$ 194,482**	$ 125,792	$ 105,572
Depreciation and amortization expenses – segment totals	**$ 87,809**	$ 77,988	$ 76,056
Unallocated corporate depreciation expenses	**3,067**	3,872	2,645
Consolidated depreciation and amortization expenses	**$ 90,876**	$ 81,860	$ 78,701

(1) See Note 22, *Business Restructuring*, of the notes to the Company's consolidated financial statements (included in Item 8 of this Form 10-K) regarding business restructuring costs.

(2) Unallocated corporate expenses are primarily comprised of 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.

Below is certain Company-wide geographic data for the years ended December 31, 2021, 2020 and 2019:

(In thousands)	***2021***	*2020*	*2019*
Net sales (1)			
United States	**$ 1,297,650**	$ 1,117,695	$ 1,115,993
France	**179,746**	141,516	145,933
Poland	**198,883**	147,289	156,391
United Kingdom	**208,780**	93,115	96,842
Brazil	**136,799**	105,639	102,590
Mexico	**127,944**	100,763	83,160
All other countries	**196,164**	163,733	157,836
Total	**$ 2,345,966**	$ 1,869,750	$ 1,858,745
Long-lived assets (2)			
United States	**$ 668,362**	$ 499,260	$ 462,199
Netherlands	**85,931**	—	—
Germany	**41,438**	39,759	30,084
Singapore	**23,507**	25,815	28,741
Brazil	**35,294**	35,786	46,740
China	**30,991**	27,300	27,201
United Kingdom	**38,634**	24,335	21,551
Mexico	**45,384**	39,482	21,959
All other countries	**39,034**	42,970	42,280
Total	**$ 1,008,575**	$ 734,707	$ 680,755

(1) Net sales are attributed to countries based on the location of the Company legal entity making the sale.

(2) 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, 2021, 2020 and 2019:

(In thousands, except per share amounts)	***2021***	*2020*	*2019*
Computation of Basic Earnings per Share			
Net income attributable to Stepan Company	**$ 137,804**	$ 126,770	$ 103,129
Weighted-average number of shares outstanding	**22,922**	22,949	23,054
Basic earnings per share	**$ 6.01**	$ 5.52	$ 4.47
Computation of Diluted Earnings per Share			
Net income attributable to Stepan Company	**$ 137,804**	$ 126,770	$ 103,129
Weighted-average number of shares outstanding	**22,922**	22,949	23,054
Add weighted-average net shares from assumed exercise of options (under treasury share method) (1)	**138**	112	97
Add weighted-average net shares related to unvested stock awards (under treasury share method)	**1**	1	2
Add weighted-average net shares from assumed exercise of SARs (under treasury share method)	**166**	145	125
Add weighted-average contingently issuable net shares related to performance stock awards (under treasury share method)	**60**	49	38
Weighted-average shares applicable to diluted earnings	**23,287**	23,256	23,316
Diluted earnings per share	**$ 5.92**	$ 5.45	$ 4.42

(1) Options/SARs to purchase 103,182, 127,434 and 107,125 shares of common stock were excluded from the computations of diluted earnings per share for the years ended December 31, 2021, 2020 and 2019, respectively. The options'/SARs' exercise prices were greater than the average market price for the common stock and inclusion of the instruments would have had an antidilutive effect on the computations of the earnings per share.

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, 2021, 2020 and 2019:

(In thousands)	Foreign Currency Translation Adjustments	Defined Benefit Pension Plan Adjustments	Cash Flow Hedge Adjustments	Total
Balance at December 31, 2018	**$ (108,481)**	**$ (33,083)**	**$ 81**	**$ (141,483)**
Other comprehensive income before reclassifications	4,444	4,112	—	8,556
Amounts reclassified from AOCI	—	2,091	(9)	2,082
Remeasurement adjustment related to the Tax Act (1)	—	(5,325)	0	(5,325)
Net current period other comprehensive income	4,444	878	(9)	5,313
Balance at December 31, 2019	**$ (104,037)**	**$ (32,205)**	**$ 72**	**$ (136,170)**
Other comprehensive income before reclassifications	(3,046)	(996)	—	(4,042)
Amounts reclassified from AOCI	—	3,340	(9)	3,331
Net current period other comprehensive income	(3,046)	2,344	(9)	(711)
Balance at December 31, 2020	**$ (107,083)**	**$ (29,861)**	**$ 63**	**$ (136,881)**
Other comprehensive income before reclassifications	(28,185)	8,188	—	(19,997)
Amounts reclassified from AOCI	—	3,651	(9)	3,642
Net current period other comprehensive income	(28,185)	11,839	(9)	(16,355)
Balance at December 31, 2021	**$ (135,268)**	**$ (18,022)**	**$ 54**	**$ (153,236)**

(1) Represents reclassification of the stranded tax effects resulting from the U.S. Tax Cuts and Jobs Act (Tax Act) from accumulated other comprehensive income (loss) to retained earnings in accordance with ASU 2018-02.

Amounts reclassified out of AOCI for the three years ended December 31, 2021, 2020 and 2019, is displayed below:

(In thousands)	Amounts Reclassified from AOCI (1) 2021	2020	2019	Affected Line Item in Consolidated Statements of Income
Amortization of defined pension items:				
Prior service cost	**$ (12)**	$ (11)	$ (12)	
Actuarial loss	**(4,800)**	(4,421)	(2,739)	
	$ (4,812)	(4,432)	(2,751)	Total before tax (2)
	1,161	1,092	660	Tax benefit
	$ (3,651)	$ (3,340)	$ (2,091)	Net of tax
Gains and losses on cash flow hedges:				
Foreign exchange contracts	**$ 9**	$ 9	$ 9	Cost of sales
	9	9	9	Total before tax
	—	—	—	Tax benefit
	$ 9	$ 9	$ 9	Net of tax
Total reclassifications for the period	**$ (3,642)**	$ (3,331)	$ (2,082)	Net of tax

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

(2) This component of accumulated other comprehensive income is included in the computation of net periodic benefit cost (see Note 13, *Postretirement Benefit Plans*, of the notes to the Company's consolidated financial statements for details regarding net periodic benefit costs for the Company's U.S. and U.K. defined benefit plans).

20. Acquisitions

2021 Acquisitions

INVISTA Acquisition

On January 29, 2021, the Company and its wholly-owned subsidiaries Stepan Holdings Netherlands B.V. and Stepan UK Limited (collectively, "Stepan") entered into a Stock and Asset Purchase Agreement with Arteva Specialties B.V., INV Performance Surfaces, LLC, INVISTA Textiles (U.K.) Limited, INV Management Services, LLC, and INVISTA Equities, LLC (collectively, "INVISTA") to acquire INVISTA's aromatic polyester polyol business and associated assets. Included in the transaction were two manufacturing sites, one in Wilmington, North Carolina (U.S.) and the other in Vlissingen, Netherlands, along with intellectual property, customer relationships, inventory and working capital. This acquisition expanded the Company's manufacturing capabilities in both the United States and Europe and enhances its business continuity capabilities for the market. The Company believes that INVISTA's available spare capacity, combined with debottlenecking opportunities for both plants, will allow Stepan to support future market growth in a capital efficient way. The purchase price was $165,000,000, plus $21,560,000 of working capital and $3,000,000 of associated value-added taxes (VAT), and was paid in cash. Immaterial working capital adjustments were finalized and paid during the second quarter of 2021. The working capital acquired included $5,900,000 of cash. The acquisition has been accounted for as a business combination, and the acquired operations are included in the Company's Polymer segment in 2021. The assets acquired and liabilities assumed as part of the acquisition were measured and recorded at estimated fair value. The principle valuation techniques employed included cost and market approaches (PP&E), relief from royalty method under the income approach (trade name and technology/know-how) and multi-period excess earnings method under the income approach (customer relationships). The Company finalized the purchase price allocation during the third quarter of 2021. The following table summarizes the purchase price allocation for the major components of the acquisition:

(In thousands)	
Assets:	
Property, plant and equipment	$ 54,200
Identifiable intangibles assets	46,000
Goodwill	64,800
Total assets acquired	$ 165,000

The acquired goodwill includes proprietary and intellectual property, brand recognition, business continuity benefits and marketing, manufacturing and supply chain synergies of the new business with the Company's existing Polymer business. The acquired goodwill has been assigned to the Polymers segment and is deductible for tax purposes. Identifiable intangible assets included technology and manufacturing know-how ($13,000,000), trademarks ($8,000,000) and customer relationships ($25,000,000). The amortization periods for know-how and trademarks have been estimated to be in the range of 7 to 8 years. The amortization period for customer relationships has been estimated to be in the range of 12 to 14 years. As of December 31, 2021, in addition to the purchase price, the Company also paid $3,837,000 of acquisition-related expenses that primarily included legal, consulting, valuation and accounting services. For the twelve months ended December 31, 2021, the Company incurred $1,890,000 of acquisition-related expenses. These costs were included in the Administrative expenses line in the Company's condensed consolidated statement of income.

The following table reflects pro forma financial information prepared under the assumption that the acquisition of the INVISTA aromatic polyester polyol business occurred on January 1, 2020.

Pro Forma Financial Information

Unaudited

	Twelve Months Ended December 31	
(In thousands)	2021	2020
Net Sales	$ 2,358,405	$ 1,971,750
Net Income Attributable to Stepan Company	$ 140,869	$ 133,291

The supplemental pro forma information is presented for illustrative purposes only and may not be indicative of the consolidated results that would have been achieved by the Company had the acquisition occurred on January 1, 2020. Furthermore, future results may vary materially from the results reflected in the pro forma information. The pro forma results include adjustments primarily related to amortization of acquired intangible assets, depreciation of the fair value adjustment related to acquired plant assets, tax expense and management assumptions related to INVISTA's legacy carved-out financial statements. In addition, non-recurring adjustments to pro forma net income include $1,890,000 of acquisition-related expenses. Such expenses were excluded from 2021 pro forma net income and included in 2020 pro forma net income.

Fermentation Plant Acquisition

On February 2, 2021, the Company acquired a fermentation plant, located in Lake Providence, Louisiana (U.S.). The Company believes this plant complements the rhamnolipid-based bio-surfactant technology the Company acquired from Logos Technologies in March 2020. Fermentation is a new platform technology for the Company and the Company is focusing efforts to further develop, integrate, produce and commercialize these unique surfactants moving forward. Bio-surfactants, produced via fermentation, are attractive due to their biodegradability, low toxicity, and in some cases, unique antimicrobial properties. These bio-surfactants offer synergies in several strategic end use markets including oilfield, agriculture, personal care and household, industrial and institutional. The acquisition of this industrial scale fermentation plant represents the latest step in the Company's bio-surfactant commercialization efforts. The purchase price was $3,500,000 and was paid in cash. This acquisition has been accounted for as an asset acquisition.

2020 Acquisitions

Clariant (Mexico) Acquisition

On September 17, 2020, the Company through its subsidiaries in Mexico, acquired Clariant (Mexico) S.A. de C.V.'s (Clariant) anionic business located in Santa Clara, Mexico. The acquisition did not include the purchase of a manufacturing site. The business acquired has been integrated into the Company's two existing manufacturing sites in Mexico (Matamoros and Ecatepec). The purchase price of the acquisition was $14,000,000, plus associated value-added taxes (VAT). As of December 31, 2021, $14,308,000, inclusive of $308,000 net VAT, had been paid with cash on hand. The acquisition was accounted for as a business combination and the assets were measured and recorded at their estimated fair value. The acquired goodwill is not tax deductible. All assets acquired are included in the Company's Surfactants segment. The following table summarizes the purchase price allocation for the acquisition:

(In thousands)		
Assets:		
Identifiable intangible assets:		
Customer lists	$	8,000
Trademarks and know-how		1,300
Non-compete agreement		300
Goodwill		5,165
Property, plant and equipment		175
Total assets acquired	$	14,940
Liabilities:		
Other non-current liabilities		940
Total liabilities assumed		940
Net assets acquired	$	14,000

Logos Technologies Acquisition

On March 13, 2020, the Company acquired certain assets of Logos Technologies LLC's NatSurFact® business, a rhamnolipid-based line of bio-surfactants derived from renewable sources. These bio-surfactants offer synergies in several strategic end use markets including oilfield, agriculture, personal care and household, industrial and institutional. The acquisition was accounted for as an asset acquisition. The purchase price of the acquisition was $2,040,000 and was paid with cash on hand. All assets acquired are included in the Company's Surfactants segment. The assets acquired were primarily intangibles, including trademarks and know-how ($1,392,000) and patents ($464,000). Additionally, $184,000 of laboratory equipment was acquired.

2019 Acquisition

On December 17, 2019, the Company acquired an oilfield demulsifier product line. The purchase price of the acquisition was $9,000,000 and was paid with cash on hand. This acquisition was accounted for as a business combination and the assets were measured and recorded at their estimated fair values. The primary assets acquired were intangibles, mostly comprised of goodwill ($3,161,000), product know-how ($3,300,000) and customer relationships ($1,900,000). A small amount of inventory was also acquired. All of the acquired assets are included within the Company's Surfactants segment. The average amortization period for the identifiable intangibles assets is 20 years.

Pro forma financial information has not been included because revenues and earnings of the Company's consolidated entity would not have been materially different than reported had the acquisition date been January 1, 2019. The acquired business did not impact the Company's 2019 financial results.

21. Revenue from Contracts with Customers

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.

As of December 31, 2021, the Company had $1,376,000 of contract liabilities and no contract assets. 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. When such situations do arise, the Company maintains a deferred revenue liability until the time a performance obligation has been satisfied. The Company recognized $773,000 of revenue in the current period from pre-existing contract liabilities at December 31, 2020. During 2020 the Company recognized $10,709,000 of deferred revenue associated with a payment received to defray the cost of capital expenditures necessary to service a customer's future product needs. This deferred revenue will be recognized over the period of the contract. As of December 31, 2021, no revenue has been recognized from this contract.

The tables below provide a geographic disaggregation of net sales for the years ended December 31, 2021, 2020 and 2019. 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.

	2021			
(In thousands)	**Surfactants**	**Polymers**	**Specialty Products**	**Total**
Geographic Market				
North America	**$ 904,469**	**$ 364,382**	**$ 59,461**	**$ 1,328,312**
Europe	**288,735**	**302,137**	**9,152**	**600,024**
Latin America	**299,601**	**3,823**	**1,118**	**304,542**
Asia	**69,990**	**43,098**	**—**	**113,088**
Total	**$ 1,562,795**	**$ 713,440**	**$ 69,731**	**$ 2,345,966**

	2020			
(In thousands)	Surfactants	Polymers	Specialty Products	Total
Geographic Market				
North America	$ 826,841	$ 265,700	$ 56,455	1,148,996
Europe	234,631	147,289	9,332	391,252
Latin America	234,568	2,498	—	237,066
Asia	55,646	36,790	—	92,436
Total	$ 1,351,686	$ 452,277	$ 65,787	$ 1,869,750

	2019			
(In thousands)	Surfactants	Polymers	Specialty Products	Total
Geographic Market				
North America	$ 766,341	$ 314,549	$ 61,501	1,142,391
Europe	240,711	158,455	12,174	411,340
Latin America	212,405	3,304	—	215,709
Asia	53,266	36,039	—	89,305
Total	$ 1,272,723	$ 512,347	$ 73,675	$ 1,858,745

22. Business Restructuring and Asset Disposition

2019 Restructuring

In 2019, the Company restructured its Specialty Products office in the Netherlands and eliminated select positions from the site's supply chain, quality control and research and development areas. This restructuring was designed to better align the number of personnel with current business requirements and reduce costs at the site. As a result, severance and early lease termination expenses of $554,000 and $122,000, respectively, were recognized during the year ended December 31, 2019.

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, 2021, an aggregate of $2,392,000 shut down related expense had been recognized at the site. This aggregate expense is comprised of $1,404,000 of asset and spare part write downs recognized in 2018 and $988,000 of cumulative decommissioning costs. The Company recognized $79,000 and $909,000 in decommissioning expenses in 2020 and 2019, respectively.

2016 Restructuring

In May 2016, the Company announced plans to shut down its Long Mills, Ontario, Canada (Longford Mills) manufacturing facility, a part of the Surfactant reportable segment, by December 31, 2016. The shutdown plan was implemented to improve the Company's asset utilization in North America and to reduce the Company's fixed cost base. Manufacturing operations at the Longford Mills plant ceased by the end of 2016, and production of goods manufactured at the facility was transferred to the Company's other North American production sites. As of December 31, 2021, $9,250,000 of aggregate restructuring expense had been recognized, reflecting $1,644,000 of termination benefits for approximately 30 employees and $7,606,000 for other expenses, principally site decommissioning costs. The Company recognized restructuring expenses of $633,000, $1,133,000 and $1,410,000 in 2021, 2020 and 2019, respectively.

Asset Disposition

In the fourth quarter 2021, the Company sold one of its corporate headquarter buildings and recognized a $2,720,000 loss on the sale of the building. The loss is reflected in the Business restructuring and asset disposition line on the Company's consolidated statements of income.

23. Insurance Recovery

Millsdale, Illinois site

On January 19, 2020, the Company experienced a power disruption that impacted its Millsdale, Illinois facility. This power outage combined with below freezing temperatures, led to significant production and operational challenges that impacted both Surfactants and Polymers produced at the site. The Millsdale facility operated on a partial basis and used existing inventories to serve its customers. On February 17, 2020, power outage-related operational issues impacted the Millsdale site's waste water treatment plant and forced the Company to stop production at the site. As a result, the Company declared force majeure for the supply of phthalic anhydride (Polymers) and certain surfactant product lines. All production lines were fully operational prior to the end of the 2020 first quarter. During the second half of 2020, the Company finalized an insurance settlement related to this incident and recognized an $18,000,000 pre-tax insurance recovery. This insurance recovery was recognized as a reduction of expenses within cost of sales in the consolidated financial statement of income for the year ended December 31, 2020. The Surfactant and Polymer segments recorded $5,200,000 and $12,800,000, respectively, in insurance recovery.

Ecatepec, Mexico site

The Company received insurance recovery proceeds of $8,965,000 in December 2019 for damaged equipment, incremental supply chain expenses and business interruption losses pertaining to the first quarter 2019 sulfonation equipment failure at the Company's plant in Ecatepec, Mexico. The insurance recovery was recorded as reduction of cost of sales in the consolidated statement of income for the year ended December 31, 2019.

24. 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 for $703,000 was paid in the second quarter of 2019 and was covered by insurance.

25. Noncash Investing and Financing Activities

Noncash investing activities included liabilities (accounts payable) incurred for property, plant and equipment expenditures of approximately $36,588,000, $17,946,000, and $16,890,000 that were unpaid at December 31, 2021, 2020 and 2019, respectively. Noncash financing activities included 60,132 shares of Company common stock (valued at $7,286,000), 58,282 shares of Company common stock (valued at $5,485,000) and 96,095 shares of Company common stock (valued at $8,893,000) issued in connection with the Company's stock award plan in 2021, 2020 and 2019, respectively.

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, 2021. 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, 2021, 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, 2021. 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, 2021, the Company’s internal controls over financial reporting were effective based on those criteria. As permitted under SEC guidance, management’s assessment of and conclusion regarding the design and effectiveness of internal control over financial reporting excluded the internal control over financial reporting of the operations of the INVISTA entity acquired in 2021, described in Note 20, *Acquisitions*, of the Notes to Consolidated Financial Statements. The INVISTA entity acquired in 2021 represented less than 1.0% of consolidated net sales for the year ended December 31, 2021, and approximately 1.8% of consolidated total assets as of December 31, 2021. Based on our assessment, we have concluded that our internal control over financial reporting was effective as of December 31, 2021.

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
Northbrook, 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, 2021, 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, 2021, 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, 2021, of the Company and our report dated February 25, 2022 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.

As described in *Management's Annual Report on Internal Control Over Financial Reporting*, management excluded from its assessment the internal control over financial reporting at the INVISTA entity that was acquired on January 29, 2021, as described in Note 20. The entity's financial statements constitute approximately 1.0% of consolidated Net Sales for the year ended December 31, 2021 and approximately 1.8% of consolidated Total Assets as of December 31, 2021. Accordingly, our audit did not include the internal control over financial reporting at the acquired INVISTA entity.

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 only 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 25, 2022

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, 2021, that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

None.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

Not applicable.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

(a) Directors

See the Company's Proxy Statement for the Annual Meeting of Stockholders expected to be held April 26, 2022, for information on the Directors of the Company, which is incorporated by reference herein.

(b) Executive Officers

See "Information About our Executive Officers" in Part I above for the identification of the Company's executive officers. See the Company's Proxy Statement for the Annual Meeting of Stockholders expected to be held April 26, 2022, for other information on the Company's executive officers, which is incorporated by reference herein.

(c) Delinquent Section 16(a) Reports

See the Company's Proxy Statement for the Annual Meeting of Stockholders expected to be held April 26, 2022, 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 expected to be held April 26, 2022, for information on the Company's Audit Committee Financial Experts, which is incorporated by reference herein.

(e) Code of Conduct

See the Company's Proxy Statement for the Annual Meeting of Stockholders expected to be held April 26, 2022, 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 expected to be held April 26, 2022, 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 expected to be held April 26, 2022, 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 expected to be held April 26, 2022, 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 expected to be held April 26, 2022, 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 October 22, 2019) (filed with the Company's Quarterly Report on Form 10-Q filed on October 30, 2019 (File No. 001-4462), and incorporated herein by reference)
4.1	Description of the Company's Common Stock (filed with the Company's Annual Report on form 10-K for the year ended December 31, 2019 (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 Savings and Investment Retirement Plan (Amended and Restated Effective as of January 1, 2019) (filed with the Company's Quarterly Report on Form 10-Q filed on October 30, 2019 (File No. 001-4462), and incorporated herein by reference)
10.3+	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)
10.4+	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)
10.5+	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)
10.6	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)
10.7+	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)
10.8+	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)
10.9+	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)
10.10+	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)

Exhibit No.	Description
10.11+	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)
10.12+	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
10.13+	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)
10.14+	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, 2017 (File No. 001-4462), and incorporated herein by reference
10.15+	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
10.16+	Second Amendment to the Stepan Company 2011 Incentive Compensation Plan (filed with the Company's Current Report on Form 8-K filed on May 6, 2019 (File No. 001-4462), and incorporated herein by reference)
10.17+	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)
10.18	Stepan Company Directors Deferred Compensation Plan amended and restated as of January 1, 2012 (filed with the Company's Annual Report on Form 10-K for the year ended December 31, 2018 (File No. 001-4462), and incorporated herein by reference)
10.19+	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)
10.20+	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)
10.21	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)
10.22	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)
10.23	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)
10.24	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)
10.25	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

Exhibit No.	Description
10.26	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)
10.27	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)
10.28	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)
10.29	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)
10.30	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)
10.31	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)
10.32	Amendment No. 1, dated as of June 22, 2021, to Credit Agreement, dated as of January 30, 2018, among Stepan Company, the lenders party thereto, and JPMorgan Chase Bank, N.A., as administrative agent (filed with the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2021 (File No. 001-4462) and incorporated herein by reference)
10.33	Stock and Asset Purchase Agreement, dated as of January 29, 2021, by and among Arteva Specialties B.V., INV Performance Surfaces, LLC, INVISTA Textiles (U.K.) Limited, INV Management Services, LLC, Stepan Company, Stepan U.K. Limited and Stepan Holdings Netherlands B.V. (filed with the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2021 (File No. 001-4462), and incorporated herein by reference)
10.34	Note Purchase and Private Shelf Agreement dated as of June 10, 2021 by and among Stepan Company, PGIM, Inc. and the purchasers thereto (filed with the Company's Current Report on Form 8-K filed on June 14, 2021 (File No. 001-4462), and incorporated herein by reference)
10.35	Subsidiary Guaranty dated as of June 10, 2021, by and between Stepan Specialty Products, LLC and Stepan Surfactants Holdings, LLC relating to the Note Purchase and Private Shelf Agreement dated as of June 10, 2021, by and among Stepan Company, PGIM, Inc. and the purchasers thereto (filed with the Company's Current Report on Form 8-K filed on June 14, 2021 (File No. 001-4462), and incorporated herein by reference)
10.36	Note Purchase and Master Note Agreement dated as of June 10, 2021, by and among Stepan Company, NYL Investors LLC and the purchasers thereto (filed with the Company's Current Report on Form 8-K filed on June 14, 2021 (File No. 001-4462), and incorporated herein by reference)
10.37	Subsidiary Guaranty dated as of June 10, 2021, by and between Stepan Specialty Products, LLC and Stepan Surfactants Holdings, LLC relating to the Note Purchase and Master Note Agreement dated as of June 10, 2021, by and among Stepan Company, NYL Investors LLC and the purchasers thereto (filed with the Company's Current Report on Form 8-K filed on June 14, 2021 (File No. 001-4462), and incorporated herein by reference)
21*	Subsidiaries of the Registrant at December 31, 2021
23*	Consent of Independent Registered Public Accounting Firm
24*	Power of Attorney

Exhibit No.	Description
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	Inline XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the inline XBRL document
101.SCH	Inline XBRL Taxonomy Extension Schema Document
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	Inline XBRL Taxonomy Extension Definition Document
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)

* 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 25, 2022

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 and Chief Executive Officer (Principal Executive Officer)	February 25, 2022
/s/ Luis E. Rojo Luis E. Rojo	Vice President and Chief Financial Officer (Principal Financial and Accounting Officer)	February 25, 2022
/s/ Michael R. Boyce Michael R. Boyce	Director	February 25, 2022
/s/ Lorinda Burgess Lorinda Burgess	Director	February 25, 2022
/s/ Randall S. Dearth Randall S. Dearth	Director	February 25, 2022
/s/ Joaquin Delgado Joaquin Delgado	Director	February 25, 2022
/s/ Gregory E. Lawton Gregory E. Lawton	Director	February 25, 2022
/s/ Jan Stern Reed Jan Stern Reed	Director	February 25, 2022
/s/ Edward J. Wehmer Edward J. Wehmer	Director	February 25, 2022

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 25, 2022

/s/ Luis E. Rojo
Luis E. Rojo

SUBSIDIARIES OF THE REGISTRANT

Subsidiary	Jurisdiction of Organization
North Pier Insurance Company	United States
Stepan Asia Pte. Ltd.	Singapore
Stepan Canada Sales Inc.	Canada
Stepan CDMX, S. de R.L. de C.V.	Mexico
Stepan Chemical (Nanjing) Co., Ltd.	China
Stepan Chemical (Shanghai) Co., Ltd.	China
Stepan Colombia S.A.S.	Colombia
Stepan Deutschland GmbH	Germany
Stepan Europe S.A.S.	France
Stepan Holdings Asia Pte. Ltd.	Singapore
Stepan Holdings, LLC	United States
Stepan Holdings Netherlands B.V.	Netherlands
Stepan (India) Private Limited	India
Stepan Mexico Holdings, LLC	United States
Stepan Mexico, S.A. de C.V.	Mexico
Stepan (Nanjing) Chemical R&D Co., Ltd.	China
Stepan Netherlands B.V.	Netherlands
Stepan Philippines, Inc.	Philippines
Stepan Philippines Quaternaries, Inc.	Philippines
Stepan Polska Sp. z o.o.	Poland
Stepan Química Argentina S.R.L.	Argentina
Stepan Química Ltda.	Brazil
Stepan Singapore Holdings Pte. Ltd.	Singapore
Stepan Specialty Products B.V.	Netherlands
Stepan Specialty Products, LLC	United States
Stepan Surfactants Holdings, LLC	United States
Stepan UK Limited	United Kingdom

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 25, 2022, relating to the financial statements of Stepan Company and the effectiveness of Stepan Company's internal control over financial reporting appearing in this Annual Report on Form 10-K for the year ended December 31, 2021.

/s/ Deloitte & Touche LLP
DELOITTE & TOUCHE LLP

Chicago, Illinois
February 25, 2022

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, 2021, 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 25, 2022.

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

/s/ Luis E. Rojo
Luis E. Rojo

/s/ Michael R. Boyce
Michael R. Boyce

/s/ Lorinda Burgess
Lorinda Burgess

/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/ 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 25, 2022

/s/ F. Quinn Stepan, Jr.
F. Quinn Stepan, Jr.
Chairman 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 25, 2022

/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, 2021, 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 25, 2022

/s/ F. Quinn Stepan, Jr.
Name: F. Quinn Stepan, Jr.
Title: Chairman 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.