



element
solutions



CHEMICAL TECHNOLOGY ENABLING PERFORMANCE & INNOVATION



AUTOMOTIVE
STYLE // FUNCTION // RELIABILITY



CONSUMER GOODS
MODERN // CONVENIENT // INTERACTIVE



ENERGY & RESOURCES
EFFICIENT // SAFE // POWERFUL



INDUSTRIAL, AEROSPACE & MEDICAL
QUALITY // RELIABILITY // SECURITY



COMPUTING & TELECOM
POWER // SPEED // CONNECTIVITY

Element Solutions Inc is a leading specialty chemicals company whose operating businesses formulate a broad range of solutions that **enhance the performance of products people use every day.**

We prioritize the success of our businesses' customers, which in turn drives opportunities for our employees and value for our shareholders. Our formula for value creation starts with our passion for innovation followed by a high focus on operational excellence. We believe this formula, combined with our asset-efficient business profile, drives sustainable organic value creation and enables attractive, strategic investment opportunities.



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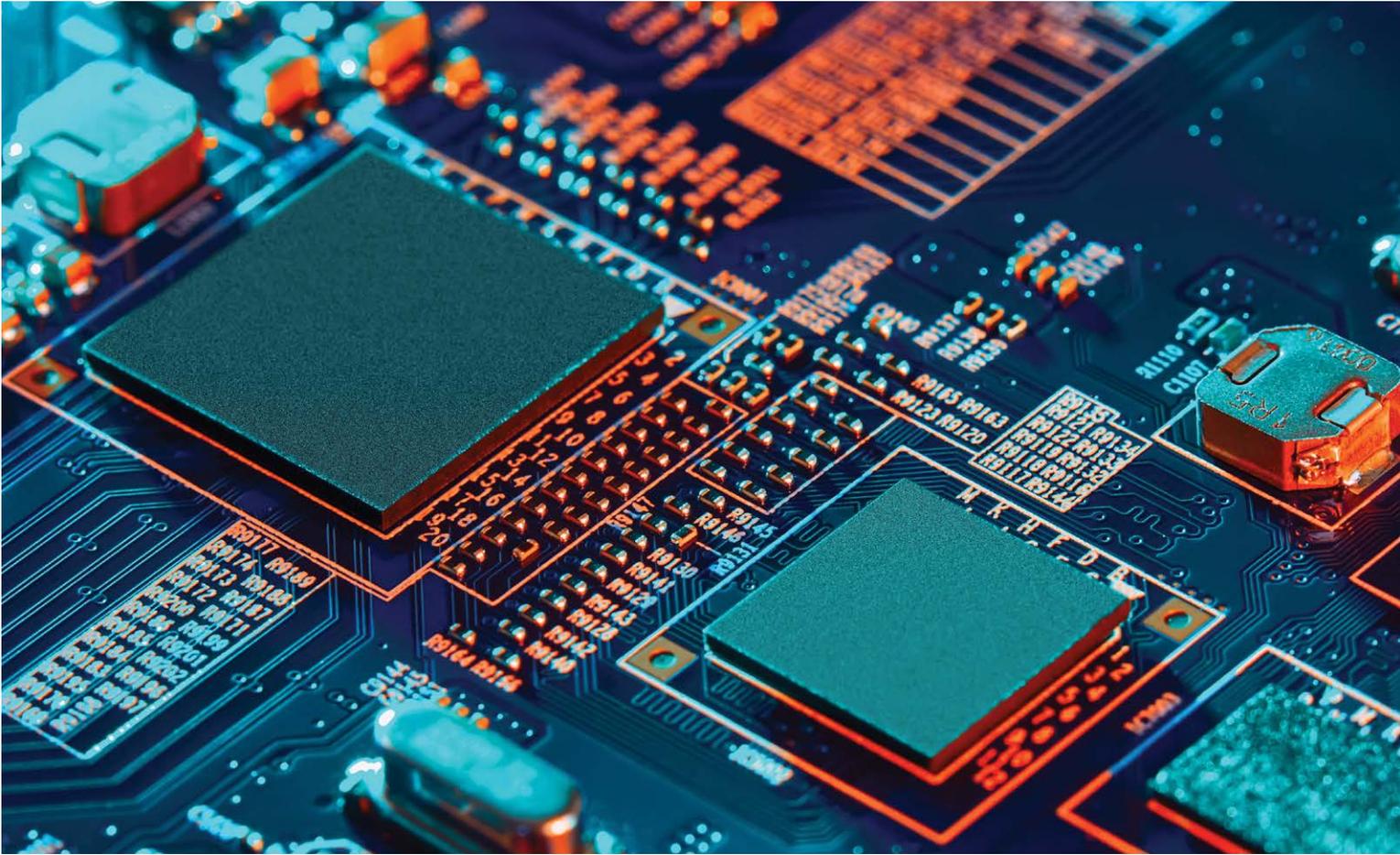


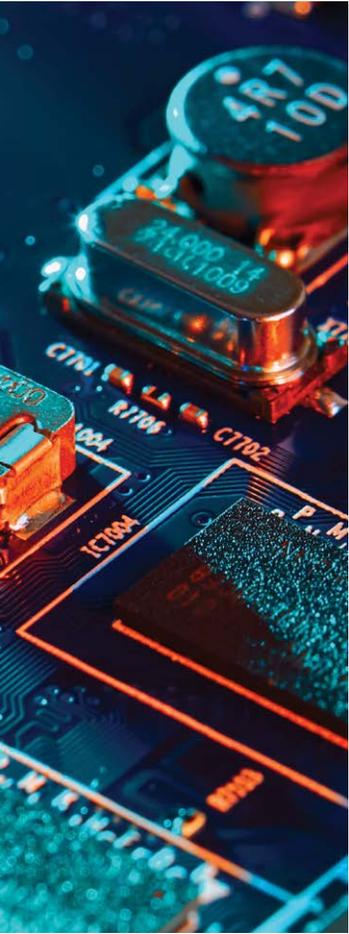
WATER TREATMENT
PURIFY // PROTECT // CONSERVE



MOBILE & WEARABLES
ACTIVE // SMART // TRANSFORMATIVE







ELECTRONICS

AT-A-GLANCE

Our Electronics business researches, develops, formulates, and delivers specialty chemicals and materials for all types of electronics hardware, from complex printed circuit board designs to new interconnection materials used in everyday consumer products.

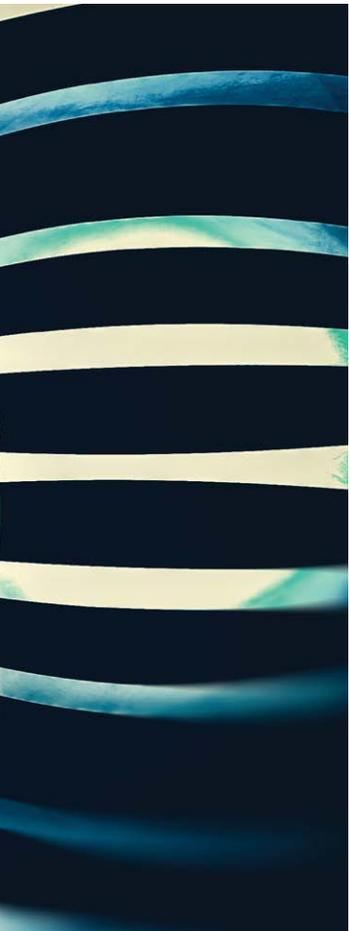
From wireless devices and computers to automotive and aerospace electronics, our products are an integral part of the electronics manufacturing industry. Our wet chemicals form the physical circuitry pathways, and our assembly materials join those pathways together. Supported by robust innovation and high-quality manufacturing, our regional and local experts deliver processing solutions to the global electronics supply chain.

VERTICALS

// Assembly Solutions
 // Circuitry Solutions
 // Semiconductor Solutions

INDUSTRIES & MARKETS SERVED

// Aerospace & Medical
 // Automotive Electronics
 // Consumer Electronics
 // Servers & Data Storage
 // Telecom Infrastructure



INDUSTRIAL & SPECIALTY

AT-A-GLANCE

Chemicals make the difference—when an object must be more durable, corrosion resistant, harder, rougher, smoother, safer, or more beautiful, our Industrial & Specialty business engineers the chemicals and chemical processes to meet those needs.

From automotive trim to transcontinental oil and gas pipelines, and from high-speed printing to protection of water conduits, our various markets share similar physical requirements to support ever-improving performance. We work together and on-site with customers to create and support innovative and reliable solutions.

VERTICALS

// Industrial Solutions
 // Graphic Solutions
 // Energy Solutions

INDUSTRIES & MARKETS SERVED

// Aerospace
 // Automotive
 // Construction
 // Consumer Packaged Goods
 // Oil & Gas Production



LETTER FROM THE **EXECUTIVE** CHAIRMAN

DEAR FELLOW SHAREHOLDERS,

This was a watershed year for our Company. We successfully executed on our strategic initiatives, specifically the sale of our Agricultural Solutions segment, Arysta LifeScience, while continuing to display strong financial performance. We started 2018 committed to separating our businesses, and the announcement of the definitive agreement to sell Arysta in July marked the culmination of this transformational initiative. As we neared the January 2019 completion of the divestiture, and the enormous amounts of preparation leading up to that closing, our Board and leadership team hit the ground running in launching Element Solutions Inc.

Element Solutions is a focused and nimble company with well-positioned businesses in growing end-markets. We are market leaders who provide a wide breadth of products and services to our businesses' customers. This translates to robust cash flow generation and high returns-on-capital, which are as good as I have ever seen in any business. Being led by a strong and evolving leadership team, I believe Element Solutions has a clear path to long-term value creation.

Our focus for capital allocation will be on continuing to grow our cash flows and intrinsic value by investing in high-return organic growth initiatives and strategic tuck-in acquisitions within existing markets. We are also focused on returning capital from our consistent and stable cash flows to our shareholders. As evidence of this, immediately following the divestiture we deployed more than \$430 million of cash to repurchase approximately 13% of our shares in one transaction. We will continue to remain opportunistic and disciplined in our capital allocation process and remain committed to preserving the healthy balance sheet position we have today.

The separation of Arysta and subsequent launch of Element Solutions represented substantial undertakings for our employees around the world. Our teams successfully executed on all of our stated strategic goals in 2018, which included ensuring that our remaining businesses delivered on their financial objectives. Despite some weakness in our end-markets, we were able to grow organically and increase our adjusted EBITDA, which highlights the resiliency of our businesses despite multiple distractions. As I have repeatedly said, our most important assets are our people and they performed most admirably throughout 2018. I believe Ben Gliklich, our new CEO, will carry the torch for enhancing and optimizing the culture within Element Solutions, to make it not only one of the most profitable specialty chemical companies in the industry, but also one of the most rewarding places to work.

As we look ahead, our momentum becomes stronger by the day and I am more confident than ever in the future of this company. This will be a business that stays true to its commitments and delivers results. This coming year has a lot of promise. We look forward to demonstrating our ability to grow, to manage costs and to generate cash flows for the benefit of all our stakeholders.

Respectfully yours,

A handwritten signature in black ink, appearing to read "Ma Franklin", written over a light gray background.

OFFICE OF THE CHAIRMAN

FROM LEFT:

// BENJAMIN GLIKLICH
Chief Executive Officer

// SCOT R. BENSON
President and Chief Operating Officer

// MARTIN E. FRANKLIN
Executive Chairman





LETTER FROM THE CEO

DEAR FELLOW SHAREHOLDERS,

Great things have happened since our last annual report. In the past twelve months, we completed the sale of Arysta LifeScience and the launch of Element Solutions Inc while delivering organic net sales and earnings growth in 2018, despite some of the more challenging end-markets we have seen in several years. The combination of these factors leaves us with a remarkable opportunity to deliver future value for our shareholders, deliver better outcomes for our customers and deliver a new operating culture. With a more focused business, a healthy balance sheet, a clear strategy and a rejuvenated sense of purpose—we have the wind at our back.

In the five years I have spent with our Company, there have been peaks and troughs and many learning opportunities. Through it all, the quality of our businesses and people have become more apparent every year. Now with Element Solutions, we have a renewed opportunity to demonstrate this in a more transparent and focused way. We do not view this as simply a new chapter for the old Platform but rather as a whole new book. So, let me write the introduction.

Element Solutions' market leading businesses participate in attractive, growing global markets and are supported by exceptional talent around the world. We dream big, and our goal is simply to be the best-performing specialty chemicals company in the world. We measure that in two ways—by looking at the value we deliver to customers and by looking at the cash flow return on the capital we allocate. We believe we can be the best-in-class specialty chemicals company by providing reliable products and integral service to our businesses' customers at a minimal cost relative to the value of their finished goods. This should allow for exceptional returns on the capital we deploy. Our businesses are not businesses that require major investments to grow or maintain margins. They require continuing targeted product development on the shoulders of decades of technical know-how embedded in our successful products today. They require incremental investment in technical service and knowledge transfer to support a global customer base.

These modest investments turn into sticky, high-margin sales of highly-value added, absolutely integral products to our businesses' customers. This generates material cash flow which we can then reinvest in our businesses once again, in adjacent businesses that bring us technology or geographic reach that will accelerate our growth, or in buybacks of our shares when the market does not appropriately acknowledge the strength of our cash flow engine or business quality. Our diverse end-markets, the surface area around our verticals, and the fragmentation of our end-markets should allow us opportunities to deploy capital in businesses that fit with us, have synergy content and do not dilute our business quality. We will be patient and unbiased in how we deploy our capital, always seeking out opportunities that aim to provide the highest risk adjusted rates of return for our shareholders.

Capital allocation is the path to compounding value, but it is predicated on strong day-to-day execution. While we serve great customers and end-markets, this is not a business where we can sit back and be order takers. Our success relies on daily execution in the lab and at the customer—we win on technology and service. Our products need to meet ever more challenging qualifications, so our R&D teams live on an innovation treadmill. Customers rely on our service, so we need to be “on call” to troubleshoot as long as their factory lights are on. They expect delivery turnaround in as little as two days and we want to manufacture to order—so our facilities must be nimble and responsive. These are the table stakes for our operations. We have a team that has been living and winning in this market for decades, that has evolved to meet changes in the industry through multiple cycles and views new challenges as opportunities. A team that believes—as Teddy Roosevelt said—that “far and away the best prize that life offers is a chance to work hard at work worth doing.” These people are the lifeblood of our business. Our most important assets go home every night.

This year, in conjunction with the launch of Element Solutions Inc, it is a priority of ours to ensure a unified culture takes root across this organization and an affinity to our values within Element Solutions grows. We are not an asset owner; we are a business. The culture of the legacy operations is strong: one of accountability, performance and ownership. We want to build on this. We summarize the values in Element Solutions as the 5Cs—Challenge, Commit, Collaborate, Choose, and Care. Element Solutions should be a challenging but rewarding workplace—a place where people challenge themselves, dare to take risks, and are rewarded for delivering on their challenging objectives. A company where people are committed; they make commitments and deliver on them. When we are committed to the Company and its vision, we think like owners. This is a company where we collaborate to meet our commitments, because our businesses rely on seamless delivery from the lab to our facilities to the customers' factory floor. Perhaps most importantly, we believe in our teams' power of choice. People choose their attitude and their level of effort. And we choose to hire high energy, high integrity people who are enthusiastic about our vision. We choose to reward those that embody our culture and exercise good judgment. And we care—we care about the customers, the environment around us, the world at large, and, most importantly, our people.

Thank you to the people who support us and most importantly to our people who will enable us on our shared journey.

With enthusiasm for Element Solutions' bright future,

A handwritten signature in black ink that reads "Benjamin Gilbrech". The signature is written in a cursive, flowing style.

THE ELEMENTS OF OUR CULTURE

We embody the 5 C's of our culture in our interactions with customers, colleagues and other counterparties to drive sustainable financial performance and create a rewarding environment.

// CHALLENGE

WE ESTABLISH AMBITIOUS GOALS, TAKE CALCULATED RISKS, MAINTAIN HIGH STANDARDS AND SEEK TO EXCEED EXPECTATIONS.

// COMMIT

WE MAKE COMMITMENTS AND HOLD OURSELVES ACCOUNTABLE, INDIVIDUALLY AND AS TEAMS, TO DELIVER ON THEM.

THE PILLARS OF OUR STRATEGY

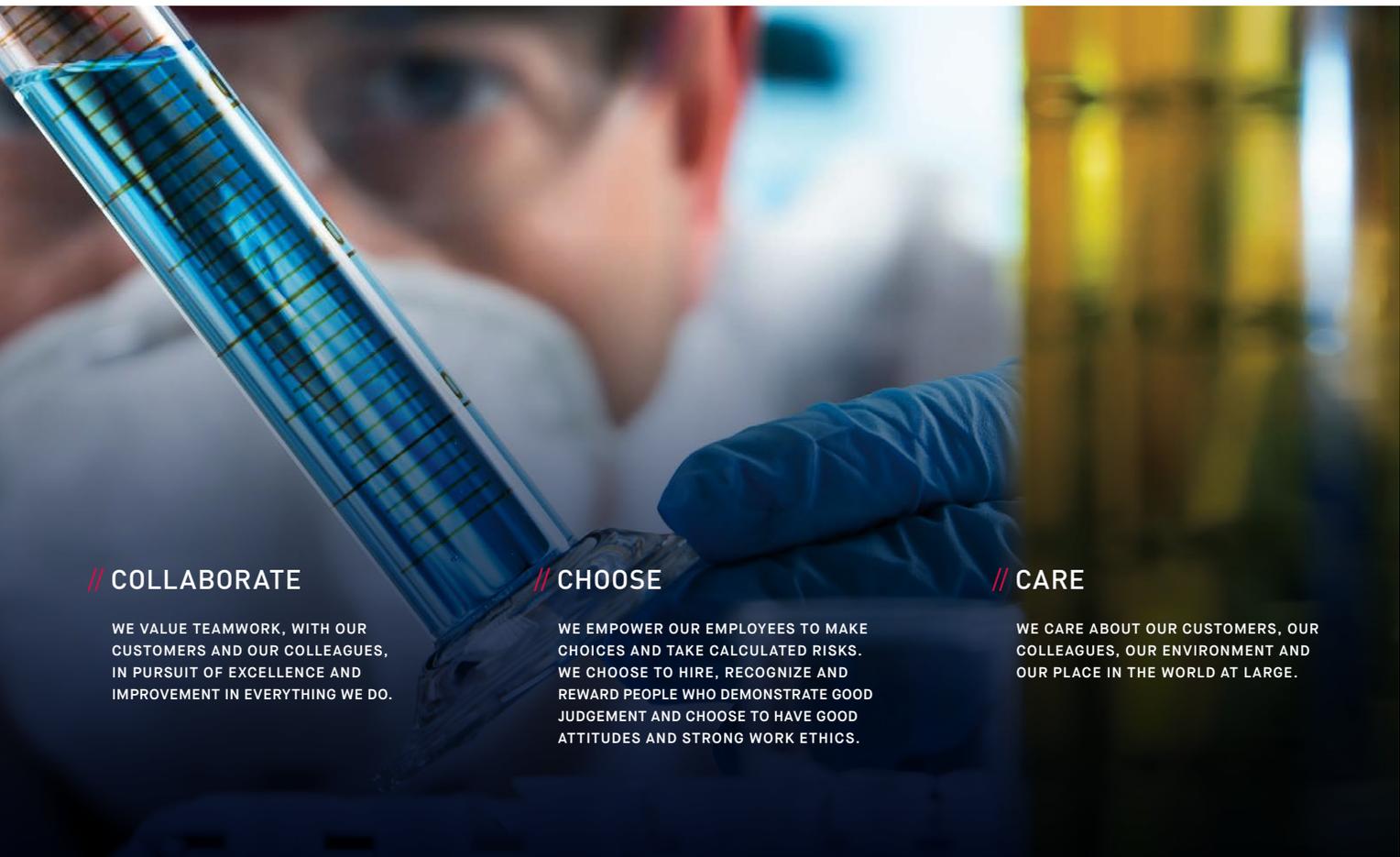
As a results-orientated company focused on innovation and service, our strategic pillars serve as foundational behaviors for long-term success and continuous high-performance.

// COMMERCIAL EXCELLENCE

WE UNDERSTAND THAT RELIABLY MEETING OUR CUSTOMERS' NEEDS LEADS TO SUCCESS FOR ALL PARTIES.

// MARKET-LEADING INNOVATION

OUR CUSTOMERS PARTICIPATE IN DYNAMIC MARKETS WHERE INNOVATION IS A MUST—WE MUST BE RIGHT ALONGSIDE THEM ON THE LEADING EDGE WITH FAST AND EFFICIENT INNOVATION PROCESSES TO KEEP OUR CUSTOMERS COMPETITIVE.



// COLLABORATE

WE VALUE TEAMWORK, WITH OUR CUSTOMERS AND OUR COLLEAGUES, IN PURSUIT OF EXCELLENCE AND IMPROVEMENT IN EVERYTHING WE DO.

// CHOOSE

WE EMPOWER OUR EMPLOYEES TO MAKE CHOICES AND TAKE CALCULATED RISKS. WE CHOOSE TO HIRE, RECOGNIZE AND REWARD PEOPLE WHO DEMONSTRATE GOOD JUDGEMENT AND CHOOSE TO HAVE GOOD ATTITUDES AND STRONG WORK ETHICS.

// CARE

WE CARE ABOUT OUR CUSTOMERS, OUR COLLEAGUES, OUR ENVIRONMENT AND OUR PLACE IN THE WORLD AT LARGE.



// ENABLING SUSTAINABILITY

IT IS OUR RESPONSIBILITY AND COMMERCIALLY COMPELLING TO DEVELOP SUSTAINABLE PRODUCTS THAT NOT ONLY MEET BUT EXCEED THE STRINGENT ENVIRONMENTAL STANDARDS OUR CUSTOMERS ARE HELD TO.

// DECISIVENESS & ACTION ORIENTATION

WE EMPOWER OUR EMPLOYEES TO ACT SWIFTLY AND COMMIT TO DECISIONS THAT PRIORITIZE OUR CUSTOMERS AND REINFORCE OUR RESULTS-DRIVEN CULTURE.

// RECRUITMENT & TALENT DEVELOPMENT

WE ACTIVELY RECRUIT THE BEST PEOPLE FOR THE JOB AND RETAIN THEM THROUGH A MERITOCRATIC CULTURE AND EMPHASIS ON TALENT DEVELOPMENT.



GLOBAL PRESENCE

Element Solutions has a broad footprint of sales, technology, manufacturing and local relationships around the globe.

Our world class people operate in all of our key markets and operate close to their customers, allowing us to nurture strong relationships and drive our product innovation based on customer needs.

KEY FACTS & FIGURES

\$1,961M

2018 NET SALES

\$421M

2018 ADJUSTED EBITDA*

>21%

2018 ADJUSTED EBITDA MARGIN

50+

COUNTRIES

~40

MANUFACTURING FACILITIES

15+

TECHNICAL CENTERS

4,000+

PEOPLE

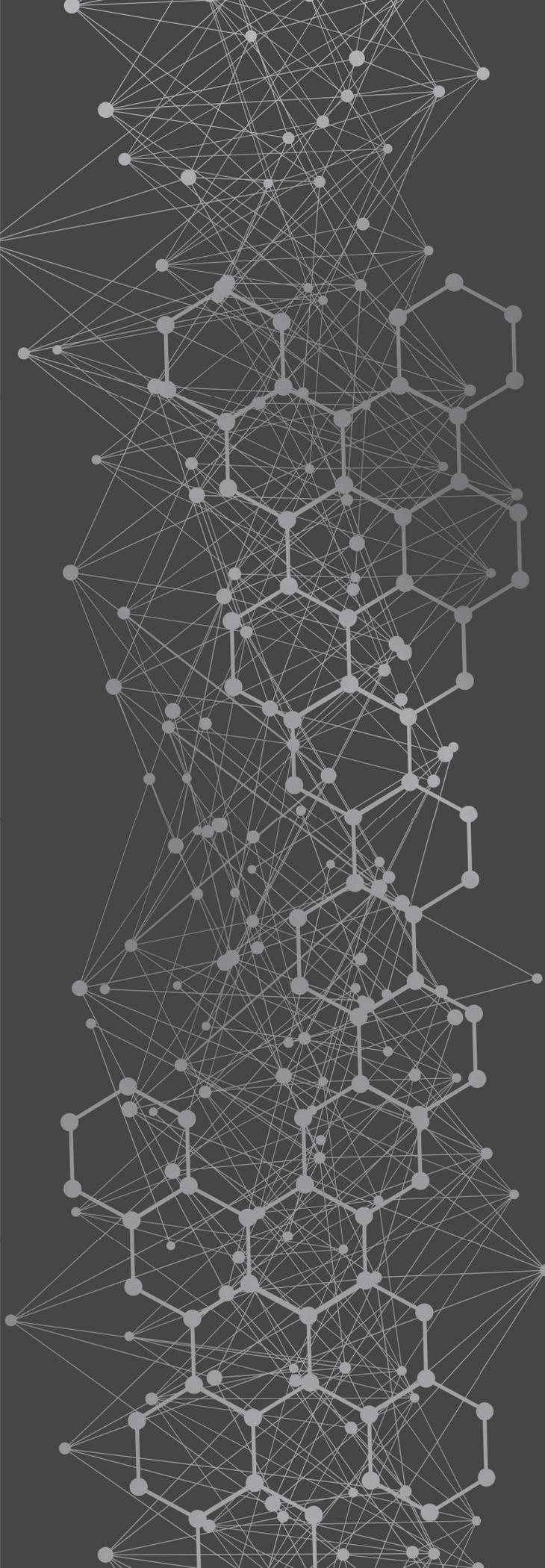
~14,000

CUSTOMERS

2,000+

PATENTS

* For a definition and reconciliation of Adjusted EBITDA, see pp. F-44 and F-45 of the 2018 Annual Report on Form 10-K.



element
solutions

2018 ANNUAL REPORT
ON FORM 10-K

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

FORM 10-K

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

For the fiscal year ended December 31, 2018

OR

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

For the transition period from _____ to _____

Commission file number: 001-36272



Element Solutions Inc

(Exact name of Registrant as specified in its charter)

Delaware

(State or other jurisdiction of incorporation or organization)

37-1744899

(I.R.S. Employer Identification No.)

1450 Centrepark Boulevard, Suite 210
West Palm Beach, Florida

(Address of principal executive offices)

33401
(Zip Code)

Registrant's telephone number, including area code: (561) 207-9600

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

<u>Title of Each Class</u>	<u>Name of Each Exchange on Which Registered</u>
Common Stock, par value \$0.01 per share	The 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 Exchange Act. Yes No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes No

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

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

Large accelerated filer

Accelerated filer

Non-Accelerated filer

Smaller reporting company

Emerging growth company

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

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

The number of shares of common stock outstanding as of February 22, 2019 was 252,395,608. The aggregate market value of the common stock held by non-affiliates as of June 30, 2018 was approximately \$2.35 billion, based upon the last reported sales price for such date on the NYSE. All (i) executive officers and directors of the registrant and (ii) all persons who hold 10% or more of the registrant's outstanding common stock have been deemed, solely for the purpose of the foregoing calculation, to be "affiliates" of the registrant.

Documents Incorporated By Reference

Portions of the registrant's definitive proxy statement for its 2019 annual meeting of stockholders, which 2019 Proxy Statement will be filed no later than 120 days after the close of the registrant's fiscal year ended December 31, 2018, are hereby incorporated by reference in Part III of this 2018 Annual Report on Form 10-K.

Element Solutions Inc
ANNUAL REPORT ON FORM 10-K
For the year ended December 31, 2018

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GLOSSARY OF DEFINED TERMS

Terms	Definitions
<i>Element Solutions; We; Us; Our; the Company</i>	Element Solutions Inc (fka Platform Specialty Products Corporation), a Delaware corporation, and, where the context requires, its subsidiaries or operating businesses.
<i>Acquisitions</i>	Agriphar Acquisition, Alent Acquisition, Arysta Acquisition, CAS Acquisition, MacDermid Acquisition, OMG Acquisition and OMG Malaysia Acquisition, collectively.
<i>Agriphar</i>	Percival S.A., a formerly Belgium <i>société anonyme</i> , and its agrochemical business, Agriphar.
<i>Agriphar Acquisition</i>	Acquisition of a 100% interest in Agriphar, completed on October 1, 2014.
<i>Alent</i>	Alent plc, a formerly public limited company registered in England and Wales.
<i>Alent Acquisition</i>	Acquisition of a 100% interest in Alent, completed on December 1, 2015 under the U.K. Companies Act 2006, as amended.
<i>Arysta</i>	Arysta LifeScience Limited, formerly an Irish private limited company.
<i>Arysta Acquisition</i>	Acquisition of a 100% interest in Arysta, completed on February 13, 2015.
<i>Arysta Sale</i>	Sale by Element Solutions of 100% of the issued and outstanding shares of common stock of Arysta and its subsidiaries to UPL for an aggregate purchase price of approximately \$4.2 billion in cash, subject to adjustments, completed on January 31, 2019.
<i>Arysta Sale Agreement</i>	Stock Purchase Agreement, dated July 20, 2018, as amended by Amendment Number One to Stock Purchase Agreement, dated as of January 25, 2019, related to the Arysta Sale.
<i>ASU</i>	Accounting Standards Update.
<i>Board</i>	Element Solutions' board of directors.
<i>Bribery Act</i>	The United Kingdom Bribery Act 2010.
<i>CAS</i>	Chemtura AgroSolutions business of Chemtura Corporation, a Delaware corporation.
<i>CAS Acquisition</i>	Acquisition of a 100% interest in CAS, completed on November 3, 2014.
<i>Credit Agreement</i>	Element Solutions' Second Amended and Restated Credit Agreement, dated as of August 6, 2014, among, inter alia, Element Solutions, MacDermid Holdings, LLC, MacDermid, the subsidiaries of Element Solutions and MacDermid Holdings, LLC from time to time parties thereto, the lenders from time to time parties thereto and Barclays Bank PLC, as administrative agent and collateral agent, as amended and restated from time to time, which was terminated on January 31, 2019 in connection with the closing of the Arysta Sale.
<i>Credit Facilities</i>	The First Lien Credit Facility and the Revolving Credit Facility, collectively, available under the Credit Agreement.
<i>EBITDA</i>	Earnings before interest, taxes, depreciation and amortization.
<i>ESPP</i>	Platform Specialty Products Corporation 2014 Employee Stock Purchase Plan.
<i>E.U.</i>	European Union.
<i>Exchange Act</i>	Securities Exchange Act of 1934, as amended.
<i>FASB</i>	Financial Accounting Standard Board.
<i>FCPA</i>	Foreign Corrupt Practices Act of 1977.
<i>February 2015 Notes Offering</i>	Element Solutions' private offering of \$1.10 billion aggregate principal amount of 6.50% USD Notes due 2022 and €350 million aggregate principal amount of 6.00% EUR Notes due 2023, completed on February 2, 2015.
<i>First Lien Credit Facility</i>	First lien credit facility available under the Credit Agreement.
<i>Founder Entities</i>	Mariposa Acquisition, LLC and Berggruen Holdings Ltd. and its affiliates, collectively.
<i>GAAP</i>	Generally Accepted Accounting Principles in the United States.
<i>MacDermid</i>	MacDermid, Incorporated, a Connecticut corporation.
<i>MacDermid Acquisition</i>	Element Solutions' acquisition on October 31, 2013 of substantially all of the equity of MacDermid Holdings, LLC, which, at the time, owned approximately 97% of MacDermid. Element Solutions acquired the remaining 3% of MacDermid on March 4, 2014, pursuant to the terms of the Exchange Agreement, dated October 25, 2013, between Element Solutions and the fiduciaries of the MacDermid, Incorporated Profit Sharing and Employee Savings Plan.
<i>MacDermid Printing</i>	MacDermid Printing Solutions LLC, now known as MacDermid Graphics Solutions LLC.

GLOSSARY OF DEFINED TERMS

Terms	Definitions
<i>New Credit Agreement</i>	Element Solutions' new Credit Agreement, dated as of January 31, 2019, among, inter alia, Element Solutions and MacDermid, as borrowers, certain subsidiaries of Element Solutions and MacDermid from time to time parties thereto, the lenders from time to time parties thereto, and Barclays Bank PLC, as administrative agent and collateral agent.
<i>November 2015 Notes Offering</i>	Element Solutions' private offering of \$500 million aggregate principal amount of 10.375% USD Notes due 2021, completed on November 10, 2015.
<i>NYSE</i>	New York Stock Exchange.
<i>OEM</i>	Original Equipment Manufacturer.
<i>OMG</i>	OM Group, Inc. (NYSE:OMG), a Delaware corporation.
<i>OMG Businesses</i>	OMG's Electronic Chemicals and Photomasks businesses, collectively, other than their Malaysian subsidiary acquired separately.
<i>OMG Acquisition</i>	Element Solutions' acquisition of the OMG Businesses completed on October 28, 2015.
<i>OMG Malaysia</i>	OMG Electronic Chemicals (M) Sdn Bhd, a subsidiary of OMG located in Malaysia, acquired separately by Element Solutions in the OMG Malaysia Acquisition.
<i>OMG Malaysia Acquisition</i>	Element Solutions' acquisition of 100% interest in OMG Malaysia completed on January 31, 2016.
<i>PCAOB</i>	Public Company Accounting Oversight Board.
<i>PDH</i>	Platform Delaware Holdings, Inc., a subsidiary of Element Solutions.
<i>PDH Common Stock</i>	Shares of common stock of PDH.
<i>Prior Senior Notes</i>	Element Solutions' 6.00% EUR Notes due 2023 and 6.50% USD Notes due 2022, collectively.
<i>Prior Senior Notes Indenture</i>	The indenture, dated as of February 2, 2015, governing the Prior Senior Notes.
<i>Revolving Credit Facility</i>	Revolving Credit Facility (in U.S. dollars or multicurrency) available under the Credit Agreement.
<i>RHSA</i>	Retaining Holder Securityholders' Agreement, dated as of October 31, 2013, entered into by and between Element Solutions and each Retaining Holder pursuant to which they agreed to exchange their respective interests in MacDermid Holdings, LLC for shares of PDH Common Stock, at an exchange rate of \$11.00 per share plus (i) a proportionate share of the \$100 million contingent consideration and (ii) an interest in certain MacDermid pending litigation.
<i>ROA</i>	Return on assets.
<i>RSUs</i>	Restricted stock units issued by Element Solutions from time to time under the 2013 Plan.
<i>SEC</i>	Securities and Exchange Commission.
<i>Securities Act</i>	Securities Act of 1933, as amended.
<i>September 2016 Equity Offering</i>	Element Solutions' public offering of 48,787,878 shares of its common stock at a public offering price of \$8.25 per share, which closed on September 21, 2016, raising gross proceeds of approximately \$402.5 million.
<i>Series A Preferred Stock</i>	Element Solutions' 2,000,000 shares of Series A convertible preferred stock, which are convertible into shares of Element Solution's common stock, on a one-for-one basis, at any time at the option of the Founder Entities.
<i>Series B Convertible Preferred Stock</i>	Element Solutions' 600,000 shares of Series B convertible preferred stock issued to Nalozo, L.P., an affiliate of Nalozo S.à.r.l., a Luxembourg limited liability company and the original seller in the Arysta Acquisition. At December 31, 2016, none of the Series B Convertible Preferred Stock remained outstanding.
<i>SERP</i>	Supplemental Executive Retirement Plans for executive officers of Element Solutions.
<i>TCJA</i>	Tax Cuts and Jobs Act of 2017.
<i>UPL</i>	UPL Corporation Ltd., a Mauritius public limited company and a wholly-owned subsidiary of UPL Limited.
<i>WACC</i>	Weighted Average Cost of Capital.
<i>2013 Plan</i>	Platform Specialty Products Corporation Amended and Restated 2013 Incentive Compensation Plan.
<i>2018 Annual Report</i>	This annual report on Form 10-K for the fiscal year ended December 31, 2018.
<i>2017 Notes Offerings</i>	Element Solutions' private offering of 5.875% USD Notes due 2025, completed on November 24, 2017 and December 8, 2017.

GLOSSARY OF DEFINED TERMS

Terms	Definitions
<i>2019 Proxy Statement</i>	Element Solutions' definitive proxy statement for its 2019 annual meeting of stockholders expected to be filed no later than 120 days after December 31, 2018.
<i>5.875% USD Notes Indenture</i>	The indenture, dated as of November 24, 2017, governing the 5.875% USD Notes due 2025.
<i>5.875% USD Notes due 2025</i>	Element Solutions' \$800 million aggregate principal amount of 5.875% senior notes due 2025, denominated in U.S. dollars, issued in the 2017 Notes Offering.
<i>6.00% EUR Notes due 2023</i>	Element Solutions' €350,000,000 aggregate principal amount of 6.00% senior notes due 2023, denominated in euros, issued in the February 2015 Notes Offering and redeemed on February 1, 2019.
<i>6.50% USD Notes due 2022</i>	Element Solutions' \$1,100,000,000 aggregate principal amount of 6.50% senior notes due 2022, denominated in U.S. dollars, issued in the February 2015 Notes Offering and redeemed on February 1, 2019.
<i>10.375% USD Notes Indenture</i>	The indenture, dated November 10, 2015, as amended from time to time, governing the 10.375% USD Notes due 2021.
<i>10.375% USD Notes due 2021</i>	Element Solutions' 10.375% senior notes due 2021, denominated in U.S. dollars, issued in the November 2015 Notes Offering. As of December 31, 2017, none of the 10.375% USD Notes due 2021 remained outstanding.

Discontinued Operations

Unless otherwise specified, the results and disclosures presented in this 2018 Annual Report exclude discontinued operations. Discontinued operations relate to Element Solutions' former Agricultural Solutions business, which consisted of Arysta and its subsidiaries. Accordingly, Agricultural Solutions' assets, liabilities, operating results and cash flows for all periods presented have been classified as discontinued operations within the Consolidated Financial Statements. See *Note 5, Discontinued Operations*, to the Consolidated Financial Statements included in this 2018 Annual Report for information related to Agricultural Solutions. The Arysta Sale to UPL was completed on January 31, 2019.

Forward-Looking Statements

This 2018 Annual Report contains forward-looking statements that can be identified by words such as "expect," "anticipate," "project," "will," "should," "believe," "intend," "plan," "estimate," "predict," "seek," "continue," "outlook," "may," "might," "can have," "likely," "potential," "target" or "hope" and variations of such words and similar expressions. Examples of forward-looking statements include, but are not limited to, statements, beliefs, projections and expectations regarding our corporate reorganization; business strategy and potential shares repurchases; cost savings and efficiencies relating to the Arysta Sale or otherwise; the impact of new accounting standards and accounting changes; our dividend policy; the effects of global economic conditions on our business and financial condition; our hedging activities; timing and outcome of environmental and legal matters; our goodwill and other intangible assets; price volatility and cost environment; our liquidity and capital resources; our funding sources; our capital expenditures; our debt; off-balance sheet arrangements and contractual obligations; general views about future operating results; our risk management programs; our business and management strategies; future prospects; and other events or developments that we expect or anticipate will occur in the future.

Forward-looking statements are based on management's assumptions and assessments in light of past experience and trends, current economic and industry conditions, expected future developments and other relevant factors. These statements are not guarantees of future performance, actions or events, and are subject to risks and uncertainties. If one or more of these risks or uncertainties materialize, or if management's underlying estimates, assumptions or expectations prove to be inaccurate or are unrealized, actual results may differ materially from those contemplated by these statements. A discussion of such risks and uncertainties include, without limitation, the risks set forth in Part I, Item 1A, "Risk Factors" in this 2018 Annual Report. Any forward-looking statement made by us in this 2018 Annual Report is based only on information currently available to us and speaks only as of the date on which it is made. We undertake no obligation to update or revise any forward-looking statement, whether as a result of new information, future events or otherwise. Please consult any further disclosures we make on related subjects in the Company's SEC filings.

Non-GAAP Financial Measures

This 2018 Annual Report contains the following non-GAAP financial measures: Adjusted EBITDA and operating results on a constant currency and organic basis. Non-GAAP financial measures should not be considered in isolation from, as a substitute for, or superior to, performance measures calculated in accordance with GAAP. For definitions of these non-GAAP financial measures and additional information on why they are presented, their respective limitations and reconciliations to the most comparable applicable GAAP measures, see "*Non-GAAP Financial Measures*" in the Management's Discussion and Analysis of Financial Condition and Results of Operations section in Part II, Item 7, and *Note 23, Segment Information*, to the Consolidated Financial Statements, all included in this 2018 Annual Report.

Part I

Item 1. Business

Unless the context otherwise indicates or requires, all product names and trade names used in this 2018 Annual Report are our trademarks, some of which may be registered in certain jurisdictions. Although we have omitted the “®” and “TM” trademark designations for some of these marks, all rights to such trademarks are nevertheless reserved. This 2018 Annual Report contains additional trade names of other companies. We do not intend our use or display of such other companies’ trade names to imply a relationship with, or endorsement or sponsorship of us by, these other companies. Unless otherwise specified in this 2018 Annual Report, all references to currency, monetary values and dollars set forth herein shall mean U.S. dollars.

Business Overview

Element Solutions, incorporated in Delaware in January 2014, is a leading global specialty chemicals company whose operating businesses formulate a broad range of solutions that enhance the performance of products people use every day. Developed in multi-step technological processes, our businesses' innovative solutions enable customers' manufacturing processes in several key industries, including electronic circuitry, communications infrastructure, automotive systems, industrial surface finishing, consumer packaging and offshore energy. Substantially all of our businesses' products are consumed by our customers as part of their production process, providing us with reliable and recurring revenue streams as the products are replenished in order to continue production. Those customers use our innovation as a competitive advantage, relying on us to help them navigate through fast-paced, high-growth markets. Our product development and product extensions are expected to continue to drive sales growth in both new and existing markets, while expanding margins, by continuing to offer high customer value propositions.

We believe the majority of our businesses hold strong positions in high-growth markets they serve. Our strategy is based on a balance of operational excellence and prudent capital allocation. To that end, our teams focus on commercial execution through strong sales, marketing, product development and supply chain efficiency; while our senior leadership balances holding business teams responsible for operational execution with prioritizing and executing on capital allocation opportunities. In the future, we may pursue targeted and opportunistic acquisitions in our existing and adjacent end-markets that strengthen our current businesses, expand and diversify our product offering, and enhance our growth and strategic position.

Recent Developments

Closing of the Arysta Sale

On July 20, 2018, we agreed to sell 100% of the issued and outstanding shares of common stock of Arysta and its subsidiaries to UPL, pursuant to the terms and conditions of the Arysta Sale Agreement. The Arysta Sale was completed on January 31, 2019 for an aggregate purchase price of approximately \$4.20 billion in cash, subject to certain post-closing adjustments relating to, among other things, cash, indebtedness and working capital as of the closing date. The proceeds of the Arysta Sale were primarily used to pay down a portion of our then existing term loan borrowings under the Credit Agreement.

Accordingly, the Agricultural Solutions business is being reported as discontinued operations in this 2018 Annual Report. In connection with the Arysta Sale, we recorded an estimated asset impairment loss in 2018 of \$450 million as the carrying value of the Agricultural Solutions' business exceeded its estimated fair value, less costs to sell, primarily due to the recognition of foreign currency translation adjustments previously recorded in "Accumulated other comprehensive loss" within Stockholders' Equity. This charge reflects our best estimate of the impairment loss at this time. The actual loss will be dependent on a number of factors, including foreign exchange rates on the closing date of the sale and other closing adjustments.

Recapitalization

New Credit Agreement

Using the proceeds from the Arysta Sale, we paid down our then existing Credit Facilities, including the First Lien Credit Facility and the Revolving Credit Facility. On the closing date of the Arysta Sale, we also entered into the New Credit Agreement which provides for new senior secured credit facilities in an aggregate principal amount of \$1.08 billion, consisting of a revolving facility of \$330 million maturing in 2024 and a term loan of \$750 million maturing in 2026. The revolving facility includes borrowing capacity in the form of letters of credit of up to \$100 million. On the closing date of the Arysta Sale, the \$750 million term loan was borrowed under the New Credit Agreement.

Redemption of Prior Senior Notes

Effective on February 1, 2019, all outstanding Prior Senior Notes were redeemed and the Prior Senior Notes Indenture was terminated. This redemption was funded with a portion of the net proceeds from the Arysta Sale and a portion of term loan borrowings under the New Credit Agreement. As of February 1, 2019, our 5.875% senior notes due 2025 remain outstanding.

Share Repurchases

On February 8, 2019, as part of our previously-announced stock repurchase program, we repurchased 37 million shares of our common stock from Pershing Square Capital Management, L.P., advisor to certain Pershing Square investment funds, in a privately-negotiated transaction, for a per share purchase price of \$11.72, the last sale price reported for the Company's shares as of the 4 pm close of trading on the NYSE on Friday, February 1, 2019, or an aggregate purchase price of \$434 million. These repurchased shares, which represented approximately 13% of our issued and outstanding common stock, were retired on that date. The repurchase was funded from cash on hand and borrowings under the New Credit Agreement.

Corporate Reorganization and Name Change

Upon the closing of the Arysta Sale, the Company's initiated a corporate reorganization to combine certain corporate functions with those of our former Performance Solutions segment and position the Company best for its next stage.

In this context, effective on the closing date of the Arysta Sale, Rakesh Sachdev retired as Chief Executive Officer while remaining a member of the Board, and Benjamin Gliklich, then Executive Vice President - Operations & Strategy, was appointed as Chief Executive Officer. Mr. Gliklich was also elected to serve as a director of Element Solutions. Additionally, Scot R. Benson, formerly President of our former Performance Solutions segment, was appointed as President and Chief Operating Officer. Finally, Martin E. Franklin, then Chairman of the Board, was named Executive Chairman of the Board.

Effective January 31, 2019, we changed our legal name from "Platform Specialty Products Corporation" to "Element Solutions Inc," and effective February 1, 2019, our shares of common stock began trading on the NYSE under the ticker symbol "NYSE:ESI."

Simultaneously with this name change, we launched a new corporate website: www.elementsolutionsinc.com. Our investor relations information, including press releases and links to our filings with the SEC, can now be found on this website. The information included on our website does not constitute part of this 2018 Annual Report.

Acquisitions

OMG Malaysia Acquisition - On January 31, 2016, we completed the OMG Malaysia Acquisition for approximately \$124 million. We acquired OMG Malaysia to further enhance our Electronics business segment in which OMG Malaysia is included.

Alent Acquisition - On December 1, 2015, we completed the Alent Acquisition for approximately \$1.74 billion in cash and 18,419,738 shares of our common stock issued to Alent shareholders. Legacy Alent was a global supplier of specialty chemicals and engineered materials used primarily in electronics, automotive and industrial applications, and a supplier of high performance, consumable products and services. Alent's business is included in our Electronics business segment.

OMG Acquisition - On October 28, 2015, we completed the OMG Acquisition for a total purchase price of approximately \$239 million in cash. The acquired OMG Businesses are included in our Electronics business segment. OMG's Electronic Chemicals business is similar to the legacy MacDermid electronic chemical and surface treatment businesses, as it develops, produces and supplies chemicals for electronic and industrial applications. OMG's Photomasks products are used by customers to produce semiconductors and related products.

Arysta Acquisition - On February 13, 2015, we completed the Arysta Acquisition for approximately \$3.50 billion, consisting of \$2.86 billion in cash and the issuance of \$600 million of Series B Convertible Preferred Stock. The legacy Arysta business was a solutions-oriented business model which focused on product innovation to address grower needs, offering crop protection solutions, including biosolutions and seed treatment products, to growers worldwide. The legacy Arysta business was included in our historical Agricultural Solutions business segment until the Arysta Sale and the related reclassification of its results into discontinued operations.

CAS Acquisition - On November 3, 2014, we completed the CAS Acquisition for \$1.04 billion, consisting of \$983 million in cash and 2,000,000 shares of our common stock. Legacy CAS was a niche provider of seed treatments and agrochemical products for a wide variety of crop protection applications in numerous geographies and was included in our historical Agricultural Solutions business segment until the Arysta Sale and the related reclassification of its results into discontinued operations.

Agriphar Acquisition - On October 1, 2014, we completed the Agriphar Acquisition for a purchase price of approximately €300 million (\$370 million), consisting of \$350 million in cash and 711,551 shares of our common stock. Legacy Agriphar was a European crop protection group which provided a wide range of fungicides, herbicides and insecticides with end markets primarily across Europe. The legacy Agriphar business was included in our historical Agricultural Solutions business segment until the Arysta Sale and the related reclassification of its results into discontinued operations.

Business Segments

In the fourth quarter, we completed certain changes to our organizational structure that resulted in a change to our reportable business segments. The previously reported Agricultural Solutions segment met the requirements to be classified as discontinued operations and the previously reported Performance Solutions segment was separated into two segments: Electronics and Industrial & Specialty, which represent businesses for which separate financial information is utilized by our chief operating decision maker, or CODM, for purposes of allocating resources and evaluating performance.

Our businesses generate revenue through the formulation and sale of our dynamic chemistry solutions. Our extensive network of specially-trained scientists and engineers, drawing upon our broad and longstanding intellectual property portfolio and technical expertise, work closely with our customers and OEMs on an ongoing basis to develop proprietary solutions to their manufacturing needs and to ultimately win qualifications and specifications into their supply-chains. We leverage our teams' close relationships to execute our growth strategy by working directly with customers and OEMs to identify opportunities for new product development. Our continuous focus on customer-centric innovation serves as a catalyst to drive specification change and to capitalize on adjacent market opportunities in our industry.

In addition, our employees provide technical service and support to customers in conjunction with the sale of products in order to optimize functional performance of the processes used at their manufacturing locations. Our businesses' specialty chemicals and processes are seen as integral to their customers' product performance. We believe that our customers place significant value on the consistency and quality represented by our brands, which we capitalize on through significant market share, customer loyalty and supply chain access.

In 2018, we achieved sales of \$1.96 billion, to which our Electronics and Industrial & Specialty segments each contributed approximately 59% and 41%, respectively. Neither segment is subject to significant seasonality, and both share a common focus on attractive niche markets, which we believe will grow faster than the diverse end-markets each segment serves. For further financial information about our operating segments and the geographic areas in which we do business, see *Note 23, Segment Information*, to the Consolidated Financial Statements included in this 2018 Annual Report.

Electronics

Our Electronics business researches, formulates and delivers specialty chemicals and materials for all types of electronics hardware, from complex printed circuit board designs to new interconnection materials. In mobile communications, computers, automobiles and aerospace equipment, Electronics' products are an integral part of the electronics manufacturing process and the functionality of their goods. The segment's "wet chemistries" for metallization, surface treatments and solderable finishes form physical circuitry pathways and the segment's "assembly materials," such as solders, pastes, fluxes and adhesives, join those pathways together. While the process chemistries of our Electronics business comprise a small portion of the total cost of its customers' finished device, they are a critical component for maintaining the end product's performance.

Our Electronics segment provides specialty chemicals through the following businesses:

Assembly Solutions - representing approximately 50% of the segment's 2018 net sales. As a global supplier of solder technologies, fluxes, cleaners and other attachment materials for the electronics assembly industry, we develop innovative materials that join electronic circuits in high volume device manufacturing. Our high-performing interconnect materials are used to assemble consumer electronics from circuit boards, discrete electronic components, connectors and integrated circuit substrates. We believe our growth in this business will be driven by the increasing use of electronics in consumer, automotive, telecommunications, memory, medical, aerospace and other markets.

Circuitry Solutions - representing approximately 35% of the segment's 2018 net sales. As a global supplier of chemical formulations to the electronics industry, we design and manufacture proprietary liquid chemical processes ("bath") used by our customers to manufacture printed circuit boards. Our product portfolio is focused on specialized consumable chemical processes, such as surface treatments, circuit formation, primary metallization, electroplate and final finishes. We believe our growth in this business will be driven by demand in telecommunication, wireless devices and computers and the increasing use of electronics in automobiles.

Semiconductor Solutions - representing approximately 15% of the segment's 2018 net sales. As a global supplier of semiconductor materials and packaging technologies, we provide advanced copper interconnects, die attachment, wafer bump processes and photomask technologies to our customers for integrated circuit fabrication and semiconductor packaging. We believe our growth in this business will be driven by advanced electronics packaging, memory and the increasing computing complexity in general electronics, automotive and industrial markets.

Products

A selection of Electronics' product offerings is presented below:

Assembly Solutions	
<i>Electronic Assembly Materials</i>	Chemicals and materials used in circuit board and electronic device assembly. Our product offering is primarily focused on solder technologies including solder alloys, wires, pastes and preforms. The portfolio also includes fluxes, adhesives, encapsulants, cleaners and stencils, all of which facilitate wave solder and surface mount assembly activities.
Circuitry Solutions	
<i>Circuit Board Metallization</i>	Plating products are used to plate holes drilled through printed circuit boards to connect opposite sides of the board and multi-layered printed circuit boards. Our key products include the <i>MacuSpec</i> , <i>M-Copper</i> and <i>M-System</i> .
<i>Circuit Formation Products</i>	Circuit formation products represent an assortment of products for defining circuit patterns and bonding conductors to insulating materials.
<i>Electronic Materials</i>	Specialty products developed for evolving electronic applications including photovoltaics, memory disk and molded interconnect devices manufacturing as well as lead frame and dielectric plating solutions.
Semiconductor Solutions	
<i>Semiconductor Materials & Packaging Applications</i>	Our <i>Argomax</i> line of advanced sinter technology is used in power semiconductor and solid state lighting markets to improve reliability and device performance. Our <i>Viaform</i> product family of copper damascene chemistry is used in semiconductor plating applications for creating conductors as narrow as 10 nanometers. Our <i>Microfab</i> family of plating chemistry is used in wafer level packaging applications, including copper pillar, redistribution layers (RDLs), nickel, tin bump, gold bump and thru-silicon via (TSV) applications.

Industrial & Specialty

Our Industrial & Specialty business provides customers with Industrial Solutions, which include chemical systems that protect and decorate metal and plastic surfaces; Graphics Solutions, which include consumable chemicals that enable printing image transfer on flexible packaging materials; and Energy Solutions, which include dynamic chemistries used in water-based hydraulic control fluids for offshore deep-water drilling. Industrial & Specialty's fully consumable products are used in the aerospace, automotive, construction, consumer electronics, consumer packaged goods and oil and gas production end markets.

Our Industrial & Specialty segment provides specialty chemicals through the following businesses:

Industrial Solutions - representing approximately 70% of the segment's 2018 net sales. As a global supplier of industrial metal and plastic finishing chemistries, our chemical systems protect and decorate metal and plastic surfaces. Some of our precisely formulated high-performance coatings have functional uses, including improving wear and tear, such as hard chrome plating of shock absorbers for cars and special drills used for oil and gas exploration, while others provide corrosion resistance for appliance parts. Alternatively, our chemistries may have decorative performance, such as the application of gloss finishes for parts used in automotive interiors or fashion finishes used on jewelry surfaces. Our industrial customer base is highly diverse and includes customers in the following end markets: appliances and electronics equipment; automotive parts; industrial parts; plumbing goods; construction equipment and transportation equipment. We believe our growth in this industry will be primarily driven by increased worldwide automobile production with elevated fashion elements and content per vehicle.

Graphics Solutions - representing approximately 20% of the segment's 2018 net sales. As a supplier of consumable materials used to transfer images to printed substrates, our products are used to improve print quality and printing productivity. We produce and market photopolymers through an extensive line of flexographic plates that are used in the commercial packaging and printing industries. Photopolymers are molecules that change properties upon exposure to light. Flexography is a printing process that utilizes flexible printing plates made of rubber or other flexible plastics. We believe growth in this business will be driven by consumer demand and market shifts that favor the use of our package imaging technologies that offer a lower cost of ownership to our customers.

Energy Solutions - representing approximately 10% of the segment's 2018 net sales. As a global supplier of specialized fluids to the offshore energy industry, we produce, market and support water-based hydraulic control fluids for major oil and gas companies and drilling contractors for offshore deep-water production and drilling applications. We believe our growth in this business will be driven by continued capital expenditures in energy exploration and production.

Products

A selection of Industrial & Specialty's product offerings is presented below:

Industrial Solutions

Electroless Nickel Electroless nickel is applied to a variety of metal and plastic surfaces to enhance corrosion resistance, wear resistance, solderability and to repair worn or over-machined surfaces in a variety of applications.

Plating Products The *CuMac* range of products for applications such as plating on aluminum wheels, plastic substrates and zinc-based die castings, and the *ChromKlad* and *ANKOR* range of hard chromium plating processes are utilized in various industrial finishing applications.

Pre-treatment and Cleaning Solutions Pre-treatment and cleaning solutions are applied to prepare the surfaces of a wide variety of industrial products for subsequent treatment. This product family includes a complete line of aqueous and semi-aqueous pre-treatment and cleaning products.

Functional Conversion Coatings Functional conversion coatings are applied to metals to enhance corrosion resistance and paint adhesion in a wide spectrum of industrial applications where heavy-duty usage and exposure to unfavorable environments are anticipated.

Hard-coated Films Hard-coated films are used for the membrane switch in touch screen applications and the emerging technology of formable circuitry for durable human-machine-interface materials.

Water Treatment *Fernox* is our water treatment product line used for the filtration, corrosion inhibition, and conditioning of water in residential and commercial boiler systems.

Graphic Solutions

Solid Sheet Printing Elements Solid sheet printing elements are digital and analog printing sheets, used in the flexographic printing and platemaking processes. Our extensive line of *Lux* flexographic plates are used in the commercial packaging letterpress newspaper and publication industries.

Liquid Imaging Products Liquid products are liquid photopolymers used to produce printing plates for transferring images onto commercial packaging. Our key products are *MWH photopolymer*, *MWB 50 photopolymer*, and *M Stamp 40 photopolymer*. We also offer products that are used in the production of liquid photopolymer plates such as substrate, coverfilms and detergents.

Energy Solutions

Offshore Fluids Production fluids are used to operate valves for the deep-water oil extraction and transportation process, and drilling fluids are used to operate valves for drilling rigs on the ocean floor. Production and drilling fluids are water-based hydraulic fluids used in subsea control systems.

Competitive Strengths of Element Solutions

We believe the following competitive strengths differentiate us from competitors and contribute to the ongoing success of both of our businesses:

- **Industry Leading Positions.** We strategically focus on acquiring and maintaining leading positions in niche sectors of high-growth markets by offering innovative products and high value-added services to our customers. We believe our scale and global reach in product development, marketing and formulation provides us with advantages over many competitors, allowing us to maintain strong market share positions and drive profitable growth. Our strong market positions contribute to our ability to attract new customers and successfully enter new end-markets.

- **Customer Driven Innovation and Partnerships.** We frequently work alongside our customers and other industry participants to develop new products and identify new market opportunities. We participate in a variety of dynamic end-markets where new unmet needs are always materializing. Our sales and technical service teams provide continuous insights that help ensure our research and development efforts are appropriately focused. Customer requirements can lead to improved or uniquely tailored formulations of existing product offerings or to the development of completely new products to satisfy previously unmet needs. Tailoring products for specific OEMs leads to long-term relationships and significant customer switching costs.
- **Comprehensive Offering of Critical Products.** We provide our customers with a comprehensive offering of products that meet many of their specialty chemical needs. In many cases, we offer a full suite of products with complementary capabilities that provide a complete functional solution to the customer. We believe the ability to provide a “end-to-end” product offering is a significant competitive advantage over many of our smaller and regional competitors. Additionally, we believe our businesses' breadth of touchpoints from circuit formation through circuit assembly is unique in the market and allows us for a broader dialogue with customers. We also believe that our existing product offerings provide many opportunities for growth in adjacent end-markets.
- **Stable Cash Flow and Low Capital Requirements.** Our businesses typically generate high margins and require low capital expenditures, which translate into high cash flow margins and returns on capital. Instead of large investments in physical assets to sustain business or grow, we dedicate our investments into our technological innovation or sales and services areas. Our business involves the formulation of a broad range of specialty chemicals created by blending raw materials and incorporating them into multi-step technological processes. This model allows us to conservatively manage our investments in fixed assets to both maintain and grow our businesses. We believe our existing fixed asset base is well-maintained and, accordingly, requires low capital expenditures.
- **Performance-Driven Culture and Board with Proven Track Record.** In order to continue to provide innovative products and highly specialized technical service to our customers, we place a premium on maintaining an expert and qualified employee base. We believe we have outstanding people who can deliver superior performance under the guidance and oversight of proven, experienced leadership. Our culture is performance-driven and decentralized. We empower our business teams and hold them accountable for their outcomes and business judgment. We measure people on financial results, safety, customer satisfaction and commitments, legal compliance, and environmental stewardship. We measure our performance against benchmarks and drive operational excellence through continuous improvement. Our experienced management team is complemented by an experienced Board, which includes individuals with proven track records of successfully acquiring and managing businesses. Our business segments are also led by executives that have extensive experience in their respective fields.

Business Strategies

We aim to build a best-in-class global formulator, marketer and distributor of specialty chemical products. Our primary measure of success is long-term intrinsic shareholder value creation, which we intend to achieve through profitable sales growth, disciplined cost management and prudent and efficient capital allocation. We seek to develop and engineer new products and processes, leverage our technology and global scale to enter new markets and optimally manage our existing portfolio of specialty chemical businesses. Our efforts are directed by the following key business strategies:

- **Expand our Core Businesses.** We believe that we can capitalize on our existing capabilities to further enhance our technical capabilities, sophisticated process know-how, solutions orientation, strong customer relationships and deep industry knowledge. Our prior acquisitions and organic investments have enhanced the growth of our business by extending the breadth of our product offering and expanding our international reach. We intend to further extend many of our product offerings through the development of new applications for our existing products or through synergistic combinations and to target geographies with attractive market fundamentals where our strengths in marketing, portfolio development, regulation and customer education can add value for our customers.
- **Focused Investment in Product Innovation.** We place a strong emphasis on innovation. New products are developed and created by drawing upon our significant intellectual property portfolio and technical expertise. Building on our core competencies in product innovation, applications development, and technical services, we intend to drive organic growth by reaching new high-growth markets and expanding upon our existing technologies to develop new products for existing and adjacent markets.
- **Leverage Customer Relationships.** We intend to continue to leverage our close customer relationships to execute our growth strategy by working directly with our customers to identify opportunities for new products. We also have strong collaborative relationships with OEMs who specify which specialty materials, chemistries, and technologies they need in their products. Working directly with our customers allows us to increase OEM qualification and specification of our products and identify opportunities to grow with our customers. Such close customer relationships also provide a solid barrier to entry for competition.

- **Focus on Human Capital.** The success of our business depends on our ability to continue to capitalize on our technical capabilities, unique process know-how, strong customer relationships and industry knowledge. The technical expertise and history of innovation demonstrated by our employees reflect the specialized and highly skilled nature of our research and development personnel. As such, we intend to focus on attracting, retaining and developing the best human capital across all levels of our organization, which is key to our ability to successfully operate and grow our business.
- **Targeted Acquisitions and Inorganic Growth.** Our founder and Executive Chairman, Martin E. Franklin, the other Board members and our executive leadership team have significant experience and expertise, and have been highly successful in acquiring, integrating, and growing businesses. In the future, we may pursue targeted and opportunistic acquisitions in our existing and adjacent end-markets that strengthen our current businesses, expand and diversify our product offerings, and enhance our growth and strategic position. We also expect to achieve commercial and distribution efficiencies by expanding into related categories that can be marketed through our existing distribution channels or provide us with new distribution channels for our existing products.

Customers

Our businesses have a diverse customer base and sell products either directly to end-user customers or through intermediaries, such as independent, third-party distributors and retailers. We also have collaborative relationships with many OEMs and industry partners, who specify our chemistries and technologies for use in their products or grant us development rights of their intellectual property. A significant portion of our sales are through such intermediaries.

We rely on independent representatives and distributors to distribute our products and to assist us with the marketing and sale of certain of our products. We believe that we are able to attract new customers successfully through our international reach, coupled with our local knowledge and on-the-ground presence, which enables us to meet the needs of our customers. We operate a relatively large number of small and medium-sized facilities located close to our customers throughout the world's major economic regions. This close proximity to our global customers' local sites enables access to all key growth markets and along with our efficient formulation process, allows for "just in time" supply chain management.

We believe that our business is not materially dependent upon any single customer, with no customer representing 10% or more of our consolidated net sales in 2018, 2017 or 2016.

Due to the relatively short cycle times in our business, our order backlog levels are minimal.

Selling & Marketing

We employ a customer-centric and highly-technical sales and marketing force worldwide. These professionals have technical expertise, local market knowledge and intimate customer relationships. Our local sales and marketing teams closely monitor their market trends and maintain active dialogue with our customers to assess and understand their constantly evolving challenges. We use this information from our local sales teams to anticipate future needs and respond rapidly to changing market conditions or technologies in order to deliver customized, value-added solutions to our customers, both locally and globally. This feedback loop is an important source of new product ideas and helps guide our capital allocation decisions and research and development initiatives.

Our methods for selling and marketing our proprietary products vary slightly by geographic region. In total, we generate business through the efforts of regional sales, technical and service personnel, as well as distributors. In addition to regional sales and service staff, we maintain a group of global personnel focused on coordinating sales projects and obtaining design specifications for complex projects involving multiple customers within the manufacturing supply chain.

Employees

In order to ensure that innovative products and highly technical service are provided to our customers, we place a premium on maintaining a highly specialized and qualified employee base. At December 31, 2018, we employed approximately 4,450 full-time employees, including approximately 1,900 research and development chemists, experienced technical service and technical sales personnel. Our full-time employees are based throughout the world, with approximately 80% employed outside of the United States.

In certain countries where we operate, our employees are also members of unions or are represented by works councils as required by law. We are required to consult and seek the consent or advice of these unions and/or works councils for any changes to our activities or employee benefits.

Our management believes that our relationships with our employees and collective bargaining unions are satisfactory.

Research and Development

Continued investment in research and development ensures that we remain ahead of emerging trends and that we deliver solutions to strengthen our strong positions in our market niches. Our research and development activities are also focused on developing products and improving formulations and processes that will drive growth or otherwise add value to both our core business operations and customers. We accelerate market introductions and increase the impact of our product offerings through collaboration with partners in the academic and commercial sectors (customers and value-chain partners) and by working with distributors and OEMs around the world. We plan to continue to make meaningful investments in a broad range of research and development efforts.

Our commitment to technological innovation and our extensive intellectual property portfolio enables us to develop differentiated products at the forefront of technological advances. Research resulting in new, proprietary formulations is performed principally in Germany, Great Britain, India, Japan, and the United States. During 2018, our research and development expenses totaled \$44.3 million. Substantially all research and development activity was performed internally.

Competitive Environment

Our markets, which are undergoing a consolidation phase, are highly competitive and subject to rapid changes in technology. Broadly speaking, our businesses compete in the specialty chemicals market. On a narrower scale, our businesses compete in markets for specialty chemicals for electronic applications, general metal and plastic finishing, offshore oil and gas exploration and production, and printing.

Our businesses compete primarily on the basis of quality, technology, performance, reliability, brand, reputation, range of products and services, and service and support. We maintain extensive support, technical and testing services for our customers, and are continuously developing new products. Further consolidation within our industry or other changes in the competitive environment, such as the recent creation of DowDupont Inc., as a result of the merger of E.I. du Pont de Nemours and Company and The Dow Chemical Company, could result in larger competitors that compete with us on several levels. In addition, some of our competitors may have greater financial, technical and marketing resources than we do and may be able to devote greater resources to promoting and selling certain products. We believe, however, that our combined abilities to manufacture, sell, service, and develop new products and applications, enable us to compete successfully. Some large competitors operate globally, as we do, but most operate only locally or regionally. We also face competition from many smaller companies that specialize in particular segments of the markets in which we compete.

The specific competitive environment of each of our segments is described below:

Electronics

Our Electronics segment provides a broad line of proprietary chemical compounds and supporting services, and broadly competes within the specialty chemicals industry. Although competition varies by end-market and geography, our most significant competitors are Atotech Inc., DowDupont Inc., Senju Metal Industry Co. and Uyemura International.

Industrial & Specialty

Our Industrial & Specialty segment provides a broad line of proprietary chemical compounds and supporting services, and broadly competes within the specialty chemicals industry. Although competition varies by end-market and geography, our most significant competitors are Atotech Inc., DowDupont Inc., BP p.l.c. and Flint Group.

Raw Materials and Sourcing of Products

Our businesses involve the formulation of a broad range of specialty chemicals which we create by blending raw materials and incorporating them into multi-step technological processes. Our operations depend upon obtaining adequate supplies of raw materials on a timely basis. We typically purchase our major raw materials on an as-needed basis from outside sources. The raw materials that are of greatest importance to our global operations are, in most cases, obtainable from multiple sources worldwide.

Patents, Trademarks and Proprietary Products

Our intellectual property and other proprietary rights are important to our business and are protected by a combination of patents, trade secrets, trademarks and other non-patent strategies. We seek intellectual property and other proprietary rights in major markets and other commercially-relevant jurisdictions worldwide. We implement confidentiality procedures and contractual exclusivity and seek other rights necessary to protect our intellectual property, proprietary formulations, processes and other product-related rights. We rely on confidentiality agreements and patent, trade secret, trademark and copyright law as well as judicial enforcement of all of the foregoing to protect our technologies, processes, product composition, formulations and other intellectual property rights. We also enter into invention or patent assignment agreements, when applicable, with our employees, consultants, contractors and other third-parties who may be engaged in discovery or development of intellectual property and other proprietary rights. Finally, we seek to include provisions in our material transfer agreements, license and development agreements and other agreements that provide for the transfer of intellectual property rights back to us to the greatest extent possible under the circumstances of any specific transaction and development project.

At December 31, 2018, we owned, had applications pending, or licensed the rights to approximately 2,200 domestic and foreign patents, which have remaining lives of varying duration. Although certain of these patents are important to our business, no specific group or groups of intellectual property rights are material. However, we have many proprietary products which are not covered by patents and which are responsible for a large component of our total sales. Further, we hold a number of domestic and foreign trade names and trademark registrations which we consider to be of value in identifying our products.

Government and Environmental Regulation

Our businesses develop, produce and market chemical products in a number of jurisdictions throughout the world and are subject to extensive federal, regional, national and local laws and regulations in each country in which we operate. These laws and regulations govern, among other things, the Company's manufacture, use, labeling, packaging, storage and distribution of chemicals and hazardous substances, which are subject to strict quality and regulatory standards. We are required to meet these strict standards which, in recent years, have become increasingly stringent. However, no portion of our business is subject to re-negotiation of profits or termination of material contracts or subcontracts at the election of the governments in the countries in which we operate.

We are subject to the FCPA, which prohibits U.S. persons, U.S. issuers and U.S. companies and their intermediaries from making direct or indirect improper payments to non-U.S. government officials for the purpose of obtaining or retaining business or securing an improper advantage. We are also subject to similar anti-bribery laws in the jurisdictions in which we operate, including the Bribery Act, which also prohibits commercial bribery, solicitation of bribery, and makes it a crime for certain commercial organizations to fail to prevent bribery. These laws are complex and far-reaching in nature and, as a result, we may be required in the future to alter one or more of our policies or practices to be in compliance with these laws or any changes in these laws or the interpretation thereof.

We maintain a Business Conduct and Ethics Policy and a Foreign Corrupt Practices Act/Anti-Corruption Policy, applicable to all our directors, officers and employees. In addition, our CEO and CFO are bound by the provisions of a Code of Ethics for Senior Financial Officers. The Business Conduct and Ethics Policy, the Foreign Corrupt Practices Act/Anti-Corruption Policy and the Code of Ethics for Senior Financial Officers were approved by our Board and cover compliance with the FCPA and similar anti-corruption laws, as well as other legal areas applicable to our operations.

Our businesses and their customers also may be subject to significant requirements under the European Community Regulation (EC) No 1907/2006 of the European Parliament and the Council dated December 18, 2006 relating to the Registration, Evaluation, Authorization and Restriction of Chemicals, effective June 1, 2007 (or REACH). REACH, adopted in December 2006, imposes obligations on E.U. manufacturers and importers of chemicals and other products into the E.U. to compile and file comprehensive reports, including testing data, on each chemical substance, and perform chemical safety assessments. While we have registered and continue to register substances as required, the registration process is lengthy and registration of certain of our substances may not be immediately effective. The cost estimates could vary based on the number of substances requiring registration, data availability and cost. The implementation of the REACH registration process may affect our ability to manufacture and sell certain products in the future.

This highly-regulated environment represents both a challenge (cost, time, risk of failure or non-compliance) and an opportunity (to be more efficient and effective through innovation of compliant and more sustainable solutions than our competitors). In recent years, there has been a significant increase in the stringency of environmental regulation and enforcement of environmental standards, and the costs of compliance have risen significantly. We expect that the trend of increased regulation will continue in the future. In response to this increased government attention to environmental matters worldwide, we continue to develop proprietary products designed to reduce the discharge of pollutant materials into the environment and eliminate the use of certain

targeted raw materials while enhancing the efficiency of customer chemical processes. In addition, while regulation substantially increases the time and cost associated with bringing our products to market, we believe that our management team's significant experience in bringing our and other companies' technologies through regional, national and local regulatory approval processes, our efficient development process, and our ability to leverage our strategic collaborations to assist with registrations, particularly in Europe and Latin America, will enable us to overcome these challenges. We have and may in the future incur significant costs, including cleanup costs, fines and sanctions and third-party claims for property or natural resource damage or personal injuries as a result of past or future violations of, or liabilities under, such laws and regulations. At December 31, 2018, we believe we had appropriate liabilities recorded for our various environmental matters.

Available Information

Our internet website address is www.elementsolutionsinc.com. We make available free of charge, through our website, our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, all amendments to those reports filed pursuant to Section 13(a) or 15(d) of the Exchange Act and proxy statements for our annual meeting of stockholders, as soon as reasonably practicable after each such material is electronically filed with or furnished to the SEC. In addition, information concerning purchases and sales of our equity securities by our executive officers and directors is posted on our website by the end of the business day after filing with the SEC.

The SEC maintains an internet site at www.sec.gov that contains reports, proxy and information statements, and other information regarding issuers, including Element Solutions.

Our website includes the following corporate governance materials under the tab "Investors —Corporate Governance:" Board of Directors Governance Principles and Code of Conduct; Insider Trading Policy; Stock Ownership Guidelines; Business Conduct and Ethics Policy - Employees/Directors; Business Conduct and Ethics Policy - Contractors/Consultants; Code of Ethics for Senior Financial Officers; Foreign Corrupt Practices Act/Anti-Corruption Policy; Conflict Minerals Policy and the related Conflict Minerals Report; Management, Board of Directors and Committee Composition; and the charters of each committee of our Board of Directors. These corporate governance materials are also available in print upon request by any stockholder to our Investor Relations department.

The information included on our website does not constitute part of this 2018 Annual Report.

In addition to the information included in this Part I, Item 1, see Part II, Item 7, *Management's Discussion and Analysis of Financial Condition and Results of Operations*, and Part II, Item 8, as well as Note 1, *Background and Basis of Presentation*, and Note 23, *Segment Information*, to the Consolidated Financial Statements, all included in this 2018 Annual Report, for financial and other information concerning our operating segments and the geographic areas in which we do business.

Corporate Information

Our principal executive offices are located at 1450 Centrepark Boulevard, Suite 210, West Palm Beach, Florida 33401 and our telephone number is (561) 207-9600.

Item 1A. Risk Factors

The ownership of our securities involves a number of risks and uncertainties. Potential investors should carefully consider the risks and uncertainties described below and the other information in this 2018 Annual Report before deciding whether to invest in our Company. Our business, financial condition or results of operations could be materially adversely affected by any of these risks. The risks described below are not the only ones facing us or our operating businesses. Additional risks that are currently unknown to us or that we currently consider to be immaterial may also impair our business or adversely affect our financial condition or results of operations.

Risks Related to our Business

New Identity and Corporate Structure

We may be unable to achieve some or all of the expected benefits from the Arysta Sale, which may adversely affect our business, financial condition, results of operations and trading price.

On January 31, 2019, we completed the Arysta Sale. We may not be able to achieve the full strategic and financial benefits expected to result from the separation, or such benefits may be delayed or not occur at all for a variety of reasons, including that following the Arysta Sale, we are a smaller and less diversified company with a narrower business focus. As a result, we are more vulnerable to changing market conditions. If we fail to achieve some or all of the benefits expected to result from the Arysta Sale, or if such benefits are delayed, our business, financial condition, results of operations and/or trading price may be adversely impacted.

In addition, in connection with the Arysta Sale, we agreed to retain certain liabilities, as described under Note 5. *Discontinued Operations*, to the Consolidated Financial Statements included in this 2018 Annual Report. We cannot predict with certainty the ultimate resolution of these matters which involve judgments that are inherently subjective, and there can be no assurance that such resolution, which may take several years, will not adversely impact our financial position or results of operations.

Upon closing of the Arysta Sale, we initiated a reorganization of our corporate structure, which could negatively impact our performance.

Upon the closing of the Arysta Sale, we initiated the implementation of a corporate reorganization that is intended to reduce operating costs by combining certain of our corporate functions with those of our former Performance Solutions segment. This reorganization could disrupt our operations and cause the loss of key personnel. We cannot guarantee that this new company structure will succeed or that we will be effective in executing the reorganization. Further, even if the reorganization is successful, we cannot guarantee that the new company structure will generate the cost savings and efficiencies that we anticipate. Failure to implement the reorganization or the new company structure successfully, on a timely basis, or at all, or failure to realize all, or any, of their intended benefits, may materially adversely affect our business, financial condition or results of operations.

Operations, Markets and Competition

We may be unable to compete successfully in the highly competitive markets in which we operate and, as a result, we may suffer pricing pressure and reduced margins, or our products may be unable to achieve market acceptance.

The industries in which we operate are highly competitive, have experienced ongoing consolidation among major specialty chemicals companies and are driven by consumer preferences that are rapidly changing as well as frequent new product introductions and improvements. We also encounter competition from numerous and varied competitors in all areas of our business. Many of our competitors have longer operating histories, significantly greater resources, greater brand recognition, and a larger base of customers than we do. As a result, we may lose business if we are unable to devote greater resources to the research and development, manufacturing, formulation, promotion, sale or support of our products, withstand adverse changes in economic conditions within the relevant industry or the prices of raw materials, and/or maintain competitive pricing. In addition, our competitors could enter into exclusive arrangements with our existing or potential customers or suppliers, which could limit our ability to acquire necessary raw materials or to generate sales and/or significantly increase costs.

Our operating results are also influenced in part by our ability to introduce new products and services that offer distinct value to our customers, particularly prior to our competitors' ability to introduce equivalent products. We seek to provide tailored products for our customers' often unique problems, which require an ongoing level of innovation. Even where we devote significant human and financial resources to develop new technologically advanced products and services, we may not be successful in these efforts. If we are not able to continue technological innovation and successful commercial introduction of new products, our customers may turn to other producers to meet their requirements. Furthermore, if our competitors are able to introduce equivalent products

before we are able to bring new products to market, we may lose market share to our competitors. Any of these factors may impact our business, financial condition, or results of operations. In addition, if we are unable to adapt to changes in market needs, our future ability to penetrate markets and sustain our market position could be adversely affected.

If we don't successfully execute our go-to-market strategy and continue to develop, manufacture and market innovative products and services, our business and financial performance may suffer.

Our go-to-market strategy is focused on leveraging our existing portfolio of products and services, as well as introducing new products and services, to meet the demands of a continually changing technological landscape. To successfully execute this strategy, we must emphasize the aspects of our core business where demand remains strong, identify and capitalize on organic growth, and innovate and develop new products and services that will enable us to expand beyond our existing technology categories. Any failure to successfully execute this strategy, including any failure to invest sufficiently in strategic growth areas, could adversely affect our business, results of operations and financial condition.

The process of developing new high-technology products and services and enhancing existing products and services is complex, costly and uncertain, and our inability to anticipate customers' changing needs and emerging technological trends accurately could significantly harm our market share, results of operations and financial condition. We must make long-term investments, develop or acquire and appropriately protect intellectual property, and commit significant research and development and other resources before knowing whether our predictions will accurately reflect customer demand for our products and services. Any failure to accurately predict technological and business trends, control research and development costs or execute our innovation strategy could harm our business and financial performance. Our research and development initiatives may not be successful in whole or in part, including research and development projects which we have prioritized with respect to funding and/or personnel.

Our industry is subject to rapid and substantial innovation and technological change. Even if we successfully develop new products and technologies, future products and technologies may eventually supplant ours if we are unable to keep pace with technological advances, and end-user requirements and preferences. We may also be unable to timely enhance our existing products and technologies or develop new ones. In addition, our competitors may create products that replace ours. As a result, any of our products and technologies may be rendered obsolete or uneconomical. After we develop a product, we must be able to manufacture appropriate volumes quickly while also managing costs and preserving margins. To accomplish this, we must accurately forecast volumes, mixes of products and configurations that meet customer requirements, and we may not succeed at doing so within a given product's lifecycle or at all. Any delay in the development, production or marketing of a new product, service or solution could result in us not being among the first to market, which could further harm our competitive position.

If we acquire, combine with or divest other businesses, we will face certain risks inherent in such transactions.

We have in the past completed several acquisitions and dispositions, and will continue, from time to time, to consider opportunistic strategic transactions, which could involve acquisitions, combinations or dispositions of businesses or assets. Any such strategic combination could be material, be difficult to implement and/or disrupt our business. In addition, these transactions could involve certain risks, including:

- potential disruption of our ongoing business and distraction of management;
- difficulty integrating the acquired businesses or separating businesses to be disposed of;
- exposure to unknown and/or contingent or other liabilities, including litigation arising in connection with any acquisition and/or disposition;
- potential tax costs or inefficiencies, inconsistencies or deficiencies in standards, controls (including internal control over financial reporting, environmental compliance and health and safety compliance), information technology systems, procedures and policies;
- difficulties in assimilating and retaining key employees, customers, suppliers and other partners of the acquired companies;
- challenges related to the lack of experience in operating in the geographical or product markets of the acquired business; and
- reputational or other damages to our business as a result of a failure to consummate such a transaction for, among other reasons, failure to gain anti-trust approval.

If we enter into significant strategic transactions in the future, related accounting charges may affect our financial condition and results of operations, particularly in the case of any acquisitions. In addition, the financing of any significant acquisition may result in changes in our capital structure, including the incurrence of additional indebtedness. Conversely, any material disposition could reduce our indebtedness or require the amendment or refinancing of our outstanding indebtedness or a portion thereof. We may not be successful in addressing these risks or any other problems encountered in connection with any strategic transactions.

There can be no assurance that any future acquisitions or dispositions we make or any business combination we enter into will be completed in a timely manner, or at all, that they will be structured or financed in a way that will enhance our creditworthiness or that they will meet our strategic objectives or otherwise be successful. We also may not be successful in implementing appropriate operational, financial and management systems and controls to achieve the benefits expected to result from these transactions. Finally, future business acquisitions, divestiture or other material strategic initiatives could compound the difficulty in making comparisons between prior, current and future periods because these events, which are not made in ordinary course of business, also affect our gross profit margins and our overall operating results. Failure to effectively manage any of these transactions could result in material increases in costs or reductions in expected revenues, or both. In addition, if any new acquired business does not progress as planned, we may not recover the funds and resources we have expended and this could have a negative impact on our businesses or our company as a whole.

Industry and consumer trends may cause significant fluctuations in our results of operations and have a material adverse effect on our financial condition.

The specialty chemical industry in general, and the printing industry in particular, are cyclical and subject to constant and rapid technological change, product obsolescence, price erosion, evolving standards, short product lifecycles, raw material price fluctuations, and changes in product supply and demand. For example, demand for our products and services in the automotive industry may be affected by technological advances, changing automotive OEM specifications and other factors we cannot control. In addition, our specialty chemicals are used for a broad range of applications by our customers. Changes, including technological changes, in our customers' products or processes may make our specialty chemicals unnecessary. Customers also have found, and may continue to find, alternative materials or processes which no longer require our products. Finally, the specialty chemical industry is currently being affected by globalization and a shift in customers' businesses while the printing industry is currently shrinking. All these factors, consumer trends and industry characteristics may impact the demand for our products which may cause significant fluctuations in our results of operations and adversely affect our financial condition.

The failure to attract and retain key personnel, including our executive officers, or effectively manage succession, could have an adverse impact on our business, financial condition or results of operations.

Our business involves complex operations and therefore demands a leadership team and employee workforce that is knowledgeable and expert in many areas necessary for our operations. The failure to attract and retain key personnel, or effectively manage succession, could have an adverse material impact on our result of operations. In addition, we are highly dependent on the experience and track records of Martin E. Franklin, the other Board members and our executive leadership team. If one or more of our executive officers were to cease to be employed by us, or if we were unable to replace them in a timely manner, our business, financial condition or results of operations could be adversely affected.

In addition, as a company focused on manufacturing and highly technical customer service, we rely on our ability to attract and retain skilled employees, including our specialized research and development, and sales and service personnel, in order to maintain our efficient production processes, drive innovation in our product offerings and maintain our deep customer relationships. The departure of a significant number of our highly skilled employees, or of one or more employees who hold key management positions, could have an adverse impact on our operations, including customers choosing to follow an employee or manager to one of our competitors.

Volatility and increases in the price of raw materials, energy and transportation could harm our profits.

We use a variety of specialty and commodity chemicals in our formulation processes, and such formulation operations depend upon obtaining adequate supplies of raw materials on a timely basis. We typically purchase our major raw materials on a contract or as needed basis from outside sources. The availability and prices of raw materials may be subject to curtailment or change due to, among other things, the financial stability of our suppliers, new laws or regulations, protectionist nationalistic trade policies and practices, changes in exchange rates and worldwide price levels. In some cases, we are limited in our ability to purchase certain raw materials from other suppliers by our supply agreements which contain certain minimum purchase requirements. An inability to obtain major raw materials could adversely impact our ability to produce products.

Similarly, commodities and energy prices are subject to volatility caused by market fluctuations, supply and demand, currency fluctuations, production and transportation disruptions, and other world events. As we source many of our raw materials globally to help ensure quality control, if the cost of energy, shipping or transportation increases and we are unable to pass along those costs to our customers, our profit margins would be adversely impacted. Furthermore, increasing our prices to our customers could result in long-term sales declines or loss of market share if our customers find alternative suppliers or choose to reformulate their consumer products to use fewer ingredients, which could have an adverse long-term impact on our results of operations.

Our reliance on certain key customers, contract manufacturers, suppliers or independent distributors could adversely affect our overall sales and profitability.

Although we believe our business is not materially dependent upon any single customer, we rely on certain key customers, the loss of which may impair our results of operations for the affected earnings periods. The principal products purchased by such customers are surface finishing chemicals and solid sheet printing elements. In addition, there is limited available manufacturing capacity that meets our quality standards and regulatory requirements. If we are unable to arrange for sufficient production capacity among our contract manufacturers or suppliers, or if our contract manufacturers or suppliers encounter production, quality, financial, or other difficulties (including labor or geopolitical disturbances), we may encounter difficulty in meeting customer demands. In addition, we rely on independent distributors to distribute our products and to assist us with the marketing and sale of certain of our products, locally and globally. There can be no assurance that our distributors will focus adequate resources on selling our products to end users, or will be successful in selling our products, which could materially adversely affect our business and results of operations.

Intellectual Property and Information Security

If we are unable to protect our intellectual property rights, our business, financial condition or results of operations could be adversely affected.

Our success depends to a significant degree upon our ability to protect and preserve our intellectual property rights and the rights to our proprietary processes, methods, compounds and other technology. Failure to protect our existing intellectual property rights may result in the loss of valuable technologies and our competitors offering similar products, potentially resulting in the loss of one or more competitive advances and decreased sales. In addition, the laws of other countries may not protect our intellectual property rights to the same extent as the laws of the United States.

In some cases, we rely upon unpatented proprietary manufacturing expertise, continuing technological innovation and other trade secrets to develop and maintain our competitive position. While we generally enter into confidentiality agreements with our employees and third-parties to protect our intellectual property, our confidentiality agreements could be breached and may not provide meaningful protection for or adequate remedies to protect our trade secrets or proprietary manufacturing expertise in the event of unauthorized use or disclosure of information.

Despite efforts to protect our intellectual property rights, third parties may attempt to access, divert or use our intellectual property without authorization. Protecting against the unauthorized use of our products, technology and other proprietary rights is difficult, time-consuming and expensive, and we cannot be certain that the steps that we are taking will prevent or minimize the risks of such unauthorized use. In addition, our intellectual property strategy must continually evolve to protect our proprietary rights in new solutions. Litigation may be necessary to enforce our intellectual property rights or to determine the validity and scope of the proprietary rights of others. Litigation of this type could also result in substantial costs and diversion of resources and could significantly harm our results of operations and reputation.

We may incur significant costs in response to claims by others that our products infringe their intellectual property rights, which may cause us to incur unexpected costs or prevent us from selling our products.

From time to time, third parties may assert claims or initiate litigation or other proceedings related to patent, copyright, trademark and other intellectual property rights to technologies and related standards that are relevant to our business. Many of our competitors have a substantial amount of intellectual property that we must continually monitor to avoid infringement. From time to time, we also oppose patent applications that we consider overbroad or otherwise invalid in order to maintain the ability to operate freely in our various business lines without the risk of being sued for patent infringement. We could be adversely affected by litigation, other proceedings or claims against us, as well as claims against our manufacturers, suppliers or customers, alleging infringement of third-party proprietary rights by our products and technology, or components thereof. Regardless of the merit of these claims, they can be time-consuming, divert the time and attention of our management and technical personnel, and result in costly litigation. These claims, if successful, could require us to:

- pay substantial damages or royalties;
- comply with an injunction or other court order that could prevent us from offering certain of our products;
- seek a license for the use of certain intellectual property, which may not be available on commercially reasonable terms or at all;
- develop non-infringing technology, which could require significant effort and expense and ultimately may not be successful; and

- indemnify our customer and other third parties pursuant to contractual obligations to hold them harmless or pay expenses or damages on their behalf.

Any of these events could adversely affect our business, results of operations or financial condition. Our exposure to risks associated with the use of intellectual property may increase as a result of acquisitions, as we would have a lower level of visibility into the development process with respect to such technology and the steps taken to safeguard against the risks of infringing the rights of third parties.

If we experience a significant disruption in our information technology systems or if we fail to implement new systems and software successfully, our business operations could be adversely affected.

We depend on information technology systems throughout the Company to control our manufacturing processes, process orders, manage inventory, process and bill shipments to and collect cash from our customers. We also depend on these systems to respond to customer inquiries, contribute to our overall internal control processes, maintain records of our property, plant and equipment and record and pay amounts due to vendors and other creditors. As we upgrade or change systems, we may suffer interruptions in service, loss of data or reduced functionality and other problems could arise that we have not foreseen. Such problems could adversely impact our ability to provide quotes, take customer orders and otherwise run our business in a timely manner. In addition, if our new systems fail to provide accurate and increased visibility into pricing and cost structures, it may be difficult to improve or maximize our profit margins. As a result, our results of operations could be adversely affected.

Our business operations and internal control processes could also be disrupted if our information technology systems fail to perform adequately. The efficient operation of our business depends on our information technology systems, some of which are managed by third-party service providers. The failure of our information technology systems to perform as we anticipate could disrupt our business and could result in transaction errors, processing inefficiencies, and the loss of sales and customers, causing our business, financial condition and results of operations to suffer.

Changes in data privacy and data protection laws and regulations, or any failure to comply with such laws and regulations, could adversely impact our business.

Our business is subject to a wide variety of laws and regulations in the U.S. and internationally designed to protect the privacy of clients, customers, employees and other third parties. The interpretation and application of such laws and regulations is uncertain and evolving and it is possible that these laws may be interpreted and applied in a manner that is inconsistent with our data practices. For example, the E.U. General Data Protection Regulation, or GDPR, which went into effect in May 2018, applies to the collection, use, retention, security, processing, and transfer of personally identifiable information of residents of E.U. countries. The GDPR created a range of new compliance obligations, and imposes significant fines and sanctions for violations. It is possible that the GDPR may be interpreted or applied in a manner that is adverse to us, unforeseen by us, or otherwise inconsistent with our practices; or that we may otherwise fail to construe its requirements in ways that are satisfactory to the E.U. authorities.

Any failure, or perceived failure, by us to comply with the GDPR, or with any applicable regulatory requirements or orders, including but not limited to privacy, data protection, information security, or consumer protection-related privacy laws and regulations, in one or more jurisdictions within the E.U. or elsewhere, could result in proceedings or actions against us by governmental entities or individuals; subject us to significant fines, penalties, and/or judgments; require us to change our business practices; limit access to our products and services in certain countries, or otherwise adversely affect our business, as we would be at risk to lose both customers and revenue, and incur substantial costs.

The risk of loss of our intellectual property, trade secrets or other sensitive business or customer confidential information or disruption of operations due to breaches of cybersecurity could negatively impact our financial results.

Cyber-attacks or security breaches could compromise confidential, business critical information, cause a disruption in our operations or harm our reputation. We have important assets, including intellectual property, trade secrets and other sensitive, business critical and/or confidential information. A significant cyber-attack could result in the loss of critical business or confidential information and/or could negatively impact operations, which could have a negative impact on our financial results.

Despite our efforts to protect sensitive information and comply with and implement data security measures, there can be no assurance that any controls and procedures that we have in place will be sufficient to protect us from future security breaches. As cyber threats are continually evolving, our controls and procedures may become inadequate and we may be required to devote additional resources to modifying or enhancing our systems in the future. We may also be required to expend resources to remediate cyber-related incidents or to enhance and strengthen our cyber security. Any such disruptions to our information

technology systems, breaches or compromises of data, and/or misappropriation of information could result in lost sales, negative publicity, litigation, violation of privacy and other laws, or business delays that could have a material adverse effect on our business.

Global Operations and Regulations

Our substantial international operations subject us to risks not faced by domestic competitors.

Our products are manufactured and formulated, distributed or sold globally. The risks inherent in international trade may reduce our international sales and harm our business, including the following:

- fluctuations in currency values and foreign currency exchange rates;
- changes in tariff regulations;
- political instability, war, terrorism and other political risks;
- additional withholding taxes or other taxes on foreign income;
- foreign exchange controls or other currency restrictions and limitation on the movement of funds, including the prohibition of the repatriation of funds into the United States;
- establishing and maintaining relationships with local distributors and OEMs;
- the effects of current U.S.-China relations, including rounds of tariff increases and retaliations and increasing restrictive regulations and potential boycotts;
- instability in European countries and negative impact on the global economy as a result of the United Kingdom's formal trigger of the process for its exit from the E.U., and related negotiations;
- import and export control and licensing requirements;
- business cultures accepting of various levels of corruption;
- compliance with a variety of U.S. laws, including the FCPA and the Bribery Act, by us or our employees, suppliers, distributors and wholesalers;
- compliance with a variety of foreign laws and regulations, including unexpected changes in taxation and regulatory requirements;
- greater difficulty in safeguarding intellectual property than in the U.S.;
- difficulty in staffing and managing geographically diverse operations; and
- challenges in maintaining an effective internal control environment, including language and cultural differences, varying levels of GAAP expertise and internal control over financial reporting.

Any of these risks could impact our ability to manufacture, source, sell or export our products or repatriate profits. We could also experience a loss of sales and profitability from our international operations, and/or a substantial impairment or loss of assets, any of which could have a material adverse impact on our business, financial condition or results of operations.

The withdrawal of the United Kingdom from the E.U. may have a negative effect on global economic conditions, financial markets and our business.

In June 2016, the United Kingdom held a referendum in which voters approved an exit from the E.U., commonly referred to as "Brexit," and in March 2017, notified the E.U. that it intended to exit as provided in Article 50 of the Treaty on European Union. The terms of the withdrawal are subject to ongoing negotiation that has created significant uncertainty about the future relationship between the United Kingdom and the E.U. It is possible that the level of economic activity in this region will be adversely impacted and that there will be increased regulatory and legal complexities, including those relating to tax, trade, security and employees. The measures could potentially disrupt some of our target markets and jurisdictions in which we operate, and adversely change tax benefits or liabilities in these or other jurisdictions. In addition, Brexit could lead to economic uncertainty, including significant volatility in global stock markets and currency exchange rates, and cause our customers and potential customers to monitor their costs and reduce their budgets for either our products or other products that incorporate our products. Any of these effects of Brexit, among others, could adversely affect our business, business opportunities, results of operations and financial condition.

Our net sales and gross profit have varied depending on our product, customer and geographic mix for any given period, which makes it difficult to forecast future operating results.

Our net sales and gross profit vary among our products, customers and markets, and therefore may be different in future periods from historic or current periods. Overall gross profit margins in any given period are dependent in large part on the product, customer and geographic mix reflected in that period's net sales. Market trends, competitive pressures, commoditization of products, increased component or shipping costs, regulatory conditions and other factors may also result in reductions in revenue or pressure on the gross profit margins in a given period. The varying nature of our product, customer and geographic mix between periods has materially impacted our net sales and gross profit between periods during certain recessionary times and may lead to difficulties in measuring the potential impact of market, regulatory and other factors on our business. As a result, we may be challenged in our ability to forecast our future operating results.

We are subject to changes in legislative, regulatory and legal developments involving taxes which could adversely affect our business and financial condition.

We are subject to U.S. federal and state, and other countries' and jurisdictions', income, payroll, property, sales and use, and other types of taxes. Changes in tax rates, enactment of new tax laws, revisions of tax regulations, and claims or litigation with taxing authorities may require significant judgment in determining the appropriate provision and related accruals for these taxes; and as a result, such changes could result in substantially higher taxes and, therefore, could have a significant adverse effect on our results or operations, financial conditions and liquidity.

Currently, a significant amount of our net sales are generated from customers located outside of the United States, and a large portion of our assets and employees are located outside of the United States. The United States, the E.U. and member states along with numerous other countries are currently engaged in establishing fundamental changes to tax laws affecting the taxation of multinational corporations. On December 22, 2017, the U.S. government enacted the TCJA which significantly reformed the Internal Revenue Code of 1986, as amended, including reduction of the corporate tax rate from a top marginal rate of 35% to a flat rate of 21%, limitation of the tax deduction for interest expense to 30% of adjusted earnings, limitation of the deduction for net operating losses to 80% of current year taxable income and elimination of net operating loss carrybacks, one time taxation of offshore earnings at reduced rates regardless of whether they are repatriated, new taxes on certain foreign-sourced earnings, immediate deductions for certain new investments instead of deductions for depreciation expense over time, and modification or repeal of many business deductions and credits. The TCJA is complex and subject to interpretation, and we continue to examine the impact this tax reform legislation may have on our business. The presentation of our financial condition and results of operations is based upon our current interpretation of the provisions contained in the TCJA. However, we expect to continue to see future regulations relating to, and interpretive guidance of, the legislation contained in the TCJA. The full extent of the impact remains uncertain at this time, and our current interpretations of, and assumptions regarding, the TCJA are subject to additional regulatory or administrative developments, including any future regulations or other guidance promulgated by the Internal Revenue Service. Any significant variance of our current interpretation of such legislation from any future regulations or interpretive guidance could adversely affect our financial position, income tax provision, net income or cash flows.

In addition, we are subject to the continual examination of our income tax returns by the Internal Revenue Service and foreign tax authorities in the countries and jurisdictions in which we operate and we may be subject to assessments or audits in the future. Although we believe our tax estimates are reasonable, the final determination of tax audits and any related litigation could be materially different from that which is reflected in our historical financial statements. An audit or litigation can result in significant additional income taxes payable in the jurisdictions in which we operate which could have an adverse impact on our financial condition and results of operations.

Chemical manufacturing is inherently hazardous and may result in accidents, which may disrupt our operations or expose us to significant losses or liabilities.

The hazards associated with chemical manufacturing and the related storage and transportation of raw materials, products and wastes are inherent in our operations as our research and development, manufacturing, formulating and packaging activities involve the use of hazardous materials and the generation of hazardous waste. We cannot eliminate the risk of accidental contamination, discharge or injury resulting from those materials. Also, our suppliers or contract manufacturers may use and/or generate hazardous materials in connection with producing our products. We may be required to indemnify our suppliers, contract manufacturers 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 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. We are dependent on the continued operation of our production facilities (including third-party manufacturing on a tolling basis), and the loss or shutdown of operations over an extended period could have a material adverse effect on our financial condition or results of operations.

Our operations currently use, and have historically used, hazardous materials and generate, and have historically generated, quantities of hazardous waste. For example, we are subject to regulatory oversight and investigation, remediation, and monitoring obligations at our current and former Superfund sites, as well as third-party disposal sites, under federal laws and their state and local analogues, including the Resource Conservation and Recovery Act (RCRA), the Clean Water Act, the Clean Air Act, and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as well as analogous foreign laws. In particular, we are subject to ongoing obligations at active sites in the United States and are conducting closure activities pursuant to the RCRA at several sites in the United States. The costs and liabilities associated with these issues may be substantial and may materially impact the financial health of our company.

We may incur material costs relating to environmental and health and safety requirements or liabilities, which could have a negative impact on our financial condition or results of operations.

We are subject to extensive federal, state, local and foreign environmental, health and safety laws and regulations concerning the environment and the generation, use, handling, storage, transportation, treatment and disposal of hazardous waste and other materials. Our operations bear the risk of violations of those laws and sanctions for violations such as clean-up and removal costs, long-term monitoring and maintenance costs, costs of waste disposal, fines for natural resource damage, and payments for property damage and personal injury. 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. We have incurred, are incurring and will incur in the future, costs and capital expenditures in complying with environmental, health and safety laws and regulations. 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.

At any given time, we may be involved in claims, litigation, administrative proceedings, settlements and investigations of various types in a number of jurisdictions involving potential environmental liabilities. In particular, we are currently involved in various investigations due to historic operations. Liability under some environmental laws relating to contaminated sites can be joint and several and imposed retroactively, regardless of fault or the legality of the activities that gave rise to the contamination. Some of our formulating and manufacturing facilities have an extended history of chemical formulating and manufacturing operations or other industrial activities, and contaminants have been detected at some of our sites and offsite disposal locations. Ultimate environmental costs are difficult to predict and may vary from current estimates and liabilities. The discovery of additional contaminants, the inability or failure of other liable parties to satisfy their obligations, the imposition of additional cleanup obligations, or the commencement of related third-party claims could result in significant additional costs and negatively impact our financial condition or results of operations.

Our offshore oil industry products are subject to the hazards inherent in the offshore oil production and drilling industry, and we may incur substantial liabilities or losses as a result of these hazards.

We produce water-based hydraulic control fluids for major oil companies and drilling contractors to be used for potentially hazardous offshore deepwater production and drilling applications. Offshore deepwater oil production and drilling are subject to hazards that include blowouts, explosions, fires, collisions, capsizing, sinking and damage or loss to pipeline, subsea or other facilities from severe weather conditions. Those hazards could result in personal injury and loss of life, severe damage to or destruction of property and equipment, pollution or environmental damage and suspension of operations. A catastrophic occurrence at a location where our products are used may expose us to substantial liability for personal injury, wrongful death, product liability or commercial claims. To the extent available, we maintain insurance coverage that we believe is customary in our industry. Such insurance does not, however, provide coverage for all liabilities, and we cannot assure you that our insurance coverage will be adequate to cover claims that may arise or that we will be able to maintain adequate insurance at rates we consider reasonable. The occurrence of a significant offshore deepwater oil production or drilling event that results in liability to us that is not fully insured could have a material and adverse effect on our financial condition or results of operations.

Certain of our products may be subject to various export control regulations and exports may require a license from the U.S. Department of State or the U.S. Department of Commerce.

Companies must comply with various laws and regulations relating to the export of products, services, and technology. In the United States, these laws include, among others, the U.S. Export Administration Regulations (EAR) administered by the U.S. Department of Commerce's Bureau of Industry and Security and the International Traffic in Arms Regulations (ITAR), administered by the U.S. Department of State's Directorate of Defense Trade Controls. Some of our products or technology may have military or strategic applications governed by the ITAR or represent so-called "dual use" items governed by the EAR. As a result, these products may require government licenses to be exported to certain jurisdictions or persons. Any failure to comply with these laws and regulations could result in civil or criminal penalties, fines, investigations, adverse publicity and restrictions on our ability to export our products, which could result in a material adverse effect on our business, financial condition or results of operations.

Failure to comply with the FCPA and other similar anti-corruption laws could subject us to penalties and damage our reputation.

We are subject to the FCPA, which prohibits corporations and individuals from paying, offering to pay, or authorizing the payment of anything of value to any foreign government official, government staff member, political party, or political candidate in an attempt to obtain or retain business or to otherwise influence a person working in an official capacity. We are also subject to the Bribery Act, which prohibits both domestic and international bribery, as well as bribery across both public and private sectors. Under the FCPA, the Bribery Act, and many other anti-corruption laws, companies may also be held liable for actions taken by third-parties acting on their behalf, such as strategic or local partners or representatives. Certain anti-corruption laws, including the Bribery Act, also prohibit commercial bribery and the receipt of bribes, while others, such as the FCPA, require companies to maintain accurate books and records and adequate internal controls. Certain of the jurisdictions in which we conduct business are perceived to have a heightened risk for corruption, extortion, bribery, pay-offs, theft and other improper practices. Our businesses prohibit bribery and unethical conduct, but these policies may not prevent our employees or agents from violating these laws. Failure by us or our intermediaries to comply with applicable anti-corruption laws, governmental authorities in the United States or elsewhere, as applicable, may result in civil and/or criminal penalties against us, our officers or our employees, and prohibition on the conduct of our business, which could all damage our reputation and have a material adverse effect on our business, financial condition and results of operations.

Our products are subject to numerous, complex government regulations dealing with the production and sale of chemicals and compliance with these regulations could require us to incur additional costs or to reformulate or discontinue certain of our products.

We are subject to extensive federal, state, local and foreign customs regulations, imports and international trade laws, export control, antitrust laws, environmental and chemicals manufacturing, global climate change, health and safety requirements and zoning and occupancy laws that regulate manufacturers generally or govern the importation, promotion and sale of our products, the operation of factories and warehouse facilities and our relationship with our customers, suppliers and competitors. Our products and manufacturing processes are also subject to ongoing reviews by certain governmental authorities.

Numerous laws regulating the production and marketing of chemical substances apply to us. These regulations include, for example, the European Union REACH (Registration, Evaluation, Authorization, and Restriction of Chemicals) regulation, the REACH regulation's Substances of Very High Concern (SVHC) program and similar laws in other jurisdictions. These regulations may require us to re-design our products to ensure compliance with the applicable standards, for example by requiring the use of different types of materials, which could have an adverse impact on the performance of our products, add greater testing lead-times for product introductions or other similar effects, which could materially alter our marketplace position or otherwise have a material financial effect on our revenues. We also have several product lines that currently rely on lead-based solder and many others that historically did so. Legal claims have been brought alleging harmful exposures or contamination as a result of lead-based solder, and it is possible that we may face additional claims in the future.

In addition, pursuant to Section 1502 of the Dodd-Frank Wall Street Reform and Consumer Protection Act, the SEC has promulgated rules requiring disclosure regarding the use of certain "conflict minerals" that are mined from the Democratic Republic of Congo and adjoining countries and procedures regarding a manufacturer's efforts to prevent the sourcing of such minerals. Complying with these disclosure requirements involves substantial diligence efforts to determine the source of any conflict minerals used in our products and may require third-party auditing of our diligence process. These efforts may demand internal resources that would otherwise be directed towards operations activities. Since our supply chain is complex, we may face reputational challenges if we are unable to sufficiently verify the origins of the conflict minerals used in our products. Additionally, if we are unable to satisfy those customers who require that all of the components of our products are determined to be conflict free, they may choose a competitor's products which could materially impact our financial condition and operating results.

The requirements described above, and enforcement of those requirements, may become more stringent in the future. The ultimate cost of compliance with any such requirements could be material. Changes in environmental and climate laws or regulations could lead to new or additional investment in production designs and could increase environmental compliance expenditures, for us and our suppliers. Changes in climate change concerns, or in the regulation of such concerns, including greenhouse gas emissions, could subject us to additional costs and restrictions, including increased energy and raw materials costs. Additionally, there can be no assurance that we will not be required to expend significant funds to comply with, or discharge liabilities arising in the future under, environmental laws, regulations and permits, or that we will not be exposed to material environmental, health or safety litigation. Some of our formulating and manufacturing facilities have an extended history of chemical formulating and manufacturing operations or other industrial activities, and contaminants have been detected at some of our sites and offsite disposal locations. Ultimate environmental costs are difficult to predict and may vary from current estimates and liabilities. The discovery of additional contaminants, the inability or failure of other liable parties to satisfy their obligations, the imposition of additional cleanup obligations, or the commencement of related third-party claims could result in significant additional costs.

We may be unable to ensure compliance with international trade restrictions and economic sanctions laws and regulations, which could adversely affect our business, financial condition or results of operations.

We have operations, assets and/or make sales in countries all over the world, including countries that are or may become the target of the United States and other countries' trade restrictions, including economic sanctions, which we refer to collectively as "Economic Sanctions Laws." Economic Sanctions Laws are complex and change with time as international relationships and confrontations between and among nations evolve. For example, the U.S. Department of the Treasury's Office of Foreign Assets Control (OFAC) and the U.S. State Department administer certain laws and regulations that impose penalties upon U.S. persons and entities and, in some instances, non-U.S. entities, for conducting activities or transacting business with certain countries, governments, entities, or individuals subject to U.S. Economic Sanctions Laws. We do not unlawfully conduct business in any sanctioned countries but given the breadth of our international operations and the scope of our sales globally, including via third-party distributors over whom we may have limited or no control, coupled with the complexity and ever-changing nature of Economic Sanctions Laws, there can be no assurance that we have been in the past or will at all times in the future be in full compliance. If we fail to comply with Economic Sanctions Laws, investigations and/or actions could be taken against us that could materially and adversely affect our reputation or have a material and adverse effect on our business, financial condition or results of operations.

Risks Related to our Financial Results, Finances and Capital Structure

Financial Performance

If we fail to establish and maintain adequate internal controls over financial reporting, we may not be able to report our financial results in a timely and reliable manner, which could harm our business and impact the value of our securities.

We are required by the SEC to establish and maintain adequate internal control over financial reporting that provides reasonable assurance regarding the reliability of our financial reporting and the preparation of financial statements in accordance with GAAP. We are likewise required, on a quarterly basis, to evaluate the effectiveness of our internal controls and to disclose any material changes and material weaknesses in those internal controls. We have in the past experienced, and in the future may experience again, material weaknesses and potential problems in implementing and maintaining adequate internal controls as required by the SEC. If we fail to achieve and maintain the adequacy of our internal controls, we may not be able to ensure that we can conclude on an ongoing basis that we have effective internal controls over financial reporting. If we cannot provide reliable financial reports or prevent fraud, our business and operating results could be harmed, investors could lose confidence in our reported financial information, and the trading price of our common stock could drop significantly. Likewise, if our financial statements are not filed on a timely basis as required by the SEC and the NYSE, we could face severe consequences from those authorities, and our reputation could be harmed which in turn could affect the value of our securities.

Unfavorable currency exchange rate fluctuations could adversely affect our results of operations.

The reporting currency for our financial statements is the U.S. dollar. We have substantial assets, liabilities, revenues and costs denominated in currencies other than U.S. dollars. To prepare our Consolidated Financial Statements, we must translate those assets, liabilities, revenues and expenses into U.S. dollars at then-applicable exchange rates. Consequently, increases and decreases in the value of the U.S. dollar versus other currencies will affect the amount of these items in our Consolidated Financial Statements, even if their value has not changed in their original currency. These translations could result in significant changes to our results of operations from period to period. Although we may employ at times a variety of techniques to mitigate the impact of exchange rate fluctuations, including a limited number of foreign currency hedging activities, we cannot guarantee that such risk management strategies will be effective, and our financial condition or results of operations could be adversely impacted.

Changes in the method for determining LIBOR and/or the potential replacement of LIBOR could adversely affect our results of operations.

As a result of concerns about the accuracy of the calculation of LIBOR, a number of British Bankers' Association, or BBA, member banks entered into settlements with certain regulators and law enforcement agencies with respect to the alleged manipulation of LIBOR. Actions by the BBA, regulators or law enforcement agencies as a result of these or future events, may result in changes to the manner in which LIBOR is determined. Potential changes, or uncertainty related to such potential changes may adversely affect the market for LIBOR-based securities, including our borrowings under the New Credit Agreement. In addition, changes or reforms to the determination or supervision of LIBOR may result in a sudden or prolonged increase or decrease in reported LIBOR, which could have an adverse impact on the market for LIBOR-based borrowings.

In July 2017, the head of the United Kingdom Financial Conduct Authority announced the desire to phase out the use of LIBOR by the end of 2021. The U.S. Federal Reserve, in conjunction with the Alternative Reference Rates Committee, a steering committee comprised of large U.S. financial institutions, is considering replacing U.S.-dollar LIBOR with the Secured Overnight Financing Rate, or SOFR, a new index calculated by short-term repurchase agreements, backed by Treasury securities. Although there have been a few issuances utilizing SOFR or the Sterling Over Night Index Average, an alternative reference rate that is based on transactions, it is unknown whether these alternative reference rates will attain market acceptance as replacements for LIBOR. If LIBOR ceases to exist, we may need to renegotiate any borrowing under the New Credit Agreement extending beyond 2021 that utilize LIBOR as a factor in determining the interest rate. There is currently no definitive information regarding the future utilization of LIBOR or of any particular replacement rate. As such, the potential effect of any such event on our cost of capital and net investment income cannot yet be determined.

A change in our estimates and underlying assumptions regarding the future performance of our businesses could result in an impairment charge, which could materially affect our results of operations.

Our historical Acquisitions have resulted in significant goodwill and other intangible assets being recognized in our Consolidated Financial Statements. We are required under GAAP to review our amortizable intangible assets for impairment when events or changes in circumstances indicate the carrying value may not be recoverable, and are also required to conduct impairment tests on goodwill and other indefinite-lived intangible assets annually or more frequently, if circumstances indicate that the carrying value may not be recoverable or that an other-than-temporary impairment exists. Other than the goodwill impairments in the Energy Solutions reporting unit in 2016, there were no impairments of goodwill or other intangible assets in 2018, 2017 or 2016 relating to our continuing operations. In 2018, the fair value of the Energy Solutions reporting unit was not substantially in excess of its carrying value. Any changes in estimates or underlying assumptions regarding the future performance of our businesses could adversely affect our results of operations. Factors that could result in an impairment include, but are not limited to significant negative economic or industry trends or competitive operating conditions; significant macroeconomic conditions that may result in an increase in the weighted-average cost of capital used to estimate fair value; and significant changes in the nature and timing of decisions regarding assets or markets that do not perform consistently with our expectations, including factors we use to estimate future levels of sales, Adjusted EBITDA or cash flows. Future impairment charges, if any, could have a material adverse effect on our results of operations in the periods recognized.

Indebtedness

Our New Credit Agreement and other debt agreements contain restrictions that limit our flexibility in operating our business.

We are a party to the New Credit Agreement which provides for new senior secured credit facilities in an aggregate principal amount of \$1.08 billion, consisting of a revolving facility in an aggregate principal amount of \$330 million maturing in 2024 and a term loan in an aggregate principal amount of \$750 million maturing in 2026. On the closing date of the Arysta Sale, the \$750 million term loan was borrowed under the New Credit Agreement. The New Credit Agreement and other agreements governing our outstanding debt contain covenants that restrict, among other things, our ability to grant liens, pay cash dividends, enter new lines of business, repurchase our shares of common stock, make certain investments and engage in certain merger, consolidation or asset sale transactions. In addition, the New Credit Agreement and these agreements include customary remedies, including the right of the lenders to take action with respect to the collateral securing outstanding loans, that would apply should we default or otherwise be unable to satisfy our debt obligations. These covenants restrict our flexibility in operating our business. As a result, we may be unable to pursue certain business initiatives or certain transactions that might otherwise be advantageous, meet extraordinary capital needs, finance future operations, plan for or react to market conditions, or otherwise take actions that we believe are in the best interest of our business which, in turn, may adversely impact our business, financial condition or results of operations.

We and our subsidiaries may be able to incur significant indebtedness in the future, which would result in additional restrictions upon our business and impact our financial condition.

We and our subsidiaries may be able to incur significant indebtedness in the future. Although the New Credit Agreement and other agreements governing our outstanding debt contain restrictions on the incurrence of additional indebtedness, these restrictions are subject to a number of significant qualifications and exceptions, and any indebtedness incurred in compliance with these restrictions could be substantial. Any significant indebtedness incurred by us or our subsidiaries could have the following material consequences:

- require us to dedicate a substantial portion of our cash flow from operations to payments on our indebtedness, thereby reducing the availability of our cash flow to fund acquisitions, working capital, capital expenditures, dividends, research and development efforts and other general corporate purposes;
- increase the amount of our interest expense, because our borrowings include instruments with variable rates of interest, which, if interest rates increase, would result in higher interest expense;
- increase our vulnerability to general adverse economic and industry conditions;
- limit our flexibility in planning for, or reacting to, changes in our business and the industry in which we operate;
- limit our ability to make strategic acquisitions, introduce new technologies or exploit business opportunities;
- place us at a competitive disadvantage compared to our competitors that have less indebtedness; and
- limit, among other things, our ability to borrow additional funds.

We may also enter into additional debt transactions or credit facilities, including equipment loans, working capital lines of credit, senior notes and other long-term debt, which may increase our indebtedness and result in additional restrictions upon our business. In addition, major debt rating agencies regularly evaluate our debt based on a number of factors, including our degree of leverage. There can be no assurance that we will be able to maintain our existing debt ratings, and failure to do so could adversely affect our cost of funds, liquidity and access to capital markets.

Risks Related to Ownership of our Common Stock and Senior Notes

We have numerous equity instruments outstanding that could require us to issue additional shares of common stock. The future issuance of additional shares could result in significant dilution of ownership interests and have an adverse effect on our stock price.

We have a number of equity instruments outstanding that could require us to issue additional shares of our common stock. Depending on the equity instrument, these additional shares may either be issued for no additional consideration or based on a fixed amount of additional consideration. Specifically, at December 31, 2018, we had outstanding the following:

- 4,019,679 exchange rights which require us to issue shares of our common stock in exchange for shares of common stock of our subsidiary, PDH, on a one-for-one basis, at any time at the option of the holder;
- 2,000,000 shares of Series A Preferred Stock which are convertible into shares of our common stock, on a one-for-one basis, at any time at the option of the holder;
- 3,353,871 RSUs which were granted to employees under our 2013 Plan. Each RSU represents a contingent right to receive one share of our common stock;
- 536,772 options which are exercisable to purchase shares of our common stock, on a one-for-one basis, at any time at the option of the holder;
- \$100 million of contingent consideration agreed upon in connection with the MacDermid Acquisition which, at our option, may be paid in shares of our common stock.

We have 10,124,581 shares of our common stock currently available under the 2013 Plan, net of the outstanding RSUs and options noted above (subject to increase in accordance with the terms of such plan), and an additional 4,720,094 shares of our common stock currently available under the ESPP.

In addition, the holders of our Series A Preferred Stock are entitled to receive an annual dividend on their Series A Preferred Stock in the form of shares of our common stock. For 2018, no stock dividend was declared with respect to the Series A Preferred Stock. The dividend amount is calculated based on the appreciated stock price compared to the highest dividend price previously used in calculating the Series A Preferred Stock dividends, which is currently \$22.85. The issuance of common stock as stock dividends in the future could have a dilutive impact on, and reduce the value of, our outstanding common stock.

Volatility of our stock price could adversely affect our stockholders.

The market price of our common stock could fluctuate significantly as a result of:

- quarterly variations in our operating results;
- changes in net sales or earnings estimates or publication of research reports by analysts;
- operating and securities price performance of companies that investors deem comparable to us;
- speculation in the press or investment community;
- changes in laws and regulations affecting our businesses;
- announcements of strategic developments, including potential future acquisitions, divestitures, restructuring or other material events by us or our competitors;
- sales of substantial amounts of common stock by our directors, executive officers or significant stockholders or the perception that such sales could occur;
- adverse market reaction to any additional debt we incur in the future;
- the reaction of the investment community to our shares repurchases;
- actions by institutional stockholders;
- general economic and political events and/or conditions; and
- the risk factors set forth in this 2018 Annual Report and other matters discussed herein.

Fluctuations in the price of our common stock could contribute to the loss of all or part of a stockholder's investment in our Company. Many of the factors listed above are beyond our control. These factors may cause the market price of our common stock to decline, regardless of the financial condition, results of operations, business or prospects of us and our subsidiaries. Repurchases of our shares of common stock would also reduce the number of our outstanding shares and might incrementally increase the potential for volatility in our stock by reducing the potential volumes at which our shares may trade in the public markets. There can be no assurance that the market price of our common stock will not fall in the future.

Future sales, or the perception of future sales, of our common stock may depress the price of our common stock.

If any of our executive officers, directors or stockholders sells a large number of shares of our common stock, or if we issue a large number of shares of common stock in connection with future acquisitions, financings or other circumstances, the market price of our common stock could decline significantly. Moreover, the perception in the public market that we or our stockholders might sell shares of common stock could depress the market price of those shares.

We cannot predict the size of future issuances of our shares of common stock or the effect, if any, that future issuances or sales of our shares will have on the market price of such shares. Sales of substantial amounts of our shares, including sales by significant stockholders, and shares issued in connection with any pending or future acquisition, or the perception that such sales could occur, may adversely affect prevailing market prices for our shares of common stock. Possible sales also may make it more difficult for us to sell equity or equity-related securities in the future at a time and price we deem necessary or appropriate.

We may issue preferred stock in the future, and the terms of the preferred stock may reduce the value of our common stock.

Our Board is authorized to create and issue one or more additional series of preferred stock, and, with respect to each series, to determine the number of shares constituting the series and the designations and the powers, preferences and rights, and the qualifications, limitations and restrictions thereof, which may include dividend rights, conversion or exchange rights, voting rights, redemption rights and terms and liquidation preferences, without stockholder approval. If we create and issue one or more additional series of preferred stock, it could affect the rights of our common stockholders or reduce the value of our outstanding common stock. Our Board could, without stockholder approval, issue preferred stock with voting and other rights that could adversely affect the voting power of the holders of our common stock and which could have certain anti-takeover effects.

We have redeemed in the past, and may continue to redeem or repurchase, outstanding series of debt securities, which could impact the market for our senior notes and/or negatively affect our liquidity.

We may from time to time seek to repurchase, redeem or refinance our outstanding senior notes in open market purchases, accelerated repurchase programs, privately negotiated transactions, tender offers, partial or full calls for redemption or otherwise. Any such repurchases or redemptions and the timing and amount thereof would depend on prevailing market conditions, liquidity requirements, contractual restrictions and other factors. Depending on such timing and amount, our liquidity could be negatively affected.

Our principal source of operating cash is income received from our subsidiaries.

We do not have any material assets or operations other than ownership of equity interests of our subsidiaries. Our operations are conducted almost entirely through our subsidiaries, and our ability to generate cash to meet our obligations or to pay dividends is highly dependent on the earnings of, and receipt of funds from, our subsidiaries through dividends or intercompany loans, in particular from MacDermid, Incorporated. As a result, we are dependent on the income generated by our subsidiaries to meet our expenses and operating cash requirements. The amount of distributions and dividends, if any, which may be paid to us from each of our subsidiaries will depend on many factors, including the results of operations and financial condition, limits on dividends under applicable law, such subsidiary's constitutional documents, documents governing any indebtedness of such subsidiary, and other factors which may be outside our control. If our subsidiaries are unable to generate sufficient cash flow, we may be unable to pay our expenses.

We are governed by Delaware law, which has anti-takeover implications.

We are governed by Delaware law, the application of which may have the effect of deterring hostile takeover attempts or a change in control. In particular, Section 203 of the Delaware General Corporation Law imposes certain restrictions on merger, business combinations and other transactions between us and holders of 15% or more of our common stock. A Delaware corporation may opt out of that provision either with an express provision in its original certificate of incorporation or in an amendment to its certificate of incorporation or by-laws approved by its stockholders. We have not opted out of this provision. Section 203 could prohibit or delay mergers or other takeover or change in control attempts and, accordingly, may discourage attempts to acquire us, which may negatively affect our stock price.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

Our corporate offices are located in a leased facility in West Palm Beach, Florida. At December 31, 2018, our physical presence included 40 manufacturing sites, 9 of which include research facilities, and 9 stand-alone research centers. Of our manufacturing facilities, 7 are located in the United States with the remaining international facilities located primarily in Asia and Europe. We own 22 of our manufacturing facilities, 3 of our manufacturing facilities that include research facilities and 4 of our stand-alone research centers. In addition to the remaining manufacturing and research facilities, we lease the majority of our office, warehouse and other physical locations. Among our two business segments, Electronics and Industrial & Specialty utilize 19 and 7 of our manufacturing facilities, respectively, with the remaining 14 manufacturing facilities being shared between the two segments.

We believe that all of our facilities and equipment are in good condition, well-maintained, adequate for our present operations, and utilized for their intended purposes. See Note 7, *Property, Plant and Equipment*, to the Consolidated Financial Statements included in this 2018 Annual Report for amounts invested in land, buildings, machinery, and equipment, and Note 17, *Operating Lease Commitments*, to the Consolidated Financial Statements included in this 2018 Annual Report, for information about our operating lease commitments.

Item 3. Legal Proceedings

In the ordinary course of business, we are involved in various legal disputes, investigations and claims and other legal proceedings, including, but not limited to, product liability claims, contractual disputes, premises claims, and employment, environmental, and health and safety matters. Where appropriate, we may establish loss contingencies for such proceedings based on an assessment of whether the risk of loss is remote, reasonably possible or probable. We also maintain insurance to mitigate certain of such risks. Although we cannot predict with certainty the ultimate resolution of our various legal proceedings, investigations and/or claims asserted against us, we believe that the resolution of these claims will not, individually or in the aggregate, have a material adverse effect on our business, financial condition or results of operations. Due to their inherent uncertainty, however, there can be no assurance as to the ultimate outcome of current or future litigation, proceedings, investigations or claims and it is possible that a resolution of one or more such proceedings could result in fines and penalties that could adversely affect our business, financial condition or results of operations.

In addition, we are involved in various claims relating to environmental matters at a number of current and former plant sites and waste management sites. We engage or participate in remedial and other environmental compliance activities at certain of these sites. At other sites, we have been named as a potential responsible party pursuant to the federal Superfund Act and/or state Superfund laws comparable to the federal law for site remediation. Based on currently available information, we do not anticipate any material losses in excess of the liabilities recorded. However, it is possible that, as additional information becomes available, the impact of an adverse determination could have a different effect. For additional information regarding environmental matters and liabilities, see Note 18, *Contingencies, Environmental and Legal Matters*, to the Consolidated Financial Statements included in this 2018 Annual Report.

Item 4. Mine Safety Disclosure

Not applicable.

Part II

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

Market for our Common Stock

Our common stock is traded on the NYSE under the symbol "ESI." On February 22, 2019, there were approximately 313 registered holders of record of our common stock, par value \$0.01 per share. On February 22, 2019, the closing price of our common stock was \$11.19.

Dividends

We have never declared or paid any cash dividends on our common stock and do not intend to pay cash dividends on our common stock in the foreseeable future. We anticipate that we will retain all of our future earnings, if any, for use in the development and expansion of our business, including future acquisitions, and for general corporate purposes, including for the repayment of debt. Our New Credit Agreement and the indentures governing our existing senior notes also contain restrictions which may prohibit or limit our ability to pay dividends. As a holding company, our ability to pay dividends is highly dependent on receipts of funds from our subsidiaries. See Part I, Item 1A.—Risk Factors— *"We operate as a holding company and our principal source of operating cash is income received from our subsidiaries."*

The holders of our Series A Preferred Stock are entitled to receive an annual dividend on their Series A Preferred Stock in the form of shares of our common stock. For 2018, 2017 and 2016, no stock dividend was declared with respect to the Series A Preferred Stock. Currently, the dividend price used in calculating the Series A Preferred Stock dividends is \$22.85.

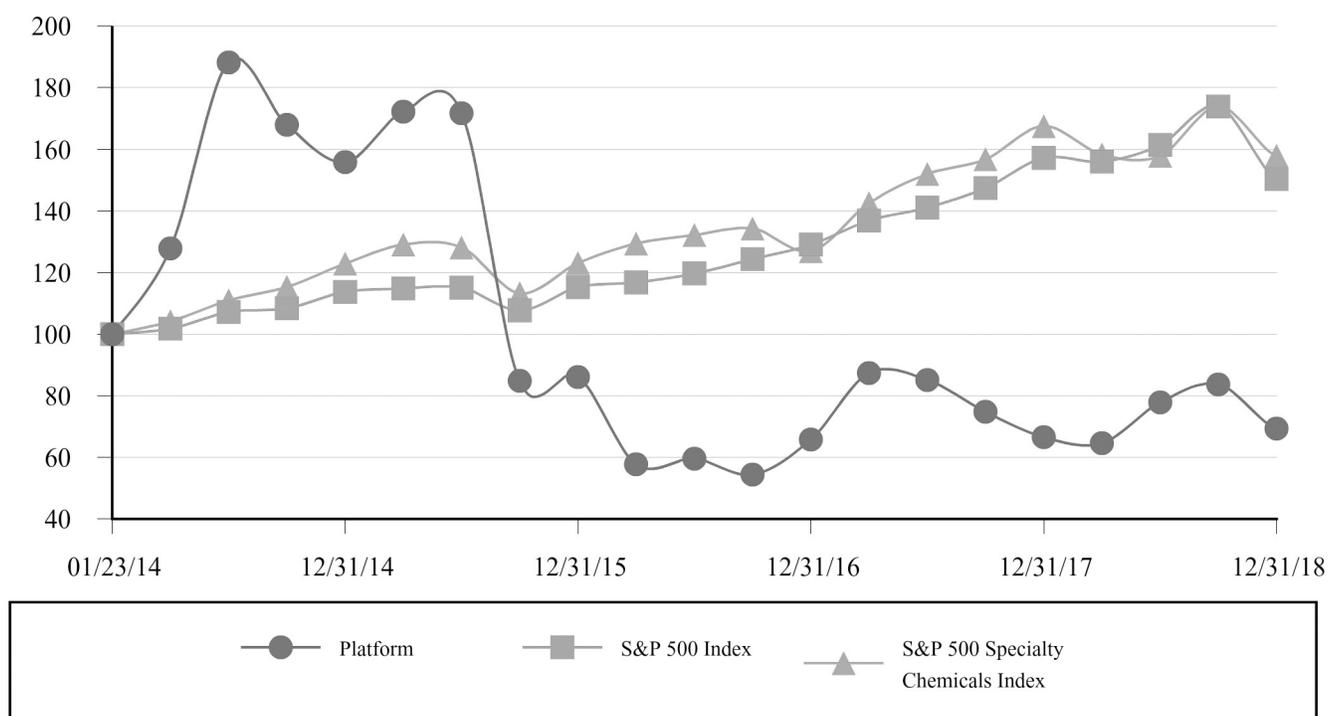
In addition to the restrictions described above, we may become subject to additional covenants should we incur any additional indebtedness, which may prohibit or further limit our ability to pay dividends.

Performance Graph

The following performance graph and related information shall not be deemed "soliciting material" or to be "filed" with the SEC, nor shall such information be incorporated by reference into any future filing under the Securities Act or Exchange Act, except to the extent that the Company specifically incorporates it by reference into such filing.

This graph compares cumulative total stockholder return on our common stock from January 23, 2014 (our first day of trading on the NYSE) through December 31, 2018 with the cumulative total return of (i) the Standard and Poor's 500 Index, and (ii) the S&P 500 Specialty Chemicals Index, assuming a \$100 investment made on January 23, 2014. The stock performance shown on this graph is based on historical data and is not indicative of, or intended to forecast, possible future performance of our common stock.

Indexed Stock Performance



Equity Compensation Plan Information

Information regarding our equity compensation plans, including both stockholder approved plans and plans not approved by stockholders, is incorporated by reference from Part III, Item 12 of this 2018 Annual Report.

Recent Sales of Unregistered Securities

None.

Recent Purchases of our Registered Equity Securities by the Issuer and Affiliated Purchases

The following table provides information about purchases by the Company during the three months ended December 31, 2018 of equity securities of the Company:

Period	Total Number of Shares Purchased	Average Price Paid Per Share	Total Number of Shares Purchased as Part of a Publicly Announced Repurchase Program	Approximate Dollar Value of Shares that May Yet be Purchased Under the Repurchase Program
October 1 - October 31	—	\$ —	*	*
November 1 - November 30	—	—	*	*
December 1 - December 31	196,750 ⁽¹⁾	10.20	*	*
Total	196,750	\$ 10.20	*	*

* Not applicable as the Company did not yet have a share repurchase program in effect.

⁽¹⁾ Represents shares repurchased by the Company in connection with employee elections to use shares to pay withholding taxes upon the vesting of their RSUs.

Item 6. Selected Financial Data

Element Solutions' Selected Consolidated Financial Information

The following selected consolidated historical financial data is derived from our consolidated financial statements. This financial information, included below and elsewhere in this 2018 Annual Report, is not necessarily indicative of future results and should be read in conjunction with the sections entitled "Financial Statements and Supplementary Data" included in Part II, Item 8 of this 2018 Annual Report, and "Management's Discussion and Analysis of Financial Condition and Results of Operations" included in Part II, Item 7 of this 2018 Annual Report.

(\$ amounts in millions, except per share data)	Year Ended December 31,				
	2018 ⁽¹⁾	2017 ⁽²⁾	2016 ⁽³⁾	2015 ⁽⁴⁾	2014 ⁽⁵⁾
Statement of Operations Data					
Net sales	\$ 1,961.0	\$ 1,878.6	\$ 1,770.1	\$ 800.7	\$ 755.2
Gross profit	837.6	813.8	777.3	387.4	385.4
Operating profit	248.5	200.2	89.4	22.1	28.9
Loss before income taxes, non-controlling interests and dividends on preferred shares	(53.2)	(260.4)	(231.8)	(252.6)	(6.3)
Income tax (expense) benefit	(23.8)	68.6	41.3	3.9	(3.0)
Net loss from continuing operations	(77.0)	(191.8)	(190.5)	(248.7)	(9.3)
(Loss) income from discontinued operations, net of tax	(242.9)	(103.8)	113.8	(55.7)	(14.9)
Net loss	\$ (319.9)	\$ (295.6)	\$ (76.7)	\$ (304.4)	\$ (24.2)
(Loss) earnings per share					
Basic from continuing operations	\$ (0.27)	\$ (0.68)	\$ (0.62)	\$ (1.22)	\$ (1.83)
Basic from discontinued operations	(0.86)	(0.36)	0.45	(0.30)	(0.11)
Basic attributable to common stockholders	\$ (1.13)	\$ (1.04)	\$ (0.17)	\$ (1.52)	\$ (1.94)
Diluted from continuing operations	\$ (0.27)	\$ (0.68)	\$ (1.06)	\$ (1.22)	\$ (1.83)
Diluted from discontinued operations	(0.86)	(0.36)	0.41	(0.30)	(0.11)
Diluted attributable to common stockholders	\$ (1.13)	\$ (1.04)	\$ (0.65)	\$ (1.52)	\$ (1.94)
Adjusted EBITDA ⁽⁶⁾	\$ 420.7	\$ 401.2	\$ 368.4	\$ 188.3	\$ 196.2

(\$ amounts in millions)	December 31,				
	2018	2017	2016	2015	2014
Balance Sheet Data					
Cash and cash equivalents	\$ 233.6	\$ 258.4	\$ 236.1	\$ 176.9	\$ 325.1
Working capital ⁽⁷⁾	545.2	581.7	469.4	520.6	1,034.2
Total assets					
Continuing operations	4,367.8	4,651.7	4,487.6	4,701.6	2,913.6
Discontinued operations	5,033.7	5,600.7	5,566.5	5,488.6	1,633.6
Total	9,401.5	10,252.4	10,054.1	10,190.2	4,547.2
Total debt	5,376.0	5,447.2	5,150.2	5,210.9	1,403.7
Total equity	\$ 2,181.1	\$ 2,860.0	\$ 2,889.8	\$ 2,273.3	\$ 2,552.6

Comparability of the statement of operations data for continuing operations within the table above is affected by the following acquisitions: OMG Malaysia in January 2016, Alent in December 2015 and OMG Businesses in October 2015. Comparability of the balance sheet data within the table above is affected by the previously mentioned acquisitions, as well as the acquisitions of Arysta in February 2015, CAS in November 2014 and Agriphar in October 2014, all of which are presented as discontinued operations in each of the periods presented in the table above.

- (1) The results presented include the following significant items affecting comparability for the year ended December 31, 2018:
- Acquisition and integration related costs of \$12.1 million, primarily comprised of facility integration and employee-related costs;
 - Restructuring costs of \$6.3 million, primarily related to severance;
 - Foreign exchange loss on foreign denominated external and internal long-term debt of \$6.0 million;
 - Other expenses of \$14.4 million, primarily comprised of employee-related expenses associated with the Arysta Sale that do not qualify for discontinued operations, non-cash changes in the fair value of contingent consideration and certain professional consulting fees;
 - Non-cash mark-to-market gain related to the contingent consideration in connection with the MacDermid Acquisition of \$21.8 million;
 - Gain on sale of an investment of \$11.3 million;
 - Net interest expense of \$311 million, which decreased from 2017 primarily due to a full year's benefit related to the 2017 redemption of our 10.375% USD Notes due 2021 and the 2017 repricing of portions of our term loans; and
 - Tax expense changed primarily due to i) the impact of the reduction in pre-tax losses, ii) the TCJA rate change from 35% to 21%, iii) the net change due to enactment of foreign statutory tax rates, and iv) the net impact of change in valuation allowances.
- (2) The results presented include the following significant items affecting comparability for the year ended December 31, 2017:
- Debt refinancing charges of \$83.1 million;
 - Foreign exchange loss on foreign denominated external and internal long-term debt of \$53.4 million;
 - Restructuring costs of \$23.5 million, primarily related to severance;
 - Net interest expense of \$337 million, primarily related to interest charges resulting from incremental debt facilities, including term loans, bonds and revolving credit borrowings, impacted by the repricing of our term debt; and
 - Tax expense changed primarily due to i) the benefit related to the provisional estimate under the TCJA in 2017, ii) the 2016 settlement gain of the Series B Convertible Preferred Stock which was treated as a non-taxable purchase price adjustment, and iii) net change due to enactment of foreign statutory tax rates.
- (3) In addition to the impact of the 2016 and 2015 acquisitions and related valuation of intangible assets, the results presented include the following significant items affecting comparability for the year ended December 31, 2016:
- Gains relating to the amendment of the Series B Convertible Preferred Stock and the related execution of a settlement agreement totaling \$32.9 million and \$103 million, respectively;
 - Goodwill impairment charge of \$46.6 million related to our Energy Solutions reporting unit within our Industrial & Specialty segment;
 - Foreign exchange loss on foreign denominated external and internal long-term debt of \$25.8 million;
 - Acquisition and integration related costs of \$25.1 million, primarily comprised of professional fees;
 - Restructuring costs of \$25.0 million, primarily related to severance;
 - Debt refinancing charges of \$19.7 million;
 - Amortization of inventory step-up of \$11.7 million charged to cost of sales;
 - Net interest expense of \$372 million, primarily related to interest charges resulting from incremental debt facilities, including term loans, bonds and revolving credit borrowings, used to fund our acquisitions; and
 - Tax expense changed primarily due to the 2016 settlement gain of the Series B Convertible Preferred Stock which was treated as a non-taxable purchase price adjustment.
- (4) In addition to the impact of the 2015 acquisitions and related valuation of intangible assets, the results presented include the following significant items affecting comparability for the year ended December 31, 2015:
- Fair value loss on foreign exchange forward contract related to the Alent Acquisition of \$73.7 million;
 - Acquisition and integration related costs of \$47.2 million, primarily comprised of professional fees;
 - Amortization of inventory step-up of \$18.5 million charged to cost of sales;
 - Restructuring costs of \$6.7 million, primarily related to severance, professional and consulting fees;
 - Foreign exchange loss on foreign denominated external and internal long-term debt of \$12.7 million;
 - Non-cash mark-to-market charge related to the contingent consideration in connection with the MacDermid Acquisition of \$6.8 million;

- Legal settlement income of \$16.0 million; and
 - Net interest expense of \$207 million, primarily related to interest charges resulting from incremental debt facilities, including term loans, bonds and revolving credit borrowings, used to fund our acquisitions.
- (5) The results presented include the following significant items affecting comparability for the year ended December 31, 2014:
- Acquisition and integration related costs of \$47.8 million, primarily comprised of professional fees;
 - Amortization of inventory step-up of \$35.5 million charged to cost of sales;
 - Non-cash mark-to-market charge related to the contingent consideration in connection with the MacDermid Acquisition of \$29.1 million; and
 - Net interest expense of \$37.9 million' primarily related to interest charges resulting from incremental debt facilities, including term loans, bonds and revolving credit borrowings, used to fund our acquisitions.
- (6) Adjusted EBITDA is a non-GAAP financial measure and as such, should not be considered in isolation from, as a substitute for, or superior to, performance measures calculated in accordance with GAAP. For a definition of Adjusted EBITDA and additional information on why we present this measure, its limitations and a reconciliation to the most comparable applicable GAAP measure, see "*Non-GAAP Financial Measures*" in the Management's Discussion and Analysis of Financial Condition and Results of Operations section included in Part II, Item 7, and Note 23, *Segment Information*, to the Consolidated Financial Statements, all included in this 2018 Annual Report.
- (7) Working capital is defined as current assets less current liabilities from continuing operations.

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

This Management's Discussion and Analysis of Financial Condition and Results of Operations section should be read in conjunction with "Financial Statements and Supplementary Data" included in Part II, Item 8 of this 2018 Annual Report, "Selected Financial Data" included in Part II, Item 6 of this 2018 Annual Report, and our audited Consolidated Financial Statements and notes thereto included elsewhere in this 2018 Annual Report. The following "Overview of our Business" and "Recent Developments" sections below is a brief presentation of our business and certain significant items addressed in this section or elsewhere in this 2018 Annual Report. You should read this section and the relevant portions of this 2018 Annual Report for a complete discussion of the events and items summarized below.

Overview of our Business

Element Solutions Inc, incorporated in Delaware in January 2014, is a leading global specialty chemicals company whose operating businesses formulate a broad range of solutions that enhance the performance of products people use every day. Developed in multi-step technological processes, our businesses' innovative solutions enable customers' manufacturing processes in several key industries, including electronic circuitry, communications infrastructure, automotive systems, industrial surface finishing, consumer packaging and offshore energy. Substantially all of our businesses' products are consumed by our customers as part of their production process, providing us with reliable and recurring revenue streams as the products are replenished in order to continue production. Those customers use our innovations as competitive advantages, relying on us to help them navigate through fast-paced, high-growth markets. Our product development and product extensions are expected to continue to drive sales growth in both new and existing markets, while expanding margins, by continuing to offer high customer value propositions.

We believe the majority of our businesses hold strong positions in the high-growth markets they serve. Our strategy is based on a balance of operational excellence and prudent capital allocation. To that end, our teams focus on commercial execution through strong sales, marketing, product development and supply chain efficiency; while our senior leadership balances holding business teams responsible for operational execution with prioritizing and executing on capital allocation opportunities. In the future, we may pursue targeted and opportunistic acquisitions in our existing and adjacent end-markets that strengthen our current businesses, expand and diversify our product offering, and enhance our growth and strategic position.

We generate revenue through the formulation and sale of our businesses' dynamic chemistry solutions and by providing highly technical service to our customers and OEMs through our extensive global network of specially-trained scientists and engineers. While our dynamic chemistries typically represent only a small portion of our customers' costs, they are integral to our customers' manufacturing processes and overall product performance. We leverage these close relationships with our customers and OEMs to execute our growth strategy and identify opportunities for new products. These new products are developed and created by drawing upon our intellectual property portfolio and technical expertise. We believe that our customers place significant value on the consistency and quality represented by our brands, which we capitalize on through significant market share, customer loyalty and supply chain access. Lastly, operational risks and switching costs make it difficult for our customers to change suppliers which allows us to retain customers and maintain our market positions.

In the fourth quarter, we completed certain changes to our organizational structure that resulted in a change to our reportable business segments. The previously reported Agricultural Solutions segment has met the requirements to be classified as discontinued operations and the previously reported Performance Solutions segment was separated into two segments: Electronics and Industrial & Specialty, which are each described below:

Electronics – The Electronics segment researches, formulates and delivers specialty chemicals and materials for all types of electronics hardware, from complex printed circuit board designs to new interconnection materials. In mobile communications, computers, automobiles and aerospace equipment, its products are an integral part of the electronics manufacturing process and the functionality of their goods. The segment's "wet chemistries" for metallization, surface treatments and solderable finishes form physical circuitry pathways and its "assembly materials," such as solders, pastes, fluxes and adhesives, join those pathways together. The segment provides specialty chemical solutions through the following businesses: Assembly Solutions, Circuitry Solutions and Semiconductor Solutions.

Industrial & Specialty – The Industrial & Specialty segment provides customers with Industrial Solutions, which include chemical systems that protect and decorate metal and plastic surfaces; Graphics Solutions, which include consumable chemicals that enable printing image transfer on flexible packaging materials; and Energy Solutions, which include dynamic chemistries used in water-based hydraulic control fluids for offshore deep-water drilling. Its fully consumable products are used in the aerospace, automotive, construction, consumer electronics, consumer packaged goods and oil and gas production end markets.

Our operating segments include significant foreign operations. There are certain risks associated with our foreign operations. See Part I, Item 1A. Risk Factors— "*Our substantial international operations subject us to risks not faced by domestic competitors.*" and "*Unfavorable currency exchange rate fluctuations could adversely affect our results of operations.*"

Recent Developments

Closing of the Arysta Sale

On July 20, 2018, we agreed to sell 100% of the issued and outstanding shares of common stock of Arysta and its subsidiaries to UPL pursuant to the terms and conditions of the Arysta Sale Agreement. The Arysta Sale was completed on January 31, 2019 for an aggregate purchase price of approximately \$4.20 billion in cash, subject to certain post-closing adjustments relating to, among other things, cash, indebtedness and working capital as of the closing date. The proceeds of the Arysta Sale were primarily used to pay down a portion of our then existing debt under the Credit Agreement.

Accordingly, the Agricultural Solutions business is being reported as discontinued operations in this 2018 Annual Report. In connection with the Arysta Sale, we recorded an estimated asset impairment loss in 2018 of \$450 million as the carrying value of the Agricultural Solutions' business exceeded its estimated fair value, less costs to sell, primarily due to the recognition of foreign currency translation adjustments previously recorded in "Accumulated other comprehensive loss" within Stockholders' Equity. This charge reflects our best estimate of the impairment loss at this time. The actual loss will be dependent on a number of factors, including foreign exchange rates on the closing date of the sale and other closing adjustments.

Recapitalization

New Credit Agreement

Using the proceeds from the Arysta Sale, we paid down our then existing Credit Facilities, including the First Lien Credit Facility and the Revolving Credit Facility. On the closing date of the Arysta Sale, we also entered into the New Credit Agreement which provides for new senior secured credit facilities in an aggregate principal amount of \$1.08 billion, consisting of a revolving facility of \$330 million maturing in 2024 and a term loan of \$750 million maturing in 2026. The revolving facility includes borrowing capacity in the form of letters of credit of up to \$100 million. On the closing date of the Arysta Sale, the \$750 million term loan was borrowed under the New Credit Agreement.

Redemption of Prior Senior Notes

Effective on February 1, 2019, all outstanding Prior Senior Notes were redeemed and the Prior Senior Notes Indenture was terminated. This redemption was funded with a portion of the net proceeds from the Arysta Sale and a portion of borrowings under the New Credit Agreement. As of February 1, 2019, our 5.875% senior notes due 2025 remain outstanding.

Share Repurchases

On February 8, 2019, as part of our previously-announced stock repurchase program, we repurchased 37 million shares of our common stock from Pershing Square Capital Management, L.P., advisor to certain Pershing Square investment funds, in a privately-negotiated transaction, for a per share purchase price of \$11.72, the last sale price reported for the Company's shares as of the 4 pm close of trading on the NYSE on Friday, February 1, 2019, or an aggregate purchase price of \$434 million. These repurchased shares, which represented approximately 13% of our issued and outstanding common stock, were retired on that date. The repurchase was funded from cash on hand and borrowings under the New Credit Agreement.

Acquisitions

In the future, we may pursue targeted and opportunistic acquisitions in our existing end-markets with product offerings that complement our product portfolio or geographic footprint. We expect to achieve commercial and distribution efficiencies by expanding into related categories that can be marketed through our existing distribution channels or provide us with new distribution channels for our existing products. Furthermore, to the extent we pursue future acquisitions, we expect that acquisition candidates would demonstrate a combination of attractive margins, strong cash flow characteristics, niche leading positions and consumable products that generate recurring revenue. We believe the diversity of the niche-end markets we serve will enable us to continue our growth and maintain strong cash flow generation throughout economic cycles and mitigate the impact of a downturn in any single market. We will only pursue a candidate when it is deemed to be fiscally prudent and that meets our acquisition criteria.

We anticipate that any future acquisitions would be financed through a combination of cash on hand, operating cash flow, availability under our New Credit Agreement and/or new debt or equity offerings.

Foreign Currency Exposure

Approximately 75% of our net sales from continuing operations originated outside of the United States and were denominated in numerous currencies, including the euro, Chinese yuan, British pound, and Taiwan dollar. Therefore, changes in foreign exchange rates in any given reporting period may positively or negatively impact our financial performance. Foreign exchange translation positively impacted 2018 net sales performance by approximately 1%.

In addition, our foreign subsidiaries are subject to foreign currency risk relating to receipts from customers, payments to suppliers, and intercompany transactions that are not in their functional currency, which is typically their local currency. As a result, our foreign subsidiaries enter into foreign exchange hedges from time to time and on an ongoing basis to protect against transaction exposures. We actively assess our hedging programs in order to mitigate foreign exchange risk exposures. This includes programs to hedge our foreign currency denominated balance sheet exposures as well as foreign currency anticipated cash flows.

Critical Accounting Estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and judgments regarding uncertainties, and, as a result, may significantly impact our financial results. We base our estimates and judgments on historical experience, current conditions, as well as other reasonable factors and assumptions. Several of the estimates and assumptions we are required to make relate to matters that are inherently uncertain as they pertain to future events. Actual results may differ from these estimates and assumptions and could be material to our financial statements.

We consider the accounting estimates discussed below to be critical to the understanding of our financial statements and involve difficult, subjective, or complex judgments that could potentially affect reported results. See Note 2, *Summary of Significant Accounting Policies*, to the Consolidated Financial Statements included in this 2018 Annual Report for a detailed discussion of the application of these and other accounting policies.

Revenue Recognition

We recognize revenue either upon shipment or delivery of product depending on when it is reasonably assured that both title and the risks and rewards of ownership have been passed on to the customer, and our performance obligations have been fulfilled and collectability is probable. Estimates for sales rebates, incentives and discounts, as well as sales returns and allowances, are accounted for as reductions of revenue when the earnings process is complete. Sales rebates, incentives and discounts are typically earned by customers based on annual sales volume targets. We record an estimate for these accruals based on contract terms and its historical experience with similar programs. An estimate for future expected sales returns is recorded based on historical experience with product returns; however, changes to these estimates may be required if the historical data used in the calculation differs from actual experience. Differences between estimated expense and actual costs are typically immaterial and are recognized in earnings in the period such differences are determined. Variable consideration for volume discounts, rebates and returns are recorded as contract liabilities and settled with the customer in accordance with the terms of the applicable contract, typically when program requirements are achieved by the customer.

Most performance obligations relate to contracts with a duration of less than one year, in which we have the right to invoice the customer at the time the performance obligation is satisfied for the amount of revenue recognized at that time. Accordingly, we have elected the practical expedient available under ASC Topic 606, *Revenue from Contracts with Customers*, not to disclose remaining performance obligations under our contracts. We have also elected the practical expedient to expense incremental costs for obtaining contracts with terms of less than one year.

Receivables and Allowance for Doubtful Accounts

We determine our allowance for doubtful accounts using a combination of factors to reduce our trade receivable balances to their estimated net realizable amount. We maintain and adjust our allowance for doubtful accounts based on a variety of factors, including the length of time receivables are past due from the contractual terms of the receivables, macroeconomic trends and conditions, significant one-time events such as bankruptcy filings or deterioration in the customer's operating results or financial position, historical experience and the financial condition of our customers. We perform ongoing credit evaluations of the financial condition of our third-party distributors and other customers and, in certain circumstances, require collateral such as letters of credit and bank guarantees. Credit risk with respect to accounts receivable is generally diversified due to the large number of entities comprising our customer base and the dispersion of our customers across many different geographical regions. At December 31, 2018 and 2017, we believe there were no significant concentrations of credit risk that could materially impact our results of operations or financial position.

Inventories

Inventories are stated at the lower of cost or net realizable value with cost being determined by the first-in/first-out and average costs methods. We regularly review inventories for obsolescence and excess quantities and calculate reserves based on historical write-offs, customer demand, product evolution, usage rates and quantities of stock on hand. Additional obsolescence reserves may be required if actual sales are less favorable than those projected.

Business Combinations

Purchase price allocations of acquisitions to tangible and intangible assets acquired, liabilities assumed and non-controlling interests in the acquiree are based on estimated fair value at the acquisition date. The excess of the acquisition price over those estimated fair values is recorded as goodwill. Changes to the acquisition date provisional fair values prior to the end of the measurement period are recorded as adjustments to the associated goodwill. Acquisition-related expenses and restructuring costs, if any, are expensed as incurred.

Goodwill

Goodwill is tested for impairment at the reporting unit level annually in the fourth quarter, or when events or changes in circumstances indicate that goodwill might be impaired. Our reporting units are determined based upon our organizational structure in place at the date of the goodwill impairment test. The fair value of each reporting unit is determined based equally on market multiples and the present value of discounted future cash flows. The discounted cash flows are prepared based upon cash flows at the reporting unit level and involve significant judgments related to future growth rates and discount rates, among other considerations, from the vantage point of a market participant.

The primary components of and assumptions used in the assessment consist of the following:

- *Valuation Techniques* - we use a discounted cash flow analysis, which requires assumptions about short and long-term net cash flows, growth rates and discount rates. Additionally, we consider guideline company and guideline transaction information, where available, to aid in the valuation of the reporting units.
- *Growth Assumptions* - Multi-year financial forecasts of revenue and the resulting cash flows for periods of five to seven years, including an estimated terminal growth rate at the end of the forecasted period, are developed for each reporting unit by considering several key business drivers such as new business initiatives, client service and retention standards, market share changes, historical performance and industry and economic trends, among other considerations.
- *Discount Rate Assumptions* - Discount rates are estimated based on the WACC, which combines the required return on equity and considers the risk-free interest rate, market risk premium, small stock risk premium and a company specific risk premium, with the cost of debt, based on Baa-rated U.S. corporate bonds, adjusted using an income tax factor.
- *Estimated Fair Value and Sensitivities* - The estimated fair value of each reporting unit is derived from the valuation techniques described above. The estimated fair value of each reporting unit is analyzed in relation to numerous market and historical factors, including current economic and market conditions, company-specific growth opportunities and guideline company information.

If the fair value of a reporting unit exceeds the carrying value of the net assets assigned to that reporting unit, goodwill is not impaired and no further testing is required. If the carrying value of the net assets assigned to the reporting unit exceeds the fair value of the reporting unit, the goodwill impairment loss is calculated as the difference between these amounts, limited to the amount of goodwill allocated to the reporting unit.

We determined that the excess of the fair value of the Energy Solutions reporting unit within our Industrial & Specialty segment exceeded its carrying value by approximately 20% in 2018. Goodwill assigned to the Energy Solutions reporting unit totaled \$262 million as of the assessment date. The estimated fair value of this reporting unit is highly sensitive to changes in these estimates and assumptions; therefore, in some instances, changes in these assumptions may impact whether the fair value of a reporting unit is greater than its carrying value. We performed sensitivity analysis around these assumptions in order to assess the reasonableness of the assumptions and the resulting estimated fair values. Based on a sensitivity analysis performed for the Energy Solutions reporting unit, a 100 basis point increase in the WACC or 100 basis point decrease in the terminal growth rate, without any other changes to the valuation, would not result in the carrying value being greater than the fair value. Future impairments of this reporting units may occur if the business does not achieve its expected cash flows or macroeconomic conditions result in an increase in the WACC used to estimate fair value.

In 2018, we also determined that the fair values of the remaining reporting units were each significantly in excess of their respective carrying values.

During 2016, we recorded a goodwill impairment charge totaling \$46.6 million related to the Energy Solutions reporting unit within the Industrial & Specialty segment. This impairment charge was the result of previously weak oil prices. We experienced the impact on our results, which slightly lagged the overall industry, as this ultimately caused the industry to depress its overall investments. The fair value was determined using an income approach derived from a discounted cash flow model.

See Note 8, *Goodwill and Intangible Assets*, to the Consolidated Financial Statements included in this 2018 Annual Report for additional information.

Indefinite-Lived Intangible Assets

Indefinite-lived intangible assets are reviewed for potential impairment on an annual basis in the fourth quarter, or more frequently when events or circumstances indicate that such assets may be impaired, by comparing their estimated fair values to their carrying values. An impairment charge is recognized when the carrying value of an indefinite-lived intangible asset exceeds its estimated fair value. We use the “relief from royalty” method to estimate the fair value of tradename intangible assets for impairment. The primary assumptions used to estimate the present value of cash flows from such assets include sales projections and growth rates being applied to a prevailing market-based royalty rate, the effects of which are then tax effected and discounted using the WACC from the vantage point of a market participant. Assumptions concerning sales projections are impacted by the uncertain nature of global and local economic conditions in the various markets we serve.

No material impairments of indefinite-lived intangible assets were identified during 2018, 2017 and 2016.

Long-Lived Assets Including Finite-Lived Intangible Assets

Finite-lived intangible assets are amortized on a straight-line basis over their estimated useful lives, which currently range from 8 to 25 years for customer lists, 5 to 10 years for developed technology, 5 to 20 years for trade names, and up to 5 years for non-compete agreements. If circumstances require a long-lived asset group to be tested for possible impairment, we first determine whether the estimated undiscounted pre-tax future cash flows expected to result from the use of the asset plus the net proceeds expected from disposition of the asset, if any, are less than the carrying value of the asset. When an impairment is identified, the carrying value of the asset is reduced to its estimated fair value based on a discounted cash flow approach or, when available and appropriate, to comparable market values.

No material impairments of long-lived assets, including finite-lived intangible assets, were identified during 2018, 2017 and 2016.

Employee Benefits and Pension Obligations

Amounts recognized in our Consolidated Financial Statements related to pension and other post-retirement benefits are based on actuarial valuations. Inherent in such valuations are assumptions including expected return on plan assets, discount rates at which the liabilities could be settled, rates of increase in future compensation levels and mortality rates. These assumptions are updated annually and are disclosed in Note 10, *Pension, Post-Retirement and Post-Employment Plans*, to the Consolidated Financial Statements included in this 2018 Annual Report. In accordance with GAAP, actual results that differ from the assumptions are recorded in "Accumulated other comprehensive loss" within Stockholders' Equity and amortized over future periods and, therefore, affect expense recognized.

We consider a number of factors in determining and selecting assumptions for the overall expected long-term rate of return on plan assets. We consider the historical long-term return experience of our assets, the current and expected allocation of our plan assets and expected long-term rates of return. We derive these expected long-term rates of return with the assistance of our

investment advisors. We base our expected allocation of plan assets on a diversified portfolio consisting of domestic and international equity securities, fixed income securities, real estate and alternative asset classes. The measurement date used to determine pension and other post-retirement benefits is December 31, at which time the minimum contribution level for the following year is determined.

With respect to U.S. plans, our investment policies incorporate an asset allocation strategy that emphasizes the long-term growth of capital and acceptable asset volatility as long as it is consistent with the volatility of the relevant market indexes. The investment policies attempt to achieve a mix of approximately 25% of plan investments for long-term growth, 74% for liability-matching assets and 1% for near-term benefit payments. We believe this strategy is consistent with the long-term nature of plan liabilities and ultimate cash needs of the plans. Plan assets consist primarily of listed stocks, equity security funds, short-term Treasury bond mutual funds and limited partnership interests. The listed stocks are investments in large-cap and mid-cap companies located in the United States. Assets from the limited partnership investments primarily include listed stocks located in the United States. The weighted average asset allocation of the pension plan was 72% fixed income mutual fund holdings, 14% equity securities, 11% limited partnership interests and managed equity funds, and 3% cash at December 31, 2018. ROA assumptions are determined annually based on a review of the asset mix as well as individual ROA performances, benchmarked against indexes such as the S&P 500 Index and the Russell 2000 Index. In determining an assumed rate of return on plan assets, we consider past performance and economic forecasts for the types of investments held by the pension plan. The asset allocation strategy and ROA assumptions for the non-U.S. plans are determined based on similar set of criteria adapted for local investments, inflation rates and, in certain cases, specific government requirements.

Environmental Matters

We accrue for environmental matters when it is probable that a liability has been incurred and the amount of the liability can be reasonably estimated based on current laws and existing technologies. The accruals are adjusted periodically as assessment and remediation efforts progress or as additional technical or legal information becomes available. Accruals for environmental liabilities are included in the Consolidated Balance Sheets as "Accrued expenses and other current liabilities" and "Other liabilities" at undiscounted amounts. Accruals for related insurance or other third-party recoveries for environmental liabilities are recorded when it is probable that a recovery will be realized and are included in the Consolidated Balance Sheets as "Other current assets" and "Other assets."

We capitalize environmental costs in instances where the costs extend the life of the property, increase its capacity and/or mitigate or prevent contamination from future operations. Environmental costs are also capitalized in recognition of legal asset retirement obligations resulting from the acquisition, construction and/or normal operation of a long-lived asset. Costs related to environmental contamination treatment and cleanup are charged to expense. Estimated future incremental operations, maintenance and management costs directly related to remediation are accrued when such costs are probable and reasonably estimable.

Income Taxes

We recognize deferred tax assets and liabilities based on the differences between the financial statement basis and the tax basis of assets, liabilities, net operating losses and tax credit carryforwards. A valuation allowance is required to be recognized to reduce the recorded deferred tax asset to the amount that will more likely than not be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income by jurisdiction during the periods in which those temporary differences become deductible or when carryforwards can be utilized. We consider the scheduled reversal of deferred tax liabilities, projected future taxable income and tax planning strategies in this assessment. If these estimates and related assumptions change in the future, we may be required to record additional valuation allowances against our deferred tax assets resulting in additional income tax expense. Deferred tax assets and liabilities are measured using the enacted tax rates expected to apply to taxable income in the years in which those temporary differences and carryforwards are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date of such change.

We are subject to income taxes in the United States and in various states and foreign jurisdictions. Significant judgment is required in evaluating our uncertain tax positions and determining our provision for income taxes. The first step in evaluating the tax position for recognition is to determine the amount of evidence that supports a favorable conclusion for the tax position upon audit. In order to recognize the tax position, we must determine whether it is more likely than not that the position is sustainable. The final evaluation step is to measure the tax benefit as the largest amount that has a more than 50% chance of being realized upon final settlement. Although we believe that the positions taken on income tax matters are reasonable, we establish tax reserves in recognition that various taxing authorities may challenge certain of those positions taken, potentially resulting in additional tax liabilities.

Recent Accounting Pronouncements

A summary of recent accounting pronouncements is included in Note 3, *Recent Accounting Pronouncements*, to the Consolidated Financial Statements included in this 2018 Annual Report.

Non-GAAP Financial Measures

To supplement our financial results presented in accordance with GAAP in this Management's Discussion and Analysis of Financial Condition and Results of Operations section, we present certain non-GAAP financial measures, such as operating results on a constant currency and organic basis and Adjusted EBITDA. Management internally reviews each of these non-GAAP measures to evaluate performance on a comparative period-to-period basis in terms of absolute performance, trends and expected future performance with respect to our business. We believe these non-GAAP financial measures, which are each further described below, provide investors with an additional perspective on trends and underlying operating results on a period-to-period comparable basis. We also believe that investors find this information helpful in understanding the ongoing performance of our operations separate from items that may have a disproportionate positive or negative impact on our financial results in any particular period.

These non-GAAP financial measures, however, have limitations as analytical tools and should not be considered in isolation from, or a substitute for, or superior to, the related financial information that we report in accordance with GAAP. The principal limitation of these non-GAAP financial measures is that they exclude significant expenses and income that are required by GAAP to be recorded in our financial statements, and may not be comparable to similarly titled measures of other companies due to potential differences in calculation methods. In addition, these measures are subject to inherent limitations as they reflect the exercise of judgment by management about which items are excluded or included in determining these non-GAAP financial measures. Investors are encouraged to review the reconciliations of these non-GAAP financial measures to their most comparable GAAP financial measures included in this 2018 Annual Report and not to rely on any single financial measure to evaluate our businesses.

Constant Currency

We disclose operating results from net sales through operating profit on a constant currency basis by adjusting to exclude the impact of changes due to the translation of foreign currencies of our international locations into U.S. dollars. Management believes this non-GAAP financial information facilitates period-to-period comparison in the analysis of trends in business performance, thereby providing valuable supplemental information regarding our results of operations, consistent with how we internally evaluate our financial results.

The impact of foreign currency translation is calculated by converting our current-period local currency financial results into U.S. dollars using the prior period's exchange rates and comparing these adjusted amounts to our prior period reported results. The difference between actual growth rates and constant currency growth rates represents the impact of foreign currency translation.

Organic Net Sales Growth

Organic net sales growth is defined as net sales excluding the impact of foreign currency translation, changes due to the pass-through pricing of certain metals and acquisitions and/or divestitures, as applicable. Management believes this non-GAAP financial measure provides investors with a more complete understanding of the underlying net sales trends by providing comparable net sales over differing periods on a consistent basis.

For a reconciliation of reported net sales growth to organic net sales growth, see the "*Net Sales*" captions within the "Results of Operations" section below.

Adjusted EBITDA

We define Adjusted EBITDA as EBITDA (earnings before interest, provision for income taxes, depreciation and amortization), excluding the impact of additional items included in GAAP earnings which we believe are not representative or indicative of our ongoing business. Management believes Adjusted EBITDA provides investors with a more complete understanding of the long-term profitability trends of our business and facilitates comparisons of our profitability to prior and future periods.

For a reconciliation of "Net loss attributable to common stockholders" to Adjusted EBITDA and more information about the adjustments made, see Note 23, *Segment Information*, to the Consolidated Financial Statements included in this 2018 Annual Report.

Results of Operations

(\$ amounts in millions)	Change - 2018 vs 2017					Change - 2017 vs 2016			
	2018	2017	Reported	Constant Currency	Organic	2016	Reported	Constant Currency	Organic
Net sales	\$ 1,961.0	\$ 1,878.6	4%	3%	3%	\$ 1,770.1	6%	6%	4%
Cost of sales	1,123.4	1,064.8	6%	4%		992.8	7%	7%	
Gross profit	837.6	813.8	3%	2%		777.3	5%	5%	
<i>Gross margin</i>	42.7%	43.3%	(60) bps	(50) bps		43.9%	(60) bps	(50) bps	
Operating expenses	589.1	613.6	(4)%	(5)%		687.9	(11)%	(11)%	
Operating profit	248.5	200.2	24%	23%		89.4	124%	125%	
<i>Operating margin</i>	12.7%	10.7%	200 bps	200 bps		5.1%	560 bps	560 bps	
Other expense, net	(301.7)	(460.6)	(34)%			(321.2)	43%		
Income tax (expense) benefit	(23.8)	68.6	(nm)			41.3	66%		
Net loss from continuing operations	(77.0)	(191.8)	(60)%			(190.5)	1%		
(Loss) income from discontinued operations, net	(242.9)	(103.8)	134%			113.8	(nm)		
Net loss	<u>\$ (319.9)</u>	<u>\$ (295.6)</u>	8%			<u>\$ (76.7)</u>	(nm)		
Adjusted EBITDA	\$ 420.7	\$ 401.2	5%	4%		\$ 368.4	9%	9%	
<i>Adjusted EBITDA margin</i>	21.5%	21.4%	10 bps	—% bps		20.8%	60 bps	60 bps	

(nm) Calculation not meaningful.

Year Ended December 31, 2018 Compared to the Year Ended December 31, 2017

Net Sales

Net sales for 2018 increased by 4% on a reported basis and 3% on both a constant currency and organic basis. We generated organic net sales growth in both of our segments, with Electronics providing strong gains from its Assembly and Semiconductor business, and our Industrial & Specialty segment providing organic net sales growth from all of its businesses.

The following table reconciles GAAP net sales growth to constant currency and organic net sales growth for 2018:

	Year ended December 31,		% change						
	2018	2017	Reported Net Sales Growth	Impact of Currency	Constant Currency	Pass-Through Metals Pricing	Acquisitions /Dispositions	Organic Net Sales Growth	
Electronics:									
Assembly Solutions	\$ 580.0	\$ 561.4	3%	(1)%	3%	1%	(1)%	2%	
Circuitry Solutions	406.3	401.1	1%	(2)%	(1)%	—%	—%	(1)%	
Semiconductor Solutions	171.2	160.1	7%	(1)%	6%	—%	—%	6%	
Total	<u>\$ 1,157.5</u>	<u>\$ 1,122.6</u>	3%	(1)%	2%	0%	(1)%	2%	
Industrial & Specialty:									
Industrial Solutions	\$ 560.7	\$ 528.0	6%	(2)%	5%	—%	—%	5%	
Graphics Solutions	159.1	153.4	4%	—%	3%	—%	—%	3%	
Energy Solutions	83.7	74.6	12%	3%	15%	—%	—%	15%	
Total	<u>\$ 803.5</u>	<u>\$ 756.0</u>	6%	(1)%	5%	—%	—%	5%	
Total	<u>\$ 1,961.0</u>	<u>\$ 1,878.6</u>	4%	(1)%	3%	0%	0%	3%	

NOTE: Totals may not sum due to rounding.

Electronics' and consolidated results were positively impacted by \$5.7 million of acquisitions and negatively impacted by \$3.4 million of pass-through metals pricing.

Electronics' net sales for 2018 increased by 3% on a reported basis and 2% on both a constant currency and organic basis. Our Assembly Solutions business, which serves the broader electronics market, contributed approximately 1% to the segment's organic net sales growth driven by higher sales across most product lines, particularly in solder paste and bar products in Asia and the Americas. Semiconductor Solutions also contributed approximately 1% of growth, as advanced packaging and advanced assembly products benefited from the continuing expansion of automotive electronic content and focus on electronic vehicles. Our Circuitry Solutions business saw modest sales pressure in the second half of the year, as demand for high-end mobile phones was lower than anticipated, primarily in Asia.

Industrial & Specialty's net sales for 2018 increased by 6% on a reported basis and 5% on both a constant currency and organic basis. The organic net sales increase was driven by our Industrial Solutions business, which contributed 3% to the segment's growth, with strong growth of surface treatment chemistries in Europe, film products in the Americas and global growth in our Fernox products. Energy Solutions contributed 1% of organic growth, with strong year-over-year results, especially in the Americas, stemming from increased capital spending within the offshore drilling and production industry. Graphic Solutions also contributed approximately 1% of organic growth, with key new customer wins during the year and growth in most regions.

Gross Profit

(\$ amounts in millions)	Year Ended December 31,		Change	
	2018	2017	Reported	Constant Currency
Gross Profit:				
Electronics	\$ 465.5	\$ 451.9	3%	2%
Industrial & Specialty	372.1	361.9	3%	2%
Total	\$ 837.6	\$ 813.8	3%	2%
Gross profit margin:				
Electronics	40.2%	40.3%	(10) bps	(10) bps
Industrial & Specialty	46.3%	47.9%	(160) bps	(150) bps
Total	42.7%	43.3%	(60) bps	(50) bps

Electronics's gross profit for 2018 increased by 3% on a reported basis and 2% on a constant currency basis. The constant currency increase in gross profit was primarily driven by the segment's higher year-over-year organic net sales growth. This growth was partially offset by margin declines primarily in Circuitry Solutions driven by unfavorable product mix from weaker demand for high-end mobile phones in Asia.

Industrial & Specialty's gross profit for 2018 increased by 3% on a reported basis and 2% on a constant currency basis. The constant currency increase in gross profit was primarily driven by the segment's higher year-over-year organic net sales growth. This growth was partially offset by margin declines in Industrial Solutions driven by a combination of unfavorable product mix from a higher proportion of lower-margin product sales, most notably in our Fernox business, as well as the impact of higher year-over-year raw material prices and increases in logistics and warehousing costs.

Operating Expenses

(\$ amounts in millions)	Year ended December 31,		Change	
	2018	2017	Reported	Constant Currency
Selling, technical, general and administrative (STG&A)	\$ 544.8	\$ 567.2	(4)%	(5)%
Research and development (R&D)	44.3	46.4	(5)%	(5)%
Total	\$ 589.1	\$ 613.6	(4)%	(5)%
Operating Expenses as % of Net Sales				
STG&A	27.8%	30.2%	(240) bps	(240) bps
R&D	2.3%	2.5%	(20) bps	(20) bps
Total	30.0%	32.7%	(270) bps	(260) bps

Operating expenses for 2018 decreased 4% on a reported basis and 5% on a constant currency basis, due primarily to a decrease in STG&A expenses, driven by a reduction in the fair value of a contingent consideration liability, which resulted in a benefit of approximately \$21.8 million in 2018, as well as lower restructuring costs, partially offset by higher integration costs and approximately \$11.0 million of employee-related expenses associated with the Arysta Sale that do not qualify for discontinued operations.

Other (Expense) Income, net

(\$ amounts in millions)	Year Ended December 31,	
	2018	2017
Interest expense, net	\$ (311.0)	\$ (336.9)
Foreign exchange loss	(5.5)	(53.7)
Other income (expense), net	14.8	(70.0)
Total	\$ (301.7)	\$ (460.6)

Interest expense, net

Net interest expense decreased \$25.9 million primarily due to a full year's benefit in 2018 related to the redemption of the 10.375% Senior Notes due 2021 and the repricing of portions of our term loans, both of which occurred in 2017.

Foreign exchange loss

Foreign exchange loss decreased \$48.2 million primarily due to the remeasurement of British pound and Taiwan dollar denominated intercompany balances and euro-denominated external debt into U.S. dollar.

Other income (expense), net

Other income, net for 2018 totaled \$14.8 million and included a gain on the sale of an equity investment of \$11.3 million. Other expense, net for 2017 totaled \$70.0 million and included \$72.3 million of charges related to extinguishment of debt, partially offset in part by a favorable legal settlement of \$10.8 million.

Income Tax

The income tax expense for 2018 totaled \$23.8 million, as compared to a \$68.6 million benefit in 2017. Tax expense changed primarily due to i) the impact of the reduction in pre-tax losses, ii) the TCJA rate change from 35% to 21%, iii) the net change due to enactment of foreign statutory tax rates, and iv) the net impact of change in valuation allowances. 2018 includes a net benefit of \$41.8 million associated with the accounting for the impact of the TCJA and 2017 includes a benefit of \$46.3 million associated with the provisional impact of the TCJA. The net benefit in 2018 is comprised of a benefit of \$55.5 million for U.S. federal valuation allowance which was partially offset by an expense of \$13.7 million for the one-time transition tax. For additional information see Note 11, *Income Taxes*, to the Consolidated Financial Statements included in this 2018 Annual Report.

Loss from Discontinued Operations, Net of Tax

Loss from discontinued operations, net of tax, for 2018 and 2017 totaled \$243 million and \$104 million, respectively. The loss incurred in 2018 included an estimated asset impairment charge of \$450 million which primarily reflected the recognition of foreign currency translation adjustments recorded in "Accumulated other comprehensive loss" within Stockholders' Equity. The loss incurred in 2017 included a \$160 million goodwill impairment charge.

Other Comprehensive (Loss) Income

Other comprehensive loss for 2018 totaled \$371 million, as compared to \$256 million of income in the prior year. The change was driven primarily by foreign currency translation losses associated with the Brazilian real, euro, and Chinese yuan, partially offset by gains associated with the British pound and Japanese yen.

Segment Adjusted EBITDA Performance

(\$ amounts in millions)	Year Ended December 31,		Change	
	2018	2017	Reported	Constant Currency
Adjusted EBITDA:				
Electronics	\$ 248.2	\$ 233.1	6%	5%
Industrial & Specialty	172.5	168.1	3%	2%
Total	<u>\$ 420.7</u>	<u>\$ 401.2</u>	5%	4%
Adjusted EBITDA margin:				
Electronics	21.4%	20.8%	60 bps	50 bps
Industrial & Specialty	21.5%	22.2%	(70) bps	(70) bps
Total	21.5%	21.4%	10 bps	—% bps

Electronics' Adjusted EBITDA for 2018 increased 6% on a reported basis and 5% on a constant currency basis. The constant currency increase was primarily driven by gross profit growth in our Assembly Solutions business, partially offset by unfavorable product mix within our Circuitry Solutions business.

Industrial & Specialty's Adjusted EBITDA for 2018 increased 3% on a reported basis and 2% on a constant currency basis. The constant currency increase was primarily driven by gross profit growth in our Energy and Graphics Solutions businesses, partially offset by unfavorable product mix in our Industrial Solutions business.

Year Ended December 31, 2017 Compared to Year Ended December 31, 2016

Net Sales

Net sales for 2017 increased by 6% on a reported and constant currency basis, and 4% on an organic basis. We generated organic net sales growth in both of our segments, with strength in Electronics growing primarily from our Assembly Solutions business, and growth in Industrial and Specialty primarily from our Industrial Solutions business.

The following table reconciles GAAP net sales growth to constant currency and organic net sales growth for 2017:

	Year ended December 31,		% change					
	2017	2016	Reported Net Sales Growth	Impact of Currency	Constant Currency	Pass-Through Metals Pricing	Acquisitions /Dispositions	Organic Net Sales Growth
Electronics:								
Assembly Solutions	\$ 561.4	\$ 493.8	14%	(1)%	13%	(5)%	—%	8%
Circuitry Solutions	401.1	383.2	5%	—%	5%	—%	(1)%	4%
Semiconductor Solutions	160.1	162.2	(1)%	—%	(1)%	—%	—%	(1)%
Total	\$ 1,122.6	\$ 1,039.2	8%	—%	8%	(2)%	—%	5%
Industrial & Specialty:								
Industrial Solutions	\$ 528.0	\$ 486.2	9%	—%	9%	—%	—%	9%
Graphics Solutions	153.4	171.8	(11)%	—%	(11)%	—%	—%	(11)%
Energy Solutions	74.6	72.9	2%	—%	2%	—%	—%	2%
Total	\$ 756.0	\$ 730.9	3%	—%	3%	—%	—%	3%
Total	\$ 1,878.6	\$ 1,770.1	6%	—%	6%	(1)%	—%	4%

NOTE: Totals may not sum due to rounding.

Pass-through metals pricing and acquisitions benefited our Electronics and consolidated results by \$23.6 million and \$2.8 million, respectively.

Electronics' net sales for 2017 increased by 8% on a reported and constant currency basis, and 5% on an organic basis. Organic net sales growth was driven primarily by strength in our Assembly Solutions business, which contributed approximately 4% to the segment's organic net sales growth, reflecting higher sales volume across several product lines, including solder paste. In addition, our Circuitry Solutions business contributed approximately 2% of growth, driven primarily by strong performance in the Asian smart phone market. Organic net sales growth was partially offset by softness in our Semiconductor Solutions business.

Industrial & Specialty's net sales for 2017 increased by 3% on a reported, constant currency and organic basis. The organic net sales increase was driven by our Industrial Solutions businesses, which contributed approximately 6% to the segment's growth, driven by higher sales volume across all regions, most notably in Europe and Asia. Our Energy Solutions business stabilized and returned to growth in 2017 as oil prices stabilized. Organic net sales growth was partially offset by volume declines of flexographic printing plates within our Graphics Solutions business.

Gross Profit

(\$ amounts in millions)	Year Ended December 31,		Change	
	2017	2016	Reported	Constant Currency
Gross Profit:				
Electronics	\$ 451.9	\$ 430.8	5%	5%
Industrial & Specialty	361.9	346.5	4%	4%
Total	<u>\$ 813.8</u>	<u>\$ 777.3</u>	5%	5%
Gross profit margin:				
Electronics	40.3%	41.5%	(120) bps	(110) bps
Industrial & Specialty	47.9%	47.4%	50 bps	50 bps
Total	43.3%	43.9%	(60) bps	(50) bps

Electronics' gross profit for 2017 increased by 5% on a reported and constant currency basis. The constant currency increase in gross profit was primarily driven by the segment's higher year-over-year organic net sales growth and \$11.7 million in inventory step-up amortization in the prior year which did not recur in 2017. The increase was partially offset by higher metals prices across the business. Gross margin erosion was primarily driven by product mix and higher raw material and metals costs in our Assembly Solutions business.

Industrial & Specialty's gross profit for 2017 increased by 4% on a reported and constant currency basis. The constant currency increase in gross profit was primarily driven by the segment's higher year-over-year organic net sales growth within Industrial Solutions. The increase was partially offset by higher raw material costs in Graphics Solutions.

Operating Expenses

(\$ amounts in millions)	Year ended December 31,		Change	
	2017	2016	Reported	Constant Currency
STG&A	\$ 567.2	\$ 596.3	(5)%	(5)%
R&D	46.4	45.0	3%	4%
Goodwill impairment	—	46.6	(100)%	(100)%
Total	<u>\$ 613.6</u>	<u>\$ 687.9</u>	(11)%	(11)%
Operating Expenses as % of Net Sales				
STG&A	30.2%	33.7%	(350) bps	(350) bps
R&D	2.5%	2.5%	—% bps	—% bps
Goodwill impairment	—%	2.6%	(260) bps	(260) bps
Total	32.7%	38.9%	(620) bps	(620) bps

Operating expenses for 2017 decreased by 11% on a reported and constant currency basis due to lower STG&A expenses resulting from decreased acquisition and integration costs associated with previous Acquisitions, realized cost savings from integration activities and lower bad debt expense, offset in part by operating cost inflation. In addition, as a result of our annual goodwill impairment test in 2016, we recorded an impairment charge in our Industrial & Specialty segment of \$46.6 million related to the Energy Solutions reporting unit which did not recur in 2017.

Other (Expense) Income, net

(\$ amounts in millions)	Year Ended December 31,	
	2017	2016
Interest expense, net	\$ (336.9)	\$ (372.3)
Foreign exchange loss	(53.7)	(34.5)
Other (expense) income, net	(70.0)	85.6
Total	\$ (460.6)	\$ (321.2)

Interest expense, net

Net interest expense decreased \$35.4 million primarily due to the repricing of our term debt, which decreased the weighted average effective interest rate on our term loans from approximately 5.64% at December 31, 2016 to 4.53% at December 31, 2017.

Foreign exchange loss

Foreign exchange loss increased \$19.2 million primarily due to the remeasurement of foreign denominated debt and intercompany balances to U.S. dollar.

Other (expense) income, net

Other (expense) income was a year over year negative impact to profits of \$156 million primarily related to the 2016 net gain of \$98.0 million associated with the settlement of our Series B Convertible Preferred Stock and \$61.1 million of incremental charges in 2017 related to extinguishment of debt, partially offset by the \$10.8 million net gain related to a legal settlement agreement.

Income Tax

The income tax benefit for 2017 totaled \$68.6 million, as compared to \$41.3 million for 2016. Tax expense changed primarily due to i) the benefit related to the provisional estimate under the TCJA in 2017, ii) the 2016 settlement gain of the Series B Convertible Preferred Stock which was treated as a non-taxable purchase price adjustment, and iii) net change due to enactment of foreign statutory tax rates.

Other Comprehensive Income

Other comprehensive income for 2017 totaled \$256 million, as compared to \$214 million in the prior year. The change was driven primarily by foreign currency translation gains associated with the euro, Canadian dollar and Chinese yuan, partially offset by losses primarily associated with the British pound.

Segment Adjusted EBITDA Performance

(\$ amounts in millions)	Year Ended December 31,		Change	
	2017	2016	Reported	Constant Currency
Adjusted EBITDA:				
Electronics	\$ 233.1	\$ 212.3	10%	10%
Industrial & Specialty	168.1	156.1	8%	8%
Total	\$ 401.2	\$ 368.4	9%	9%
Adjusted EBITDA margin:				
Electronics	20.8%	20.4%	40 bps	50 bps
Industrial & Specialty	22.2%	21.4%	80 bps	90 bps
Total	21.4%	20.8%	60 bps	60 bps

Electronics' Adjusted EBITDA for 2017 increased 10% on a reported and constant currency basis. The increase was primarily driven by growth of our Assembly and Circuitry Solutions businesses resulting in higher gross profits, as well as cost savings from integration synergies.

Industrial & Specialty's Adjusted EBITDA for 2017 increased 8% on a reported and constant currency basis. The increase was primarily driven by strong growth of our Industrial Solutions businesses resulting in higher gross profits, partially offset by the impact of volume declines in our Graphics Solutions business.

Liquidity and Capital Resources

At December 31, 2018, our indebtedness totaled \$5.38 billion. As a result of our interest rate swaps, approximately 69% of our debt was fixed, with the remaining balance subject to fluctuations in the one-month LIBOR and EURIBOR. On January 31, 2019, we completed the Arysta Sale for approximately \$4.20 billion in cash, subject to certain post-closing adjustments relating to, among other things, cash, indebtedness and working capital as of the closing date of the Arysta Sale. The proceeds of the Arysta Sale, along with a portion of the proceeds from a term loan under the New Credit Agreement, were used to pay down approximately \$4.60 billion of our then existing debt. Following this pay down, interest payments on our remaining debt, consisting of our 5.875% USD Notes due 2025 and our term loan under the New Credit Agreement, are expected to total approximately \$70 million per year over the next three years, taking into account the effect of interest rate swaps and a net investment hedge and excluding any potential additional borrowings under the New Credit Agreement, with the first significant principal payment, totaling \$800 million, due in 2025. In the first quarter of 2019, we also paid \$40.0 million of contingent consideration related to the achievement of certain common stock trading targets set in connection with the MacDermid Acquisition. In addition, on February 8, 2019, as part of our previously-announced stock buyback program, we repurchased 37 million shares of our common stock for \$434 million. The repurchase was funded from cash on hand and proceeds from borrowings under the New Credit Agreement.

Our primary sources of liquidity during 2018 were periodic borrowings under our Revolving Credit Facility and available cash generated from operations. Our primary uses of cash and cash equivalents were to fund operations, working capital, capital expenditures and debt service obligations. We believe that our cash and cash equivalents and cash generated from operations, supplemented by our availability under our lines of credit, including our revolving credit facility under the New Credit Agreement, will be sufficient to meet our working capital needs, interest payments, capital expenditures and other business requirements for at least the next twelve months. However, working capital cycles and/or future acquisitions may require additional funding, which may include future debt and/or equity offerings. Our long-term liquidity may be influenced by our ability to borrow additional funds, renegotiate existing debt and raise equity under terms that are favorable to us.

We may from time to time seek to repurchase our equity and/or to retire or repurchase our outstanding debt through cash purchases and/or exchanges for equity, in open market purchases, privately negotiated transactions or otherwise. Such repurchases or exchanges, if any, will depend on prevailing market conditions, our liquidity requirements, contractual restrictions, applicable restrictions under our various financing arrangements, and other factors.

During 2018, approximately 76% of our net sales from continuing operations were generated by non-U.S. operations, and we expect a large proportion of our net sales to continue to be generated outside of the United States. As a result, our foreign subsidiaries will likely continue to hold a substantial portion of our cash. We expect to manage our worldwide cash requirements based on available funds among the many subsidiaries through which we conduct business and the cost effectiveness with which those funds can be accessed. We may transfer cash from certain international subsidiaries to the United States and other international subsidiaries when we believe it is cost effective to do so.

We continually review our domestic and foreign cash profile, expected future cash generation and investment opportunities, which support our current designation of a portion of these funds as being indefinitely reinvested, and reassess whether there are demonstrated needs to repatriate funds held internationally. If, as a result of our review, we determine that all or a portion of the funds require repatriation, we may be required to accrue additional foreign taxes. Of our \$234 million of cash and cash equivalents at December 31, 2018, \$216 million was held by our foreign subsidiaries. See Note 11, *Income Taxes*, to our Consolidated Financial Statements included in this 2018 Annual Report for further discussion of income taxes on remaining undistributed foreign earnings.

The following is a summary of our cash flows used in operating, investing and financing activities of continuing operations during the periods indicated:

(\$ amounts in millions)	Year Ended December 31,		
	2018	2017	2016
Cash used in operating activities	\$ (0.8)	\$ (34.3)	\$ (38.0)
Cash used in investing activities	\$ (23.8)	\$ (18.9)	\$ (26.1)
Cash used in financing activities	\$ (1.4)	\$ (1.7)	\$ (130.5)

Year Ended December 31, 2018 compared to the Year Ended December 31, 2017

Operating Activities

Decrease in net cash flows used in operating activities of \$33.5 million was driven primarily by higher cash operating profits (net loss adjusted for non-cash items), including the benefit of \$22.3 million of lower interest payments and the prior year having tender offer premium on our 2017 Notes Offerings of \$43.7 million which did not recur in 2018. These were partially offset by higher working capital requirements, primarily in inventory, as sales growth slowed in the second half of 2018.

Investing Activities

Increase in net cash flows used in investing activities of \$4.9 million was driven by the \$28.2 million acquisition of Hi-Tech Korea in 2018, which allowed us to enter the non-conductive adhesives market, partially offset by disposal of an equity investment which generated proceeds of \$25.0 million.

Financing Activities

Year-over-year, our net change in long-term debt totaled \$42.7 million, primarily due to a \$22.5 million redemption of our 6.50% USD Notes due 2022 in 2018 and \$20.2 million of incremental borrowings in 2017. In 2018, net draws against our revolver totaled \$25.0 million.

Year Ended December 31, 2017 Compared to Year Ended December 31, 2016

Operating Activities

Lower cash operating profits (net loss adjusted for non-cash items), which included \$43.7 million of cash outflows related to a tender offer premium on our 2017 Notes Offerings, were offset by lower working capital requirements as improved accounts receivable collections were offset in part by the buildup of inventory in connection with our facility rationalization initiatives.

Investing Activities

The \$7.2 million change was driven primarily by a \$7.5 million increase in our proceeds from the disposals of fixed assets.

Financing Activities

The \$129 million change was driven primarily by the \$460 million cash settlement of the make-whole obligation in 2016 related to our Series B Convertible Preferred Stock, offset in part by the September 2016 Equity Offering, which raised net proceeds of \$392 million. In addition, our financing cash flows increased year-over-year by \$58.9 million as a result of the net change in our long-term debt balance.

Pension Plans

We maintain "Domestic Pension Plans," which consist of a non-contributory domestic defined benefit pension plan and SERP plans. These plans are closed to new participants and plan benefits associated with all current participants have been frozen. We also maintain "Foreign Pension Plans" in such countries as Taiwan and Germany, which include a mixture of retirement, death benefit and longevity plans, among others, all of which have been deemed immaterial, individually and in the aggregate.

The expected long-term rate of return on assets assumption is developed with reference to historical returns, forward-looking return expectations, the Domestic and Foreign Pension Plans' investment allocations, and peer comparisons. We used a long-term rate of return on plan assets of 5.4% and 1.8% for our Domestic and Foreign Pension Plans, respectively, to determine our net periodic pension expense for 2018. The discount rate used to value the pension obligation was developed with reference to a number of factors, including the current interest rate environment, benchmark fixed-income yields, peer comparisons and expected future pension benefit payments. Discount rates of 4.3% and 1.5% were established for the Domestic Pension Plan and Foreign Pension Plans, respectively, at December 31, 2018, compared to rates of 3.7% and 1.3% established for those respective plans at December 31, 2017. We evaluate the Pension Plans' actuarial assumptions on an annual basis, including the expected long-term rate of return on assets and discount rates. A one percent increase in the discount rate would increase (decrease) the pension plan expense and pension benefit obligation by approximately \$1.1 million and \$(22.8) million, respectively, whereas a one percent

decrease in the discount rate would (decrease) increase the pension plan expense and pension benefit obligation by approximately \$(0.9) million and \$27.5 million, respectively.

Our Domestic Pension Plans' investment policies incorporate an asset allocation strategy that emphasizes long-term growth of capital and acceptable asset volatility as long as such volatility remains consistent with the volatility of the indexes of relevant markets. Our investment policies attempt to achieve a mix of approximately 25% of plan investments for long-term growth, 74% for liability-matching and 1% for near-term benefit payments. The weighted average asset allocation of the Domestic Pension Plans was 72% fixed income mutual fund holdings, 14% equity securities, 11% limited partnership interests and managed equity funds and 3% cash at December 31, 2018.

The Domestic Pension Plans were underfunded by \$21.5 million at December 31, 2018 compared to \$26.6 million at December 31, 2017. The improved funding position was primarily driven by actuarial gains due to changes in plan assumptions and experience of \$17.1 million and a \$1.2 million employer contribution, partially offset by \$8.1 million of interest costs and a loss on plan assets of \$5.1 million.

The Foreign Pension Plans were underfunded by \$19.0 million at December 31, 2018 compared to \$15.3 million at December 31, 2017.

The Company is not required to make any plan contributions in 2019. While we do not currently anticipate any, additional future material contributions may be required in order to maintain appropriate funding levels within our plans.

Financial Borrowings

Credit Facilities

At December 31, 2018, we had \$5.38 billion of indebtedness, which primarily included:

- \$2.25 billion of Prior Senior Notes and 5.875% USD Notes due 2025;
- \$3.10 billion of term debt arrangements outstanding under our First Lien Credit Facility; and
- \$25.0 million of borrowings under local and revolving lines of credit.

Availability under our Revolving Credit Facility and various lines of credit and overdraft facilities totaled \$481 million at December 31, 2018 (net of \$9.7 million of stand-by letters of credit which reduce our borrowing capacity).

On January 31, 2019, we completed the Arysta Sale for approximately \$4.20 billion in cash, subject to certain post-closing adjustments relating to, among other things, cash, indebtedness and working capital as of the closing date of the Arysta Sale. The proceeds of the Arysta Sale, along with a portion of the proceeds from a term loan under the New Credit Agreement, were used to pay down approximately \$4.60 billion of our then existing debt. On the closing date of the Arysta Sale, we also entered into the New Credit Agreement which provides for new senior secured credit facilities in an aggregate principal amount of \$1.08 billion, consisting of a revolving facility of \$330 million maturing in 2024 and a term loan of \$750 million maturing in 2026. On the closing date of the Arysta Sale, the \$750 million term loan was borrowed under the New Credit Agreement.

Covenants

At December 31, 2018, the Company was in compliance with the debt covenants contained in its Credit Facilities under the Credit Agreement and, in accordance with applicable debt covenants, had full availability of its unused borrowing capacity, net of letters of credit, under the Revolving Credit Facility.

Contractual Obligations and Commitments

We own most of our major manufacturing facilities, but we do lease certain offices, manufacturing factories, warehouse spaces and land, as well as other equipment primarily under non-cancelable operating leases.

Summarized in the table below are our obligations and commitments at December 31, 2018:

(\$ amounts in millions)		Payment Due by Period						
		2019	2020	2021	2022	2023	Thereafter	Total
Long-term debt	(1)	\$ —	\$ 1,300.0	\$ 1,822.8	\$ 1,078.0	\$ 401.4	\$ 800.0	\$ 5,402.2
Operating leases	(2)	19.2	15.5	11.9	9.7	7.7	27.9	91.9
Interest payments, net	(1)(3)	275.9	249.4	214.6	106.8	59.0	94.0	999.7
Long-term contingent consideration	(4)	—	—	100.0	—	—	—	100.0
Principal payments on capital leases		0.3	0.2	—	—	—	—	0.5
Purchase obligations and other long-term obligations	(5)	2.7	0.2	—	—	—	8.1	11.0
Total cash contractual obligations		\$ 298.1	\$ 1,565.3	\$ 2,149.3	\$ 1,194.5	\$ 468.1	\$ 930.0	\$ 6,605.3

(1) On January 31, 2019, we completed the Arysta Sale for approximately \$4.20 billion in cash, subject to certain post-closing adjustments relating to, among other things, cash, indebtedness and working capital as of the Closing Date. The proceeds of the Arysta Sale, along with a portion of the proceeds from a term loan under the New Credit Agreement, were used to pay down approximately \$4.60 billion of our then existing debt.

(2) Reflects periodic payments made in accordance with operating lease agreements.

(3) Amounts are based on currently applicable interest rates in the case of variable interest rate debt net of associated floating and floor legs of the interest rate swaps.

(4) Reflects the maximum payout in 2021 of 100% of long-term contingent consideration related to the MacDermid Acquisition, in accordance with terms in effect at December 31, 2018. In the first quarter of 2019, we paid \$40.0 million of contingent consideration related to the achievement of common stock trading targets set in connection with the MacDermid Acquisition. The remaining balance relates to Adjusted EBITDA targets which have yet to be achieved. At December 31, 2018, the total long-term contingent consideration related to the MacDermid Acquisition was valued at \$57.4 million. See Note 13, *Financial Instruments*, to the Consolidated Financial Statements included in this 2018 Annual Report for additional information.

(5) Purchase obligations represent amounts committed under legally enforceable supply agreements and non-cancelable purchase contracts. We do not include purchase obligations that can be canceled with a nominal fee. Other long-term obligations consist of asset retirement obligations, or AROs.

Benefit payments related to our defined benefit plans are included in Note 10, *Pension, Post-Retirement and Post Employment Plans*, to the Consolidated Financial Statements included in this 2018 Annual Report, and are excluded from the table above.

To the extent we can reliably determine when payments will occur pertaining to our \$81.4 million unrecognized tax benefit liabilities and \$18.3 million environmental liability, the related amounts will be included in the table above. However, due to the high degree of uncertainty regarding the timing of potential future cash flows associated with such liabilities at December 31, 2018, we are unable to make a reliable estimate as to the timing of such payments, and are therefore excluded from the table above.

Off-Balance Sheet Transactions

We use customary off-balance sheet arrangements, such as letters of credit and operating leases, to finance our business.

For additional information regarding letters of credit, see Note 12, *Debt*, to the Consolidated Financial Statements included in this 2018 Annual Report, under the heading "Lines of Credit and Other Debt Facilities."

For additional information regarding operating leases, see Note 17, *Operating Lease Commitments*, to the Consolidated Financial Statements included in this 2018 Annual Report. As a result of ASU No. 2016-02, "Leases," for fiscal years and interim periods beginning on January 1, 2019, we will be required to record lease liabilities and right-of-use assets for all of our qualifying operating leases that are currently treated as off-balance sheet transactions. For additional information, see Note 3, *Recent Accounting Pronouncements*, to the Consolidated Financial Statements included in this 2018 Annual Report.

There are no other arrangements that have, or are reasonably likely to have, a current or future material effect on our financial condition, changes in financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources.

Item 7A. Quantitative and Qualitative Disclosures about Market Risk

Foreign Currency Risk

We conduct a significant portion of our business in currencies other than the U.S. dollar, our financial reporting currency. In 2018, approximately 76% of our net sales were generated outside of the United States. Generally, our foreign subsidiaries use their local currency as their functional currency; the currency in which they incur operating expenses and collect accounts receivable. Our business is exposed to foreign currency risk from changes in the exchange rate primarily between the U.S. dollar and the following currencies: euro, Chinese yuan, British pound, and Taiwan dollar. As a result, our operating results could be affected by foreign currency exchange rate volatility relative to the U.S. dollar. We are not able to project, in any meaningful way, the possible effect of these foreign currency fluctuations on translated amounts or future earnings.

We actively assess our foreign exchange risk exposure and may enter into foreign exchange hedges to mitigate such risk and protect ourselves against transaction exposures. Our hedging programs include strategies to mitigate our foreign currency denominated balance sheet exposures as well as foreign currency anticipated cash flows. At December 31, 2018, the aggregate U.S. dollar notional amount of foreign currency forward contracts, none of which were designated as hedges for accounting purposes, totaled \$102 million. The market value of the foreign currency forward contracts at December 31, 2018 was a \$0.1 million current liability, and net realized and unrealized gains on such contracts for 2018 totaled \$0.2 million.

Our policies prohibit us from speculating in financial instruments for profit on exchange rate price fluctuations, from trading in currencies for which there are no underlying exposures and from entering into trades for any currency to intentionally increase the underlying exposure.

Interest Rate Risk

We are exposed to interest rate risk associated with our cash and cash equivalents, long-term debt and other financing commitments. At December 31, 2018, we had cash and cash equivalents of \$234 million and total debt of \$5.38 billion, including approximately \$3.13 billion of variable interest rate debt based on either the one-month LIBOR or the one-month EURIBOR. We entered into a series of pay-fixed, receive-floating interest rate swaps with respect to a portion of our indebtedness. The swaps effectively fixed the floating rate portion of the interest payments on approximately \$1.12 billion of our USD denominated debt and €276 million of our euro denominated debt at 1.96% and 1.20%, respectively, through June 2020. The remaining \$1.68 billion of variable interest rate debt continued to be subject to interest rate risk, as interest payments fluctuate with market changes in the underlying interest rates.

On January 31, 2019, we completed the Arysta Sale for approximately \$4.20 billion in cash, subject to certain post-closing adjustments relating to, among other things, cash, indebtedness and working capital as of the closing date of the Arysta Sale. The proceeds of the Arysta Sale, along with a portion of the proceeds from a term loan under the New Credit Agreement, were used to pay down approximately \$4.60 billion of our then existing debt. Following this pay down, we entered into certain interest rate swaps and a net investment hedge which effectively fixes the floating rate portion of our remaining debt.

Counterparty Risk

Outstanding financial derivative instruments expose us to credit loss in the event of non-performance by our counterparties. The credit exposure related to these financial instruments is considered in the fair values of such contracts. We review the credit ratings of our counterparties and adjust our exposure as deemed appropriate on a periodic basis. At December 31, 2018, we believe that our exposure to counterparty risk was immaterial.

Commodity Price Risk

Some raw materials and supplies are subject to price and supply fluctuations caused by market dynamics. Our strategic sourcing initiatives are focused on mitigating the impact of commodity price risk. Although some of our commercial agreements allow us to pass on certain unusual increases in component and raw material costs to our customers in limited situations, we may not be fully compensated for such increased costs. To a lesser extent, we are also exposed to fluctuations in the prices of certain utilities and services, such as electricity, natural gas and freight.

Periodically, we employ forward metals contracts or other financial instruments to hedge commodity price or other price risks. Such contracts are generally designated as normal purchases and accounted for similar to other inventory purchases. We continue to review a full range of business options focused on strategic risk management for all raw material commodities. Any failure by our suppliers to provide acceptable raw materials or supplies could adversely affect our production schedules and contract profitability. We assess qualification of suppliers and continually monitor them to control risk associated with such supply base reliance. At December 31, 2018, the aggregate U.S. dollar notional amount of metals futures contracts, none of which were designated as hedges for accounting purposes, totaled \$28.9 million. Net realized and unrealized gains on such contracts for 2018 totaled \$0.2 million.

Item 8. Financial Statements and Supplementary Data

See “Index to Consolidated Financial Statements” in this 2018 Annual Report.

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

None.

Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

As required by Rule 13a-15 under the Exchange Act, management carried out an evaluation, under the supervision and with the participation of our CEO and CFO, of the effectiveness of the design and operation of our disclosure controls and procedures (as such term is defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act) at December 31, 2018. Based on this evaluation, our CEO and CFO have concluded that our disclosure controls and procedures at December 31, 2018 were effective to provide reasonable assurance that the information required to be disclosed by us in the reports we file or submit under the Exchange Act is (1) recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms and (2) accumulated and communicated to our management, including our CEO and CFO, as appropriate to allow timely decisions regarding required disclosures.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act). Our internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with GAAP. Our internal control over financial reporting includes those policies and procedures that:

- pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of our assets;
- provide reasonable assurance that transactions are recorded as necessary to permit preparation of our financial statements in accordance with GAAP, and that receipts and expenditures are being made only in accordance with authorizations of our management and directors; and
- provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on our 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. As required by Rule 13a-15 under the Exchange Act, management assessed the effectiveness of our internal control over financial reporting at December 31, 2018. In making this assessment, management used the criteria set forth in the *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

Based on this assessment, the Company's management has concluded that our internal control over financial reporting was effective at December 31, 2018.

The effectiveness of our internal control over financial reporting at December 31, 2018 has been audited by PricewaterhouseCoopers LLP, as stated in their report, which appears in this 2018 Annual Report.

Remediation of Previously-Reported Material Weakness

We have completed the documentation and testing of the corrective actions described below and, at December 31, 2018, have concluded that the remediation activities completed are sufficient to allow us to conclude that the previously-reported material weakness related to the accounting for income taxes has been remediated by:

- improving the overall tax provision process by redesigning and updating our policies and procedures;
- enhancing our income tax controls to include specific activities to assess the accounting for significant complex transactions and other tax related judgments;
- deploying training initiatives to incorporate updated policies, processes and controls into standard procedures; and
- aligning staff to reflect the structure and experience levels necessary to execute the enhanced control environment.

Changes to Internal Control Over Financial Reporting

As required by Rule 13a-15(d) under the Exchange Act, our management, including our CEO and CFO, has evaluated the Company's internal control over financial reporting to determine whether any changes occurred during the quarter ended December 31, 2018 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting. There have been no changes in our internal control over financial reporting during the quarter ended December 31, 2018 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

None.

Part III

Item 10. Directors, Executive Officers and Corporate Governance

Codes of Ethics

We maintain a Business Conduct and Ethics Policy applicable to all directors and employees of Element Solutions and its subsidiaries. The Policy is located on our website at www.elementsolutionsinc.com under "Investors – Corporate Governance – Governance Documents." We intend to provide disclosure of any amendment to or waiver of our Business Conduct and Ethics Policy on our website within four business days following the date of such amendment or waiver.

We also maintain a Code of Ethics for Senior Financial Officers applicable to our CEO and CFO. The Code of Ethics is located on our website at www.elementsolutionsinc.com under "Investors – Corporate Governance – Governance Documents." We intend to provide disclosure of any amendment to or waiver of our Code of Ethics for Senior Financial Officers on our website within four business days following the date of such amendment or waiver.

Section 16(a) Beneficial Ownership Reporting Compliance

Section 16(a) of the Exchange Act requires our directors and executive officers and any persons who own more than 10% of our capital stock to file with the SEC and the NYSE various reports as to ownership of such capital stock.

Based solely upon reports and representations submitted by these persons, we believe that all Forms 3, 4 and 5 showing ownership of, and changes of ownership in, our capital stock during 2018 were appropriately filed with the SEC and the NYSE, except for Forms 4 filed on November 20, 2018 with respect to the purchase on November 15, 2018 of 18,000 and 4,000 shares of common stock by Martin E. Franklin and Ian G.H. Ashken, respectively, due to an administrative error. These purchases were part of a series of stock purchases completed in November and December 2018 by Messrs. Franklin and Ashken and were reported immediately on November 20, 2018, upon discovery of the error, along with additional stock purchases which were timely reported.

The remaining information required by Item 10, including information regarding executive officers, directors, membership and function of the audit committee of the Board and the financial expertise of its members, appearing under the headings "Executive Officers of the Company" and "Proposal 1 - Election of Directors" in the 2019 Proxy Statement is incorporated by reference in this section. The information under the heading "Corporate Governance" in the 2019 Proxy Statement is also incorporated by reference in this section. Element Solutions intends to file the 2019 Proxy Statement with the SEC no later than 120 days after December 31, 2018.

Item 11. Executive Compensation

The information required by Item 11 appearing in the 2019 Proxy Statement under the headings "Director Compensation," "Compensation Discussion and Analysis," "Report of the Compensation Committee," and "Executive Compensation Tables" is incorporated by reference in this section. Element Solutions intends to file the 2019 Proxy Statement with the SEC no later than 120 days after December 31, 2018.

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

The information required by Item 12 appearing under the headings "Security Ownership" and "Executive Compensation Tables - Equity Compensation Plan Information" in the 2019 Proxy Statement is incorporated herein by reference. Element Solutions intends to file the 2019 Proxy Statement with the SEC no later than 120 days after December 31, 2018.

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

The information appearing in the 2019 Proxy Statement under the headings "Corporate Governance" and "Certain Relationships and Related Transactions" is incorporated by reference in this section. Element Solutions intends to file the 2019 Proxy Statement with the SEC no later than 120 days after December 31, 2018.

Item 14. Principal Accounting Fees and Services

The information appearing in the 2019 Proxy Statement under the headings "Report of the Audit Committee" and "Proposal 3 - Ratification of Independent Registered Public Accounting Firm for 2019" is incorporated by reference in this section. Element Solutions intends to file the 2019 Proxy Statement with the SEC no later than 120 days after December 31, 2018.

Part IV

Item 15. Exhibits, Financial Statement Schedules

(A) Exhibits

Exhibit Nb.	Exhibit Description	Incorporated by Reference				Included in this 2018 Annual Report
		Form	File Nb.	Exhibit Nb.	Filing Date	
2.1	<u>Stock Purchase Agreement, dated as of July 20, 2018</u> , between Element Solutions and Purchaser	8-K	001-36272	2.1	7/20/2018	
2.2	<u>Amendment Number One to Stock Purchase Agreement dated as of January 25, 2019</u> by and among Element Solutions, Purchaser, Arysta, US Purchaser and Merger Sub	8-K	001-36272	2.1	1/28/2019	
3.1(a)	<u>Certificate of Incorporation</u> , dated January 22, 2014	S-4 POS	333-192778	3.1	1/24/2014	
3.1(b)	<u>Certificate of Amendment of Certificate of Incorporation</u> , dated June 12, 2014	8-K	001-36272	3.1	6/13/2014	
3.1(c)	<u>Certificate of Amendment of Certificate of Incorporation</u> , dated January 31, 2019	8-K	001-36272	3.1	2/5/2019	
3.2	<u>Amended and Restated By-laws</u>	8-K	001-36272	3.2	2/5/2019	
4.1	<u>Specimen Common Stock certificate</u>	8-K	001-36272	4.1	2/5/2019	
4.2	<u>Indenture, dated as of November 24, 2017</u> , among Element Solutions, the guarantors named therein and the Trustee	8-K	001-36272	4.1	11/27/2017	
4.3	<u>Form of 5.875% senior notes due 2025 (Exhibit A)</u>	8-K	001-36272	A to 4.01	11/27/2017	
10.1	<u>New Credit Agreement, dated as of January 31, 2019</u> , by and among, inter alia, the Company, MacDermid, the subsidiaries of the borrowers from time to time parties thereto, the lenders from time to time parties thereto, Credit Suisse Loan Funding LLC, as syndication agent, and Barclays Bank PLC, as administrative agent and collateral agent	8-K	001-36272	10.1	2/5/2019	
10.2	<u>New Security Agreement, dated as of January 31, 2019</u> , among the Company, MacDermid and the subsidiaries of the borrowers from time to time parties thereto in favor of Barclays Bank PLC, as collateral agent	8-K	001-36272	10.2	2/5/2019	
10.3	<u>Credit Agreement, dated as of October 31, 2013</u> , among, inter alia, Platform Acquisition Holding Limited, MacDermid Holdings, LLC, Matrix Acquisition Corp., MacDermid, Incorporated (as successor to Matrix Acquisition Corp., the borrower), the subsidiaries of the borrower from time to time parties thereto, the lenders from time to time parties thereto and Credit Suisse AG, as administrative agent and as collateral agent	S-4/A	333-192778	10.13	1/2/2014	

Exhibit Nb.	Exhibit Description	Incorporated by Reference				Included in this 2018 Annual Report
		Form	File Nb.	Exhibit Nb.	Filing Date	
10.4	<u>Second Amended and Restated Credit Agreement, dated as of August 6, 2014</u> , among, inter alia, the Company, MacDermid Holdings, LLC, MacDermid, Incorporated, the subsidiaries of the borrower from time to time parties thereto, the lenders from time to time parties thereto and Barclays Bank PLC, as administrative agent and collateral agent	8-K	001-36272	10.1	8/8/2014	
10.5	<u>Amendment No. 2, dated as of August 6, 2014</u> , among, inter alia, the Company, MacDermid Holdings, LLC, MacDermid, Incorporated, the subsidiaries of the borrower from time to time parties thereto, the lenders from time to time parties thereto, and Barclays Bank PLC, as administrative agent and collateral agent	8-K	001-36272	10.2	8/8/2014	
10.6	<u>Incremental Amendment No. 1, dated as of October 1, 2014</u> , among the Company, MacDermid, Incorporated, MacDermid Holdings, LLC, certain subsidiaries of MacDermid Holdings, LLC and Platform party thereto, Barclays Bank PLC, as collateral agent and administrative agent, and the lenders party thereto	8-K	001-36272	10.1	10/1/2014	
10.7	<u>Amendment No.3, dated February 13, 2015</u> , among, inter alia, Platform, Holdings, MacDermid, the subsidiaries of the borrower from time to time parties thereto, the lenders from time to time parties thereto, and Barclays Bank PLC, as administrative agent and collateral agent	8-K	001-36272	10.1	2/17/2015	
10.8	<u>Amendment No. 4, dated December 3, 2015</u> , among, inter alia, Platform, MacDermid, the subsidiaries of the borrowers from time to time parties thereto, the lenders from time to time parties thereto, and Barclays Bank PLC, as administrative agent and collateral agent	8-K	001-36272	10.3	12/4/2015	
10.9	<u>Amendment No. 5, dated October 14, 2016</u> , among, inter alios, Platform, MacDermid, the subsidiaries of the borrowers from time to time parties thereto, the lenders from time to time parties thereto, and Barclays Bank PLC, as administrative agent and collateral agent	8-K	001-36272	10.1	10/17/2016	
10.10	<u>Amendment No. 6, dated December 6, 2016</u> , among, inter alios, Platform, MacDermid, the subsidiaries of the borrowers from time to time parties thereto, the lenders from time to time parties thereto, and Barclays Bank PLC, as administrative agent and collateral agent	8-K	001-36272	10.1	12/7/2016	
10.11	<u>Amendment No. 7, dated April 18, 2017</u> , among, inter alios, Platform, MacDermid, the subsidiaries of the borrowers from time to time parties thereto, the lenders from time to time parties thereto, and Barclays Bank PLC, as administrative agent and collateral agent	8-K	001-36272	10.1	4/18/2017	

Exhibit Nb.	Exhibit Description	Incorporated by Reference				Included in this 2018 Annual Report
		Form	File Nb.	Exhibit Nb.	Filing Date	
10.12	<u>Amendment No. 8, dated October 3, 2017, among, inter alios, Platform, MacDermid, the subsidiaries of the borrowers from time to time parties thereto, the lenders from time to time parties thereto, and Barclays Bank PLC, as administrative agent and collateral agent</u>	8-K	001-36272	10.1	10/3/2017	
10.13	<u>Amendment No. 9, dated March 21, 2018, among, inter alios, Platform, MacDermid, certain subsidiaries of Platform parties thereto, the lenders parties thereto, and Barclays Bank PLC, as administrative agent and collateral agent</u>	8-K	001-36272	10.1	3/23/2018	
10.14	<u>Amended and Restated Pledge and Security Agreement, amended and restated as of October 31, 2013, among Platform, MacDermid Holdings, LLC, MacDermid, Incorporated and the subsidiaries of the borrowers from time to time parties thereto in favor of Barclays Bank PLC, as collateral agent</u>	10-K	001-36272	10.25	3/31/2014	
†10.15	<u>Letter Agreement dated July 11, 2016 by and between Element Solutions and John P. Connolly</u>	10-Q	001-36272	10.6	5/9/2017	
†10.16	<u>Platform Specialty Products Corporation Amended and Restated 2013 Incentive Compensation Plan (Appendix A) (effective as of November 1, 2013)</u>	DEF14A	001-36272	Appendix A	4/25/2014	
†10.17	<u>Platform Specialty Products Corporation 2014 Employee Stock Purchase Plan (Appendix B) (effective as of March 6, 2014)</u>	DEF14A	001-36272	Appendix B	4/25/2014	
†10.18	<u>MacDermid, Incorporated Supplemental Executive Retirement Plan, effective April 1, 1994, as amended on February 25, 2005, and as further amended on July 11, 2013</u>	S-4/A	333-192778	10.7	1/2/2014	
†10.19	<u>Amendment No. 1, dated as of December 13, 2013, to MacDermid, Incorporated Supplemental Executive Retirement Plan (as Previously Amended and Restated)</u>	S-4/A	333-192778	10.9	1/2/2014	
†10.20	<u>Form of Restricted Stock Unit Agreement – Platform Specialty Products Corporation Amended and Restated 2013 Incentive Compensation Plan</u>	S-4	333-192778	10.11	1/2/2014	
†10.21	<u>Form of Performance-Based Restricted Stock Unit Award Agreement – Platform Specialty Products Corporation Amended and Restated 2013 Incentive Compensation Plan</u>	8-K	001-36272	10.2	3/25/2016	
†10.22	<u>Form of Non-Qualified Stock Option Agreement – Platform Specialty Products Corporation Amended and Restated 2013 Incentive Compensation Plan</u>	8-K	001-36272	10.3	3/25/2016	
†10.23	<u>Form of Incentive Stock Option Agreement – Platform Specialty Products Corporation Amended and Restated 2013 Incentive Compensation Plan</u>					X

Exhibit Nb.	Exhibit Description	Incorporated by Reference				Included in this 2018 Annual Report
		Form	File Nb.	Exhibit Nb.	Filing Date	
†10.24	<u>Form of Director and Officer Indemnification Agreement</u>	S-4/A	333-192778	10.12	1/2/2014	
†10.25	<u>Form of Change in Control Agreement</u>	10-K	001-36272	10.22	2/28/2018	
10.26	<u>Form of Retaining Holder Securityholders Agreement</u>	S-4/A	333-192778	10.14	1/2/2014	
10.27	<u>Advisory Services Agreement, dated October 31, 2013, by and between Platform Specialty Products Corporation and Mariposa Capital, LLC</u>	S-4/A	333-192778	10.15	1/2/2014	
10.28	<u>Security Holder's Agreement dated as of November 7, 2013</u>	S-4/A	333-192778	10.17	1/2/2014	
10.29	<u>Registration Rights Agreement, dated as of May 20, 2014, between Platform Specialty, the placement agents thereto and the Investors stated therein</u>	8-K	001-36272	10.1	5/21/2014	
10.30	<u>Form of registration rights agreement between Platform and the purchasers of the shares in the October/November 2014 Private Placement</u>	8-K	001-36272	10.3	10/8/2014	
14.1	<u>Code of Ethics for Senior Financial Officers</u>					X
21.1	<u>List of subsidiaries</u>					X
23.1	<u>Consent of PricewaterhouseCoopers LLP</u>					X
24.1	<u>Power of Attorney</u>					X
31.1	<u>Certification of Principal Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002</u>					X
31.2	<u>Certification of Principal Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002</u>					X
32.1*	<u>Certification pursuant to 18 U.S.C. Section 1350 as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002</u>					X
101.SCH	XBRL Taxonomy Extension Schema Document					X
101.CAL	XBRL Extension Calculation Linkbase Document					X
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document					X
101.LAB	XBRL Taxonomy Extension Label Linkbase Document					X
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document					X
101.INS	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					
*	Furnished herewith.					
†	This Exhibit represents a management contract or a compensatory plan.					

(B) Financial Statement Schedule

Schedule II — Valuation and Qualifying Accounts and Reserves

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.

ELEMENT SOLUTIONS INC

By: /s/ John P. Connolly
Name: John P. Connolly
Title: Chief Financial Officer
Date: February 28, 2019

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

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Benjamin Gliklich</u> Benjamin Gliklich	Director and Chief Executive Officer (Principal Executive Officer)	February 28, 2019
<u>/s/ John P. Connolly</u> John P. Connolly	Chief Financial Officer (Principal Financial and Accounting Officer)	February 28, 2019
<u>/s/ Martin E. Franklin</u> Martin E. Franklin	Executive Chairman of the Board	February 28, 2019
<u>/s/ Ian G.H. Ashken</u> Ian G.H. Ashken	Director	February 28, 2019
<u>/s/ Michael F. Goss</u> Michael F. Goss	Director	February 28, 2019
<u>/s/ Nichelle Maynard-Elliott</u> Nichelle Maynard-Elliott	Director	February 28, 2019
<u>/s/ E. Stanley O'Neal</u> E. Stanley O'Neal	Director	February 28, 2019
<u>/s/ Rakesh Sachdev</u> Rakesh Sachdev	Director	February 28, 2019

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Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of Element Solutions Inc

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Element Solutions Inc. and its subsidiaries (formerly known as Platform Specialty Products Corporation) (the “Company”) as of December 31, 2018 and 2017, and the related consolidated statements of operations, comprehensive (loss) income, changes in stockholders’ equity and cash flows for each of the three years in the period ended December 31, 2018, including the related notes and financial statement schedule listed in the accompanying index (collectively referred to as the “consolidated financial statements”). We also have audited the Company's internal control over financial reporting as of December 31, 2018, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2018 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2018, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management’s Report on Internal Control Over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on the Company’s consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

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

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

Definition and Limitations of Internal Control over Financial Reporting

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

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

/s/ PricewaterhouseCoopers LLP

New York, New York

February 28, 2019

We have served as the Company's auditor since 2013.

ELEMENT SOLUTIONS INC AND SUBSIDIARIES
(fka Platform Specialty Products Corporation)
CONSOLIDATED STATEMENTS OF OPERATIONS
(In millions, except per share amounts)

	Year Ended December 31,		
	2018	2017	2016
Net sales	\$ 1,961.0	\$ 1,878.6	\$ 1,770.1
Cost of sales	1,123.4	1,064.8	992.8
Gross profit	837.6	813.8	777.3
Operating expenses:			
Selling, technical, general and administrative	544.8	567.2	596.3
Research and development	44.3	46.4	45.0
Goodwill impairment	—	—	46.6
Total operating expenses	589.1	613.6	687.9
Operating profit	248.5	200.2	89.4
Other (expense) income:			
Interest expense, net	(311.0)	(336.9)	(372.3)
Foreign exchange loss	(5.5)	(53.7)	(34.5)
Other income (expense), net	14.8	(70.0)	85.6
Total other expense	(301.7)	(460.6)	(321.2)
Loss before income taxes and non-controlling interests	(53.2)	(260.4)	(231.8)
Income tax (expense) benefit	(23.8)	68.6	41.3
Net loss from continuing operations	(77.0)	(191.8)	(190.5)
(Loss) income from discontinued operations, net of tax	(242.9)	(103.8)	113.8
Net loss	(319.9)	(295.6)	(76.7)
Net (income) loss attributable to the non-controlling interests	(4.5)	(0.6)	3.0
Net loss attributable to stockholders	(324.4)	(296.2)	(73.7)
Gain on amendment of Series B Convertible Preferred Stock	—	—	32.9
Net loss attributable to common stockholders	\$ (324.4)	\$ (296.2)	\$ (40.8)
(Loss) earnings per share			
Basic from continuing operations	\$ (0.27)	\$ (0.68)	\$ (0.62)
Basic from discontinued operations	(0.86)	(0.36)	0.45
Basic attributable to common stockholders	\$ (1.13)	\$ (1.04)	\$ (0.17)
Diluted from continuing operations	\$ (0.27)	\$ (0.68)	\$ (1.06)
Diluted from discontinued operations	(0.86)	(0.36)	0.41
Diluted attributable to common stockholders	\$ (1.13)	\$ (1.04)	\$ (0.65)
Weighted average common shares outstanding			
Basic	288.2	286.1	243.3
Diluted	288.2	286.1	272.3

See accompanying notes to consolidated financial statements.

ELEMENT SOLUTIONS INC AND SUBSIDIARIES
(fka Platform Specialty Products Corporation)
CONSOLIDATED STATEMENTS OF COMPREHENSIVE (LOSS) INCOME
(In millions)

	Year Ended December 31,		
	2018	2017	2016
Net loss	\$ (319.9)	\$ (295.6)	\$ (76.7)
Other comprehensive (loss) income			
Foreign currency translation adjustments:			
Other comprehensive (loss) income, net of tax of \$0.0 for 2018, 2017 and 2016	(378.0)	241.1	204.6
Pension and post-retirement plans:			
Other comprehensive income before reclassifications, net of tax (benefit) expense of \$(1.6), \$2.2 and \$0.9 for 2018, 2017 and 2016, respectively	1.8	2.5	7.5
Reclassifications, net of tax expense of \$2.1 for 2017	—	8.4	—
Total pension and post-retirement plans	1.8	10.9	7.5
Unrealized (loss) gain on available for sale securities:			
Other comprehensive loss before reclassifications, net of tax benefit of \$0.4 and \$0.6 for 2017 and 2016, respectively		(2.2)	(0.8)
Reclassifications, net of tax expense of \$0.0 for 2017 and 2016		0.5	—
Total unrealized loss on available for sale securities		(1.7)	(0.8)
Derivative financial instrument revaluation:			
Other comprehensive income (loss) before reclassifications, net of tax expense of \$1.5, \$4.3 and \$0.0 for 2018, 2017 and 2016, respectively	6.0	(4.6)	(9.6)
Reclassifications, net of tax of \$0.0 for 2018, 2017 and 2016, respectively	(0.5)	10.4	11.9
Total unrealized gain arising on qualified hedging derivatives	5.5	5.8	2.3
Other comprehensive (loss) income	(370.7)	256.1	213.6
Comprehensive (loss) income	(690.6)	(39.5)	136.9
Comprehensive loss (income) attributable to the non-controlling interests	30.0	(4.2)	1.0
Comprehensive (loss) income attributable to stockholders	\$ (660.6)	\$ (43.7)	\$ 137.9

See accompanying notes to consolidated financial statements.

ELEMENT SOLUTIONS INC AND SUBSIDIARIES
(fka Platform Specialty Products Corporation)
CONSOLIDATED BALANCE SHEETS
(In millions)

	December 31,	
	2018	2017
Assets		
Cash & cash equivalents	\$ 233.6	\$ 258.4
Accounts receivable, net of allowance for doubtful accounts of \$7.7 and \$8.2 at December 31, 2018 and 2017, respectively	382.4	399.8
Inventories	188.1	186.4
Prepaid expenses	14.3	20.2
Other current assets	42.5	43.7
Current assets of discontinued operations	1,621.3	1,432.1
Total current assets	2,482.2	2,340.6
Property, plant and equipment, net	266.9	287.4
Goodwill	2,182.6	2,252.6
Intangible assets, net	1,024.5	1,160.8
Other assets	32.9	42.4
Non-current assets of discontinued operations	3,412.4	4,168.6
Total assets	\$ 9,401.5	\$ 10,252.4
Liabilities & stockholders' equity		
Accounts payable	\$ 100.9	\$ 111.2
Current installments of long-term debt and revolving credit facilities	25.3	10.1
Accrued expenses and other current liabilities	189.5	205.5
Current liabilities of discontinued operations	826.8	764.9
Total current liabilities	1,142.5	1,091.7
Debt and capital lease obligations	5,350.7	5,437.1
Pension and post-retirement benefits	49.5	56.3
Deferred income taxes	133.0	170.0
Contingent consideration	57.4	79.2
Other liabilities	71.1	85.5
Non-current liabilities of discontinued operations	416.2	472.6
Total liabilities	7,220.4	7,392.4
Commitments and contingencies (Note 18)		
Stockholders' equity		
Preferred stock - Series A	—	—
Common stock, 400.0 shares authorized (2018: 289.3 shares issued; 2017: 287.4 shares issued)	2.9	2.9
Additional paid-in capital	4,062.1	4,032.0
Treasury stock (2018: 0.3 shares; 2017: 0.0 shares)	(3.5)	(0.1)
Accumulated deficit	(1,195.4)	(869.7)
Accumulated other comprehensive loss	(756.9)	(422.0)
Total stockholders' equity	2,109.2	2,743.1
Non-controlling interests	71.9	116.9
Total equity	2,181.1	2,860.0
Total liabilities and stockholders' equity	\$ 9,401.5	\$ 10,252.4

See accompanying notes to consolidated financial statements.

ELEMENT SOLUTIONS INC AND SUBSIDIARIES (fka Platform Specialty Products Corporation)
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In millions)

Year Ended December 31,

	2018	2017	2016
Cash flows from operating activities:			
Net loss	\$ (319.9)	\$ (295.6)	\$ (76.7)
Net (loss) income from discontinued operations, net of tax	(242.9)	(103.8)	113.8
Net loss from continuing operations	(77.0)	(191.8)	(190.5)
Reconciliations of net loss to net cash flows provided by operating activities:			
Depreciation and amortization	156.7	156.0	155.7
Deferred income taxes	(54.7)	(134.1)	(42.4)
Amortization of inventory step-up	—	—	11.7
Foreign exchange (gain) loss	(0.2)	45.8	34.0
Goodwill impairment	—	—	46.6
Gain on settlement agreement related to Series B Convertible Preferred Stock	—	—	(103.0)
Other, net	4.0	75.1	67.9
Changes in assets and liabilities, net of acquisitions:			
Accounts receivable	0.9	(21.5)	(42.4)
Inventory	(18.8)	(9.2)	7.6
Accounts payable	(5.5)	(3.3)	(9.2)
Accrued expenses	(10.6)	2.5	26.5
Prepaid expenses and other current assets	10.5	(13.0)	(4.3)
Other assets and liabilities	(6.1)	59.2	3.8
Net cash flows used in operating activities of continuing operations	(0.8)	(34.3)	(38.0)
Cash flows from investing activities:			
Capital expenditures	(28.4)	(30.8)	(32.6)
Proceeds from disposal of property, plant and equipment	4.2	16.9	9.4
Proceeds from the sale of equity investment	25.0	—	—
Acquisition of business, net of cash acquired	(28.2)	—	(1.2)
Other, net	3.6	(5.0)	(1.7)
Net cash flows used in investing activities of continuing operations	(23.8)	(18.9)	(26.1)
Cash flows from financing activities:			
Debt proceeds, net of discount and premium	—	4,142.7	3,300.9
Repayments of borrowings	(22.5)	(4,122.5)	(3,339.6)
Change in lines of credit, net	25.0	—	(13.2)
Proceeds from issuance of common stock, net	1.4	1.4	391.5
Payment of financing fees	(1.4)	(22.6)	(9.5)
Settlement of Series B Convertible Preferred Stock	—	—	(460.0)
Other, net	(3.9)	(0.7)	(0.6)
Net cash flows used in financing activities of continuing operations	(1.4)	(1.7)	(130.5)
Cash flows from discontinued operations:			
Net cash flows (used in) provided by operating activities of discontinued operations	(7.9)	185.3	227.8
Net cash flows used in investing activities of discontinued operations	(51.2)	(28.6)	(44.7)
Net cash flows provided by (used in) financing activities of discontinued operations	43.8	(74.5)	19.9
Net cash flows (used in) provided by discontinued operations	(15.3)	82.2	203.0
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(27.0)	33.1	(17.5)
Net (decrease) increase in cash, cash equivalents and restricted cash	(68.3)	60.4	(9.1)
Cash, cash equivalents and restricted cash at beginning of period ⁽¹⁾	483.8	423.4	432.5
Cash, cash equivalents and restricted cash at end of period ⁽²⁾	\$ 415.5	\$ 483.8	\$ 423.4
Supplemental disclosure information of continuing operations:			
Cash paid for interest	\$ 293.4	\$ 315.7	\$ 348.8
Cash paid for income taxes	\$ 78.9	\$ 73.9	\$ 62.6

⁽¹⁾ Includes cash, cash equivalents and restricted cash of discontinued operations of \$225.4 million, \$187.4 million and \$255.7 million at December 31, 2017, 2016 and 2015, respectively.

⁽²⁾ Includes cash, cash equivalents and restricted cash of discontinued operations of \$181.9 million, \$225.4 million and \$187.4 million at December 31, 2018, 2017 and 2016, respectively.

See accompanying notes to consolidated financial statements.

ELEMENT SOLUTIONS INC AND SUBSIDIARIES
(fka Platform Specialty Products Corporation)
CONSOLIDATED STATEMENT OF CHANGES IN STOCKHOLDERS' EQUITY
(In millions, except share and per share amounts)

	Preferred Stock		Common Stock		Additional Paid-in Capital	Treasury Stock		Accumulated Deficit	Accumulated Other Comprehensive (Loss) Income	Total Stockholders' Equity	Non-controlling Interests	Total Equity
	Shares	Amount	Shares	Amount		Shares	Amount					
Balance at December 31, 2017	2,000,000	\$ —	287,405,939	\$ 2.9	\$ 4,032.0	6,618	\$ (0.1)	\$ (869.7)	\$ (422.0)	\$ 2,743.1	\$ 116.9	\$ 2,860.0
Impact of ASU 2016-01 adoption	—	—	—	—	—	—	—	(1.3)	1.3	—	—	—
Balance at January 1, 2018	2,000,000	—	287,405,939	2.9	4,032.0	6,618	(0.1)	(871.0)	(420.7)	2,743.1	116.9	2,860.0
Net (loss) income	—	—	—	—	—	—	—	(324.4)	—	(324.4)	4.5	(319.9)
Other comprehensive loss, net of taxes	—	—	—	—	—	—	—	—	(336.2)	(336.2)	(34.5)	(370.7)
Conversion of PDH Common Stock into common stock	—	—	793,063	—	9.9	—	—	—	—	9.9	(9.9)	—
Issuance of common stock under ESPP	—	—	128,595	—	1.2	—	—	—	—	1.2	—	1.2
Share based compensation expense	—	—	—	—	18.9	—	—	—	—	18.9	—	18.9
Exercise/ vesting of share based compensation	—	—	988,573	—	0.1	335,349	(3.4)	—	—	(3.3)	—	(3.3)
Changes in non-controlling interests	—	—	—	—	—	—	—	—	—	—	(5.1)	(5.1)
Balance at December 31, 2018	2,000,000	\$ —	289,316,170	\$ 2.9	\$ 4,062.1	341,967	\$ (3.5)	\$ (1,195.4)	\$ (756.9)	\$ 2,109.2	\$ 71.9	\$ 2,181.1

See accompanying notes to consolidated financial statements.

ELEMENT SOLUTIONS INC AND SUBSIDIARIES
(fka Platform Specialty Products Corporation)
CONSOLIDATED STATEMENT OF CHANGES IN STOCKHOLDERS' EQUITY (continued)
(In millions, except share and per share amounts)

	Preferred Stock		Common Stock		Additional Paid-in Capital	Treasury Stock		Accumulated Deficit	Accumulated Other Comprehensive (Loss) Income	Total Stockholders' Equity	Non-controlling Interests	Total Equity
	Shares	Amount	Shares	Amount		Shares	Amount					
Balance at December 31, 2016	2,000,000	\$ —	284,221,168	\$ 2.8	\$ 3,981.3	—	\$ —	\$ (573.5)	\$ (674.5)	\$ 2,736.1	\$ 153.7	\$ 2,889.8
Net (loss) income	—	—	—	—	—	—	—	(296.2)	—	(296.2)	0.6	(295.6)
Other comprehensive income, net of taxes	—	—	—	—	—	—	—	—	252.5	252.5	3.6	256.1
Conversion of PDH Common Stock into common stock	—	—	2,923,436	0.1	35.6	—	—	—	—	35.7	(35.7)	—
Issuance of common stock under ESPP	—	—	138,566	—	1.3	—	—	—	—	1.3	—	1.3
Share based compensation expense	—	—	—	—	11.7	—	—	—	—	11.7	—	11.7
Exercise/ vesting of share based compensation	—	—	122,769	—	0.1	6,618	(0.1)	—	—	—	—	—
Changes in non-controlling interests	—	—	—	—	2.0	—	—	—	—	2.0	(5.3)	(3.3)
Balance at December 31, 2017	2,000,000	\$ —	287,405,939	\$ 2.9	\$ 4,032.0	6,618	\$ (0.1)	\$ (869.7)	\$ (422.0)	\$ 2,743.1	\$ 116.9	\$ 2,860.0

See accompanying notes to consolidated financial statements.

ELEMENT SOLUTIONS INC AND SUBSIDIARIES
(fka Platform Specialty Products Corporation)
CONSOLIDATED STATEMENT OF CHANGES IN STOCKHOLDERS' EQUITY (continued)
(In millions, except share and per share amounts)

	Preferred Stock		Common Stock		Additional Paid-in Capital		Treasury Stock		Accumulated Deficit	Accumulated Other Comprehensive (Loss) Income	Total Stockholders' Equity	Non-controlling Interests	Total Equity
	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount					
Balance at December 31, 2015	2,000,000	\$ —	229,464,157	\$ 2.3	\$ 3,520.4	—	\$ —	\$ (532.7)	\$ (886.1)	\$ 2,103.9	\$ 169.4	\$ 2,273.3	
Net loss	—	—	—	—	—	—	—	(73.7)	—	(73.7)	(3.0)	(76.7)	
Other comprehensive income, net of taxes	—	—	—	—	—	—	—	—	211.6	211.6	2.0	213.6	
Issuance of common stock to former non-founder director for exercise of stock options	—	—	7,642	—	—	—	—	—	—	—	—	—	
Conversion of PDH Common Stock into common stock	—	—	325,431	—	3.8	—	—	—	—	3.8	(3.8)	—	
Issuance of common stock under ESPP	—	—	136,060	—	0.9	—	—	—	—	0.9	—	0.9	
Share based compensation expense	—	—	—	—	7.4	—	—	—	—	7.4	—	7.4	
Issuance of common stock at \$8.25 per share in the September 2016 Equity Offering	—	—	48,787,878	0.5	402.0	—	—	—	—	402.5	—	402.5	
Issuance costs in connection with the September 2016 Equity Offering	—	—	—	—	(11.9)	—	—	—	—	(11.9)	—	(11.9)	
Series B Convertible Preferred Stock settlement	—	—	5,500,000	—	54.9	—	—	32.9	—	87.8	—	87.8	
Changes in non-controlling interests	—	—	—	—	3.8	—	—	—	—	3.8	(10.9)	(7.1)	
Balance at December 31, 2016	2,000,000	\$ —	284,221,168	\$ 2.8	\$ 3,981.3	—	\$ —	\$ (573.5)	\$ (674.5)	\$ 2,736.1	\$ 153.7	\$ 2,889.8	

See accompanying notes to consolidated financial statements.

ELEMENT SOLUTIONS INC AND SUBSIDIARIES
(fka Platform Specialty Products Corporation)
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1. BACKGROUND AND BASIS OF PRESENTATION

Background

Element Solutions (fka Platform Specialty Products Corporation) was incorporated in Delaware in January 2014 and its shares of common stock, par value \$0.01 per share, trade on the NYSE under the ticker symbol “ESI.”

Element Solutions is a leading global specialty chemicals company whose businesses formulate a broad range of solutions that enhance the performance of products people use every day. Developed in multi-step technological processes, the Company's innovative solutions enable its customers' manufacturing processes in several key industries, including electronic circuitry, communications infrastructure, automotive systems, industrial surface finishing, consumer packaging and offshore energy. Element Solutions delivers its products to customers through its sales and service workforce, regional distributors and manufacturing representatives.

The Company's operations are organized in two reportable segments: Electronics and Industrial & Specialty. The reporting segments represent businesses for which separate financial information is utilized by the chief operating decision maker, or CODM, for purpose of allocating resources and evaluating performance.

Electronics – The Electronics segment researches, formulates and delivers specialty chemicals and materials for all types of electronics hardware, from complex printed circuit board designs to new interconnection materials. In mobile communications, computers, automobiles and aerospace equipment, its products are an integral part of the electronics manufacturing process and the functionality of their goods. The segment's "wet chemistries" for metallization, surface treatments and solderable finishes form physical circuitry pathways, and its "assembly materials," such as solders, pastes, fluxes and adhesives, join those pathways together. The segment provides specialty chemical solutions through the following businesses: Assembly Solutions, Circuitry Solutions and Semiconductor Solutions.

Industrial & Specialty – The Industrial & Specialty segment provides customers with Industrial Solutions, which include chemical systems that protect and decorate metal and plastic surfaces; Graphics Solutions, which include consumable chemicals that enable printing image transfer on flexible packaging materials; and Energy Solutions, which include dynamic chemistries used in water-based hydraulic control fluids for offshore deep-water drilling. Its fully consumable products are used in the aerospace, automotive, construction, consumer electronics, consumer packaged goods and oil and gas production end markets.

Basis of Presentation

The accompanying Consolidated Financial Statements are prepared in accordance with GAAP and include the accounts of Element Solutions and all of its controlled subsidiaries. The Company consolidates the income, expenses, assets, liabilities and cash flows of its subsidiaries from the date it acquires control or becomes the primary beneficiary. All intercompany accounts and transactions have been eliminated upon consolidation.

On January 31, 2019, pursuant to the terms and conditions of the Arysta Sale Agreement, the Company completed the sale to UPL of 100% of the issued and outstanding shares of common stock of Arysta and its subsidiaries for an aggregate purchase price of approximately \$4.20 billion in cash, subject to certain post-closing adjustments relating to, among other things, cash, indebtedness and working capital as of the Closing Date. As a result of the Arysta Sale, Agricultural Solutions' assets, liabilities, operating results and cash flows for all periods presented have been classified as discontinued operations within the Consolidated Financial Statements. See Note 5, *Discontinued Operations*, for additional information. Subject to the covenants, events of default and provisions discussed in Note 12, *Debt*, the Company's Prior Senior Notes, 5.875% USD Notes due 2025 and term loans then outstanding under the Credit Agreement were not required to be immediately redeemed or repaid in connection with the Arysta Sale. As such, the related liabilities and interest expense are not included in discontinued operations and therefore fully burden continuing operations.

In preparing the Consolidated Financial Statements in conformity with GAAP, management uses estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of net sales and expenses during the reporting period. Management applies judgment based on its understanding and analysis of the relevant circumstances, including historical experience and future expectations. These judgments, by their nature, are subject to an inherent degree of uncertainty. Accordingly, actual results could differ significantly from these estimates and assumptions.

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Certain prior year amounts have been reclassified to conform to the current year's presentation.

Out of Period Adjustments

The Company evaluated the previously disclosed errors noted below and their impact on the relevant quarterly and annual periods, individually and in the aggregate, and concluded that those adjustments were not material to the Company's 2017 or 2016 Consolidated Financial Statements.

Continuing Operations

The Company identified and corrected out-of-period errors originating in 2016 associated with income taxes. The impact of these errors was the overstatement of net loss in 2016 and the understatement of net loss in 2017 of \$6.6 million.

Discontinued Operations

The Company identified and corrected out-of-period errors originating in 2016 associated with income taxes. The impact of these errors was the overstatement of net loss in 2016 and the understatement of net loss in 2017 of \$2.7 million.

The Company identified and corrected out of period errors originating in 2015 associated with income taxes, specifically the tax accounting for one of Arysta's foreign subsidiary's net operating loss carry-forwards in which the local tax law limited their use over time. The impact of this error (\$9.5 million) and other immaterial errors was the understatement of net loss in 2015 and the overstatement of net loss in 2016 of approximately \$9.3 million.

During 2016, the Company identified and corrected an error that effected prior periods related to the allocation of expenses to non-controlling interests. On a cumulative basis since the first quarter of 2015, the Company determined \$6.1 million of expenses were not properly allocated to its non-controlling interests resulting in an understatement of "Net loss attributable to non-controlling interests" and overstatement of "Net loss attributable to stockholders" in the Company's Consolidated Statements of Operations.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Cash and Cash Equivalents – The Company considers all highly liquid instruments purchased with an original maturity of three months or less to be cash equivalents.

Receivables and Allowance for Doubtful Accounts – The Company determines its allowance for doubtful accounts using a combination of factors to reduce trade receivable balances to their estimated net realizable amount. The Company maintains and adjusts its allowance for doubtful accounts based on a variety of factors, including the length of time receivables are past due from the contractual terms of the receivables, macroeconomic trends and conditions, significant one-time events such as bankruptcy filings or deterioration in the customer's operating results or financial position, historical experience and the financial condition of its customers. The Company performs ongoing credit evaluations of the financial condition of its third-party distributors and other customers and, in certain circumstances, requires collateral, such as letters of credit and bank guarantees. Credit risk with respect to accounts receivable is generally diversified due to the large number of entities comprising the Company's customer base and its dispersion across many different geographical regions. At December 31, 2018 and 2017, the Company did not believe it had any significant concentrations of credit risk that could materially impact its results of operations or financial position.

Inventories – Inventories are stated at the lower of cost or net realizable value with cost being determined by the first-in/first-out and average costs methods. The Company regularly reviews inventories for obsolescence and excess quantities and calculates reserves based on historical write-offs, customer demand, product evolution, usage rates and quantities of stock on hand. Additional obsolescence reserves may be required if actual sales are less favorable than those projected.

Property, Plant and Equipment – Property, plant and equipment is stated at cost less accumulated depreciation. Equipment under capital lease arrangements is stated at the net present value of minimum lease payments. The Company records depreciation on a straight-line basis over the estimated useful life of each asset.

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Estimated useful lives by asset class are as follows:

	Average useful life (in years)		
Buildings and building improvements	5	to	20
Machinery, equipment and fixtures	3	to	15
Computer hardware and software	3	to	7
Furniture and automobiles	3	to	7
Leasehold improvements	Lesser of useful life or lease term		

Maintenance and repair costs are charged directly to expense; renewals and improvements which significantly extend the useful life of the asset are capitalized and expensed over its remaining useful life. Costs and accumulated depreciation on assets retired or disposed of are removed from the accounts and any resulting gains or losses are recorded to earnings in the period of disposal.

Business Combinations – The Company allocates the purchase price of acquisitions to tangible and intangible assets acquired, liabilities assumed and non-controlling interests in the acquiree based on their estimated fair values at the acquisition date. The excess of the acquisition price over those estimated fair values is recorded as goodwill. Changes to the acquisition date provisional fair values prior to the end of the measurement period are recorded as adjustments to the associated goodwill. Acquisition-related expenses and restructuring costs, if any, are expensed as incurred.

Goodwill – Goodwill is tested for impairment at the reporting unit level annually in the fourth quarter, or when events or changes in circumstances indicate that goodwill might be impaired. The Company's reporting units are determined based upon its organizational structure in place at the date of the goodwill impairment test.

The Company tests for impairment by comparing the fair value of each reporting unit to its carrying value. The fair value of each reporting unit is based equally on market multiples and the present value of discounted future cash flows. Excluding certain nonrecurring charges, the discounted cash flows are prepared based upon cash flows at the reporting unit level. The cash flow model utilized in the goodwill impairment test involves significant judgments related to future growth rates and discount rates, among other considerations from the vantage point of a market participant. If the fair value of a reporting unit exceeds the carrying value of the net assets assigned to that reporting unit, goodwill is not impaired and no further testing is required. If the carrying value of the net assets assigned to the reporting unit exceeds the fair value of the reporting unit, the goodwill impairment loss is calculated as the difference between these amounts, limited to the amount of goodwill allocated to the reporting unit.

The primary components of and assumptions used in the assessment consist of the following:

- *Valuation Techniques* - the Company uses a discounted cash flow analysis, which requires assumptions about short and long-term net cash flows, growth rates and discount rates. Additionally, it considers guideline company and guideline transaction information, where available, to aid in the valuation of the reporting units.
- *Growth Assumptions* - Multi-year financial forecasts are developed for each reporting unit by considering several key business drivers, such as new business initiatives, client service and retention standards, market share changes, historical performance and industry and economic trends, among other considerations.
- *Discount Rate Assumptions* - Discount rates are estimated based on the WACC, which combines the required return on equity and considers the risk-free interest rate, market risk premium, small stock risk premium and a company specific risk premium, with the cost of debt, based on rated corporate bonds, adjusted using an income tax factor.
- *Estimated Fair Value and Sensitivities* - The estimated fair value of each reporting unit is derived from the valuation techniques described above. The estimated fair value of each reporting unit is analyzed in relation to numerous market and historical factors, including current economic and market conditions, company-specific growth opportunities and guideline company information.

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Indefinite-Lived Intangible Assets – Indefinite-lived intangible assets are reviewed for potential impairment on an annual basis, in the fourth quarter, or more frequently when events or circumstances indicate that such assets may be impaired, by comparing their estimated fair values to their carrying values. An impairment charge is recognized when the carrying value of an indefinite-lived intangible asset exceeds its estimated fair value. The Company uses the “relief from royalty” method to estimate the fair value of trade name intangible assets for impairment. The primary assumptions used to estimate the present value of cash flows from such assets include sales projections and growth rates being applied to a prevailing market-based royalty rate, the effects of which are then tax effected and discounted using the WACC from the vantage point of a market participant. Assumptions concerning sales projections are impacted by the uncertain nature of global and local economic conditions in the various markets it serves.

Finite-Lived Intangible Assets – Finite-lived intangible assets are amortized on a straight-line basis over their estimated useful lives, which currently range from 8 to 25 years for customer lists, 5 to 10 years for developed technologies, 5 to 20 years for trade names and up to 5 years for non-compete agreements. If circumstances require a long-lived asset group to be tested for possible impairment, the Company first determines if the estimated undiscounted future pre-tax cash flows expected to result from the use of the asset plus net proceeds expected from disposition of the asset, if any, are less than the carrying value of the asset. When an impairment is identified, the carrying value of the asset is reduced to its estimated fair value based on a discounted cash flow approach or, when available and appropriate, to comparable market values.

Contingencies and Commitments – The Company records accruals for loss contingencies and commitments which are both probable and reasonably estimable. Significant judgment is required to determine both probability and the estimated amount of loss. The Company reviews accruals on a quarterly basis and adjusts, as necessary, to reflect the impact of negotiations, settlements, rulings, advice of legal counsel and other current information. Legal fees are expensed as incurred.

Environmental Matters – The Company accrues for environmental matters when it is probable that a liability has been incurred and the amount of the liability can be reasonably estimated based on current laws and existing technologies. The accruals are adjusted periodically as assessment and remediation efforts progress or as additional technical or legal information becomes available. Accruals for environmental liabilities are included in the Consolidated Balance Sheets as “Accrued expenses and other current liabilities” and “Other liabilities” at undiscounted amounts. Accruals for related insurance or other third-party recoveries for environmental liabilities are recorded when it is probable that a recovery will be realized and are included in the Consolidated Balance Sheets as “Other current assets” and “Other assets.”

Environmental costs are capitalized in instances where the costs extend the life of the property, increase its capacity and/or mitigate or prevent contamination from future operations. Costs related to environmental contamination treatment and cleanup are charged to expense. Estimated future incremental operations, maintenance and management costs directly related to remediation are accrued when such costs are probable and reasonably estimable.

Employee Benefits – Amounts recognized in the Company's Consolidated Financial Statements related to pension and other post-retirement benefits are determined from actuarial valuations. Inherent in such valuations are assumptions including expected return on plan assets, discount rates at which the liabilities could be settled, rates of increase in future compensation levels and mortality rates. These assumptions are updated annually and are disclosed in Note 10, *Pension, Post-Retirement and Post-Employment Plans*, to the Consolidated Financial Statements. Actual results that differ from the assumptions are recorded in "Accumulated other comprehensive loss" within Stockholders' Equity and amortized over future periods and, therefore, affect expense recognized.

The Company considers a number of factors in determining and selecting assumptions for the overall expected long-term rate of return on plan assets. The Company considers the historical long-term return experience of its assets, the current and expected allocation of its plan assets and expected long-term rates of return. Expected long-term rates of return are derived with the assistance of investment advisors. The Company bases its expected allocation of plan assets on a diversified portfolio consisting of domestic and international equity securities, fixed income securities, real estate and alternative asset classes. The measurement date used to determine pension and other post-retirement benefits is December 31, at which time the minimum contribution levels for the following year are determined.

Derivatives – The Company operates internationally and uses certain financial instruments to manage its foreign currency exposures. To designate a derivative for hedge accounting at inception and throughout the hedge period, the Company formally documents the nature and relationships between hedging instrument and hedged item, as well as its risk-management objectives and strategies for undertaking various hedge transactions, and the method of assessing hedge effectiveness. Additionally, for hedges of forecasted transactions, the significant characteristics and expected terms of forecasted transactions are specifically

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identified, and the likelihood of each forecasted transaction occurring is deemed probable. If it is determined that a forecasted transaction will not occur, a gain or loss is recognized in current earnings. Financial instruments qualifying for hedge accounting must maintain a specified level of effectiveness between the hedging instrument and the item being hedged, both at inception and throughout the hedged period. The Company does not engage in trading or other speculative uses of financial instruments. It is the Company's policy to disclose the fair value of derivative instruments that are subject to master netting arrangements on a gross basis in the Consolidated Balance Sheets.

The Company has used, and may use in the future, forward contracts and options to mitigate its exposure to changes in foreign currency exchange rates on third-party and intercompany forecasted transactions. If hedge accounting is applied, the effective portion of unrealized gains and losses associated with forward contracts and the intrinsic value of option contracts are deferred as a component of "Accumulated other comprehensive loss" until the underlying hedged transactions are reported in the Company's Consolidated Statements of Operations. For derivative contracts not designated as hedging instruments, the Company records changes in the net fair value of the such contracts in "Other income (expense), net" in the Consolidated Statements of Operations.

Financial Instruments – The Company's financial instruments consist primarily of cash and cash equivalents, accounts receivable, investments, accounts payable, contingent consideration and debt. The Company believes that the carrying value of the cash and cash equivalents, accounts receivable and accounts payable are representative of their respective fair values because of their short maturities. Available for sale equity investments are carried at fair value. Prior to 2018, changes in net unrealized gains or losses were included in the stockholders' equity section of the Consolidated Balance Sheets as "Accumulated other comprehensive loss." Beginning in the first quarter of 2018, such changes are recorded in the Statement of Operations. See Note 13, *Financial Instruments*, to the Consolidated Financial Statements.

Equity Securities – Equity securities that have readily determinable fair values are classified as available for sale and are carried at fair value. Unrealized holding gains and losses are recorded in the Consolidated Statements of Operations as "Other (expense) income." Equity securities which do not have readily determinable fair values are recorded at cost and are evaluated whenever events or changes in circumstances indicate that the carrying values of such investments may be impaired. Equity securities are included in the Consolidated Balance Sheets as "Other assets."

Foreign Currency Translation – The Company's foreign subsidiaries primarily use their local currency as their functional currency. The assets and liabilities of the Company's foreign subsidiaries are translated into U.S. dollars using foreign currency exchange rates prevailing at the balance sheet dates. Revenue and expense accounts are translated at average foreign currency exchange rates for the periods presented. Cumulative currency translation adjustments are included in the stockholders' equity section of the Consolidated Balance Sheets as "Accumulated other comprehensive loss." Net gains and losses from transactions denominated in currencies other than the functional currency of the entity are included in the Consolidated Statements of Operations as "Foreign exchange loss."

Revenue Recognition – The Company recognizes revenue either upon shipment or delivery of product depending on when it is reasonably assured that both title and the risks and rewards of ownership have been passed on to the customer, and the Company's performance obligations have been fulfilled and collectability is probable. Estimates for sales rebates, incentives and discounts, as well as sales returns and allowances, are accounted for as reductions of revenue when the earnings process is complete. Sales rebates, incentives and discounts are typically earned by customers based on annual sales volume targets. The Company records an estimate for these accruals based on contract terms and its historical experience with similar programs. An estimate for future expected sales returns is recorded based on historical experience with product returns; however, changes to these estimates may be required if the historical data used in the calculation differs from actual experience. Differences between estimated expense and actual costs are typically immaterial and are recognized in earnings in the period such differences are determined. Variable consideration for volume discounts, rebates and returns are recorded as contract liabilities and settled with the customer in accordance with the terms of the applicable contract, typically when program requirements are achieved by the customer.

Most performance obligations relate to contracts with a duration of less than one year, in which the Company has the right to invoice the customer at the time the performance obligation is satisfied for the amount of revenue recognized at that time. Accordingly, the Company has elected the practical expedient available under ASC Topic 606, *Revenue from Contracts with Customers*, not to disclose remaining performance obligations under its contracts. The Company has also elected the practical expedient to expense incremental costs for obtaining contracts with terms of less than one year.

See Note 23, *Segment Information*, to the Consolidated Financial Statements for a disaggregation of net sales by business unit.

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Research and Development— Research and development costs, which primarily relate to internal salaries, are expensed as incurred.

Income Taxes— The Company recognizes deferred tax assets and liabilities based on the differences between the financial statement basis and the tax basis of assets, liabilities, net operating losses and tax credit carryforwards. A valuation allowance is required to be recognized to reduce the recorded deferred tax asset to the amount that will more likely than not be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income by jurisdiction during the periods in which those temporary differences become deductible or when carryforwards can be utilized. The Company considers the scheduled reversal of deferred tax liabilities, projected future taxable income and tax planning strategies in this assessment. If these estimates and related assumptions change in the future, the Company may be required to record additional valuation allowances against its deferred tax assets; resulting in additional income tax expense. Deferred tax assets and liabilities are measured using the enacted tax rates expected to apply to taxable income in the years in which those temporary differences and carryforwards are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date of such change.

The Company is subject to income taxes in the United States and in various states and foreign jurisdictions. Significant judgment is required in evaluating uncertain tax positions and determining provisions for income taxes. The first step in evaluating the tax position for recognition is to determine the amount of evidence that supports a favorable conclusion for the tax position upon audit. In order to recognize the tax position, the Company must determine whether it is more likely than not that the position is sustainable. The final evaluation step is to measure the tax benefit as the largest amount that has a more than 50% chance of being realized upon final settlement. Although the Company believes that the positions taken on income tax matters are reasonable, it establishes tax reserves in recognition that various taxing authorities may challenge certain of those positions taken; potentially resulting in additional tax liabilities.

Stock-Based Compensation Plans — Stock-based compensation is recorded in the Consolidated Statements of Operations as "Selling, technical, general and administrative" expense over the requisite service period based on the estimated grant-date fair value of the awards. The fair value of RSU awards is determined using Monte Carlo simulations for market-based RSU awards and the closing price of Element Solutions' common stock on the date of grant for all other RSU awards. The fair value of stock options is determined using the Black-Scholes option pricing model. Inputs in the model include assumptions related to stock price volatility, award terms and judgments as to whether performance targets will be achieved.

Compensation costs for awards with performance conditions are only recognized if and when it becomes probable that the performance conditions will be achieved. The probability of vesting is reassessed at the end of each reporting period and the compensation costs are adjusted accordingly, with the cumulative effect of such a change on current and prior periods being recognized in compensation cost in the period of the change. Compensation costs for stock options and market-based RSUs are recorded ratably over the vesting term of the options, effected for forfeitures as they occur.

Earnings (Loss) Per Common Share — Basic earnings (loss) per common share excludes dilution and is computed by dividing net income (loss) attributable to common stockholders by the weighted-average number of common shares outstanding during the period. Diluted earnings (loss) per common share assumes the issuance of all potentially dilutive share equivalents using the if-converted or treasury stock methods, provided that the effects of which are not anti-dilutive. For stock options and RSUs, it is assumed that the proceeds will be used to buy back shares. For stock options, such proceeds equal the average unrecognized compensation plus the assumed exercise of weighted average number of options outstanding. For unvested RSUs, the assumed proceeds equal the average unrecognized compensation expense.

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Fair Value Measurements - The Company determines 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. Inputs used in the valuation techniques to derive fair values are classified based on a three-level hierarchy. The basis for fair value measurements for each level within the hierarchy is described below, with Level 1 having the highest priority and Level 3 having the lowest. The three levels of the fair value hierarchy are as follows:

- Level 1 – inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities.
- Level 2 – inputs are quoted prices for similar instruments in active markets; quoted prices for identical or similar instruments in non-active markets; and model-derived valuations whose inputs are observable or whose significant valuation drivers are observable.
- Level 3 – inputs to valuation models are unobservable and/or reflect the Company's market assumptions.

The fair value hierarchy is based on maximizing the use of observable inputs and minimizing the use of unobservable inputs when measuring fair value. Classification within the fair value hierarchy is based on the lowest level of input that is significant to the fair value measurement. The Company transfers the fair value of an asset or liability between levels of the fair value hierarchy at the end of the reporting period during which a significant change in the inputs used to determine the fair value has occurred.

NAV Practical Expedient is the measure of fair value using the net asset value, or NAV, per share (or its equivalent) as an alternative to the fair value hierarchy discussed above.

3. RECENT ACCOUNTING PRONOUNCEMENTS

Recently Adopted Accounting Pronouncements

Revenue from Contracts with Customers (Topic 606) - In May 2014, the FASB issued ASU No. 2014-09, "*Revenue from Contracts with Customers*," as a new FASB ASC Topic 606. The core principle of the guidance is that a company should recognize revenue to depict the transfer of promised goods or services in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods and services. The new guidance requires expanded disclosure of qualitative and quantitative information about the Company's revenues from contracts with customers.

The new guidance did not have a material impact on the Company's financial statements since the timing and pattern of revenue recognition predominantly continued to be recognized as the Company's performance obligation to ship or deliver its products was completed and the transfer of control passes to the customer in accordance with the new standard. The Company adopted the new guidance effective January 1, 2018 using the modified retrospective method. See Note 2, *Summary of Significant Accounting Policies*, to the Consolidated Financial Statements for additional information.

Statement of Cash Flows (Topic 230) - In August 2016, the FASB issued ASU No. 2016-15, "*Classification of Certain Cash Receipts and Cash Payments*." This ASU was issued to reduce diversity in practice with respect to how certain cash receipts and cash payments are classified and presented in the statement of cash flows. The Company adopted the new guidance effective January 1, 2018 and retrospectively reclassified \$8.8 million and \$8.4 million of cash payments for debt prepayments and debt extinguishment costs from "Cash flows from operating activities" to "Cash flows from financing activities" in the Consolidated Statement of Cash Flows for the years ended December 31, 2017 and 2016, respectively.

Recently Issued Accounting Pronouncements Not Yet Adopted

Leases (Topic 842) - In February 2016, the FASB issued ASU No. 2016-02, "*Leases*." This ASU requires lessees to recognize most leases in their balance sheets, but to record expenses on their income statements in a manner similar to current accounting. For lessors, the guidance modifies the classification criteria and the accounting for sales-type and direct financing leases. The two permitted adoption methods under this ASU are the modified retrospective approach, which requires application of the guidance in all comparative periods presented, and the cumulative-effect-adjustment approach, which allows for application at the adoption date without restating prior periods.

The Company has substantially completed the implementation of its new software system and corresponding controls for administering its leases and facilitating compliance with the ASU. Upon adoption, the Company is expected to recognize right of use (ROU) assets and lease liabilities of less than \$100 million to reflect the present value of remaining lease payments under

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existing lease arrangements. While the recognition of these ROU assets and lease liabilities will impact the Company's consolidated balance sheet, it is not expected to have a material impact on its consolidated statement of operations or cash flows.

Derivatives and Hedging (Topic 815) - In August 2017, the FASB issued ASU No. 2017-12, “*Targeted Improvements to Accounting for Hedging Activities*.” This ASU improves the financial reporting of hedge relationships by updating hedging designation and measurement guidance. The update also simplifies the application of existing hedge accounting guidance related to assessing hedge effectiveness. The guidance is effective prospectively as of January 1, 2019, and is applied to contracts in existence at the date of adoption, with its effects required to be reflected as of January 1 of the year of adoption. The Company believes the new guidance, upon adoption, will not have a material impact on its financial statements based on the derivative contracts in place at December 31, 2018.

4. ACQUISITIONS

OMG Malaysia Acquisition

On January 31, 2016, Element Solutions completed the OMG Malaysia Acquisition for approximately \$124 million, net of acquired cash and closing working capital adjustments. The Company acquired OMG Malaysia by issuing a note payable for \$125 million which was offset against a note receivable from the seller of the same amount.

During the year of acquisition, net sales and net income contributed by the OMG Malaysia Acquisition totaled \$30.9 million and \$3.2 million, respectively. As the integration continued to progress, discrete results reported by the acquired company have been impacted by the integration initiatives and have become less comparable to prior periods. Therefore, it is impracticable to report discrete acquisition-level results beyond the initial year of acquisition.

5. DISCONTINUED OPERATIONS

On July 20, 2018, the Company agreed to sell to UPL 100% of the issued and outstanding shares of common stock of Arysta and its subsidiaries pursuant to the terms and conditions of the Arysta Sale Agreement. The Arysta Sale was completed on January 31, 2019 for an aggregate purchase price of approximately \$4.20 billion in cash, subject to certain post-closing adjustments relating to, among other things, cash, indebtedness and working capital as of the closing date. The Company expects the Arysta Sale to maximize long-term value for its stockholders by enabling investors to focus on its specific and differentiated high-quality businesses that serve the specialty chemicals industry.

The Agricultural Solutions business was previously its own reportable segment and has been presented for all periods as discontinued operations in the Company's Consolidated Financial Statements as the Arysta Sale represented a significant strategic shift and was determined to have a major effect on the Company's operations and financial results. Corporate costs previously allocated to the Agricultural Solutions segment have been reallocated to the remaining segments for all periods presented as these costs were not clearly identifiable as costs of the Agricultural Solutions segment.

The Company recorded an estimated asset impairment loss of \$450 million (\$74.0 million in the fourth quarter) as the carrying value of its discontinued operations exceeded the estimated fair value less costs to sell, which primarily reflected the recognition of foreign currency translation adjustments that have been recorded in "Accumulated other comprehensive loss" within Stockholders' Equity. This charge reflects Element Solutions' best estimate of the impairment loss and the actual loss on sale will be dependent on a number of factors, including foreign exchange rates on the closing date of the Arysta Sale and other closing adjustments.

In connection with the Arysta Sale, the Company agreed to retain certain liabilities associated with legal and tax proceedings, primarily related to an Arysta subsidiary in Brazil. The Company does not expect to incur a material loss as a result of these proceedings. However, the resolutions of these matters may take several years and, to the extent not covered by insurance, may adversely impact our financial position or results of operations.

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The following table details the components comprising Net (loss) income from the Company's discontinued operations attributable to common stockholders:

<i>(amounts in millions)</i>	Year Ended December 31,		
	2018	2017	2016
Net sales	\$ 1,991.8	\$ 1,897.3	1,815.8
Cost of sales	(1,190.3)	(1,122.1)	(1,085.4)
Selling, technical, general and administrative	(466.4)	(531.4)	(524.7)
Research and development	(52.4)	(52.0)	(39.4)
Goodwill impairment ⁽¹⁾	—	(160.0)	—
Impairment loss	(450.0)	—	—
Operating (loss) profit	(167.3)	31.8	166.3
Other income (expense) items	11.5	(60.4)	17.4
(Loss) income from discontinued operations, before income taxes	(155.8)	(28.6)	183.7
Income tax expense	(87.1)	(75.2)	(69.9)
(Loss) income from discontinued operations, net of tax	(242.9)	(103.8)	113.8
Net (income) loss from discontinued operations attributable to the non-controlling interests	(3.0)	1.7	(2.6)
Net (loss) income from discontinued operations attributable to common stockholders	\$ (245.9)	\$ (102.1)	\$ 111.2

⁽¹⁾ In 2017, the Company recorded an impairment charge in the former Agricultural Solutions segment of \$160 million related to its Agro Business reporting unit. This charge was driven by the impact of a delayed agricultural market recovery, which resulted in lower expectations for future profitability and cash flows as compared to the expectations of the 2016 annual goodwill impairment test.

The following table details supplemental cash flow disclosure information related to Company's discontinued operations:

<i>(amounts in millions)</i>	Year Ended December 31,		
	2018	2017	2016
Cash paid for interest	\$ 5.4	\$ 7.1	\$ 11.3
Cash paid for income taxes	\$ 69.5	\$ 71.1	\$ 58.6

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The carrying value of major classes of assets and liabilities related to the Company's discontinued operations at December 31, 2018 and 2017 were as follows:

	December 31,	
	2018	2017
Assets		
Cash and cash equivalents	\$ 177.8	\$ 219.4
Accounts receivable, net	919.4	740.5
Inventories	369.1	304.0
Other current assets	155.0	168.2
Current assets of discontinued operations	\$ 1,621.3	\$ 1,432.1
Property, plant and equipment, net	\$ 172.0	\$ 164.9
Goodwill	1,816.9	1,948.5
Intangible assets, net	1,797.7	1,976.5
Other assets ⁽¹⁾	(374.2)	78.7
Non-current assets of discontinued operations	\$ 3,412.4	\$ 4,168.6
Liabilities		
Accounts payable	\$ 365.7	\$ 350.6
Current installments of revolving credit facilities	52.5	28.8
Accrued expenses and other current liabilities	408.6	385.5
Current liabilities of discontinued operations	\$ 826.8	\$ 764.9
Deferred income taxes	\$ 369.9	\$ 409.6
Other liabilities	46.3	63.0
Non-current liabilities of discontinued operations	\$ 416.2	\$ 472.6

⁽¹⁾ Includes an estimated impairment loss of \$450.0 million on discontinued operations at December 31, 2018.

6. INVENTORIES

The major components of inventory, on a net basis, were as follows:

	December 31,	
	2018	2017
<i>(\$ amounts in millions)</i>		
Finished goods	\$ 109.4	\$ 107.6
Work in process	15.3	14.5
Raw materials and supplies	63.4	64.3
Total inventories	\$ 188.1	\$ 186.4

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7. PROPERTY, PLANT AND EQUIPMENT

The major components of property, plant and equipment were as follows:

<i>(\$ amounts in millions)</i>	December 31,	
	2018	2017
Land and leasehold improvements	\$ 67.8	\$ 68.9
Buildings and improvements	101.0	94.6
Machinery, equipment, fixtures and software	207.3	195.6
Construction in process	14.9	18.1
Total property, plant and equipment	391.0	377.2
Accumulated depreciation	(124.1)	(89.8)
Property, plant and equipment, net	\$ 266.9	\$ 287.4

For 2018, 2017 and 2016, the Company recorded depreciation expense of \$44.6 million, \$46.4 million and \$46.6 million, respectively.

8. GOODWILL AND INTANGIBLE ASSETS

Goodwill

The changes in the carrying amount of goodwill by segment were as follows:

<i>(\$ amounts in millions)</i>	Electronics	Industrial & Specialty	Total
Balance, December 31, 2016			
Goodwill, gross	\$ 1,188.0	\$ 991.0	\$ 2,179.0
Accumulated impairment losses ⁽¹⁾	—	(46.6)	(46.6)
	1,188.0	944.4	2,132.4
Foreign currency translation and other	73.9	46.3	120.2
Balance, December 31, 2017			
Goodwill, gross	1,261.9	1,037.3	2,299.2
Accumulated impairment losses	—	(46.6)	(46.6)
	1,261.9	990.7	2,252.6
Addition from acquisitions ⁽²⁾	11.1	—	11.1
Foreign currency translation and other	(46.3)	(34.8)	(81.1)
Balance, December 31, 2018			
Goodwill, gross	1,226.7	1,002.5	2,229.2
Accumulated impairment losses	—	(46.6)	(46.6)
	\$ 1,226.7	\$ 955.9	\$ 2,182.6

⁽¹⁾ During 2016, a goodwill impairment charge totaling \$46.6 million was recorded related to Industrial & Specialty's Energy Solutions reporting unit, resulting from weak oil prices. The Company experienced the impact on its results, which slightly lagged the overall industry, as this ultimately caused the industry to depress its overall investments. The fair value was determined using an income approach derived from a discounted cash flow model.

⁽²⁾ In May 2018, the Company completed the acquisition of Hi-Tech Korea Co., Ltd. The impact of this acquisition on the Company's results of operations was not material.

No impairments of goodwill were identified during the years ended December 31, 2018 and 2017.

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Indefinite-Lived Intangible Assets

The carrying value of indefinite-lived intangible assets, other than goodwill, which consists solely of trade names, was \$150 million and \$153 million at December 31, 2018 and 2017, respectively. The Company found no indications of impairment related to its indefinite-lived intangible assets as a result of its annual impairment review.

Finite-Lived Intangible Assets

Intangible assets subject to amortization were as follows:

<i>(\$ amounts in millions)</i>	December 31, 2018			December 31, 2017		
	Gross Carrying Amount	Accumulated Amortization	Net Book Value	Gross Carrying Amount	Accumulated Amortization	Net Book Value
Customer lists	\$ 927.8	\$ (283.2)	\$ 644.6	\$ 952.0	\$ (222.5)	\$ 729.5
Developed technology	381.3	(155.6)	225.7	393.0	(119.9)	273.1
Trade names	5.9	(1.6)	4.3	6.1	(1.1)	5.0
Non-compete agreement	1.5	(1.3)	0.2	1.7	(1.1)	0.6
Total	<u>\$ 1,316.5</u>	<u>\$ (441.7)</u>	<u>\$ 874.8</u>	<u>\$ 1,352.8</u>	<u>\$ (344.6)</u>	<u>\$ 1,008.2</u>

For 2018, 2017, and 2016, the Company recorded amortization expense on intangible assets of \$112 million, \$110 million and \$109 million, respectively.

Estimated future amortization of intangible assets for each of the next five years is as follows:

<i>(\$ amounts in millions)</i>	Amortization Expense
2019	\$ 110.0
2020	108.9
2021	102.2
2022	89.2
2023	87.0

9. LONG-TERM COMPENSATION PLANS

In June 2014, the Company's stockholders adopted the 2013 Plan, which is administered by the compensation committee of the Board, except as otherwise expressly provided in the 2013 Plan. The Board approved a maximum of 15,500,000 shares of common stock, which were reserved and made available for issuance under the 2013 Plan.

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For 2018, 2017 and 2016, compensation expense associated with the Company's long-term compensation plans was as follows:

(\$ amounts in millions)	Year Ended December 31,		
	2018	2017	2016
Equity classified RSUs	\$ 13.9	\$ 8.3	\$ 5.4
Liability classified RSUs	0.7	0.6	0.4
Stock options	0.8	0.7	0.4
Compensation expense from continuing operations	15.4	9.6	6.2
Compensation expense from discontinued operations	3.9	2.2	1.1
Total	\$ 19.3	\$ 11.8	\$ 7.3
Unrecognized compensation expense for awards expected to vest			
Continuing operations	14.7		
Discontinued operations	3.6		
Weighted average remaining vesting period (months)	13		

At December 31, 2018, a total of 1,484,776 shares of common stock had been issued, and 3,890,643 RSUs and stock options were outstanding under the 2013 Plan.

	Total	RSUs		Stock Options ⁽¹⁾
		Equity Classified	Liability Classified	
Outstanding at December 31, 2017	3,675,726	2,623,851	319,678	732,197
Granted	1,581,444	1,581,444	—	—
Exercised/Issued	(988,573)	(968,148)	—	(20,425)
Cancelled	(198,313)	(23,313)	—	(175,000)
Forfeited	(179,641)	(179,641)	—	—
Outstanding at December 31, 2018	3,890,643	3,034,193	319,678	536,772

⁽¹⁾ Beginning balance includes 175,000 stock options issued outside of the 2013 Plan, which expired without being exercised in 2018.

The total fair value of RSUs which vested during 2018, 2017 and 2016 was \$9.9 million, \$1.4 million and \$0.1 million respectively, based on vesting date market prices.

Equity Classified RSUs

The Company granted the following equity classified RSUs under the 2013 Plan:

Year of Issuance:	RSUs	Weighted average grant date fair value	Weighted average vesting period (months)
2018	1,581,444	\$ 10.35	26
2017	1,117,719	\$ 16.08	31
2016	1,754,868	\$ 10.85	34

Certain of the RSUs granted during the period contain performance vesting conditions in addition to a service vesting condition. RSUs granted with service or performance vesting conditions were valued at the grant date stock price. Certain of the RSUs contain a market vesting condition based on the performance of the Company's common stock relative to the S&P MidCap 400. The grant date fair value of these RSUs was determined using a Monte Carlo simulation. Certain of the RSUs with performance or market vesting conditions also contain provisions for additional share awards in the event certain performance or market conditions are met at the end of certain applicable measurement periods. These conditions are generally based on Adjusted EBITDA, return on invested capital ("ROIC") or total stockholder return ("TSR") targets.

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The following table provides the range of assumptions used in valuing RSUs containing market vesting conditions for the years ended December 31, 2017 and 2016, as there were no RSUs containing market vesting conditions granted in 2018:

	2017	2016
Weighted average expected term (years) ⁽¹⁾	3.00	3.00
Expected volatility ⁽²⁾	52.1%	53.0%
Risk-free rate ⁽³⁾	1.50%	1.05%

⁽¹⁾ Weighted average expected term is calculated based on the award vesting period.

⁽²⁾ Expected volatility is calculated based on a blend of the implied and historical equity volatility of an index of comparable companies over a period equal to the expected term.

⁽³⁾ Risk-free rate of return is based on an interpolation of U.S. Treasury rates to reflect an expected term of three years at the date of grant.

At December 31, 2018, the following equity classified RSUs were outstanding:

Vesting Conditions:	December 31, 2018		
	Outstanding	Weighted average remaining vesting period (months)	Potential additional awards
Service-based	1,002,085	6	—
Performance-based	1,482,846	18	1,351,323
Market-based	549,262	10	1,121,093
Total	3,034,193	13	2,472,416

For all equity classified RSUs, shares are issued immediately upon satisfaction of vesting conditions.

Liability Classified RSUs

During 2014, the Company granted to certain employees RSUs which vest on December 31, 2020. These RSUs are subject to an Adjusted EBITDA performance condition and share price market condition. Additionally, the number of shares of common stock to be issued was limited to a maximum cash value, requiring these awards to be classified as liabilities. Compensation expense was calculated based on a market value that is remeasured each reporting period.

Stock Options

The Company granted the following non-qualified stock options under the 2013 Plan:

Year of Issuance:	Stock Options	Weighted average strike price per share	Weighted average grant date fair value per share
2017	256,202	\$ 13.30	\$ 6.05
2016	390,198	\$ 8.05	\$ 4.35

Stock options vest ratably over a three-year period and have contractual lives of ten years from the grant date.

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The fair value of the grants is calculated using the Black-Scholes option pricing model at the grant date. The following table provides the range of assumptions used in valuing stock options for the years ended December 31, 2017 and 2016, as there were no stock options granted in 2018:

	Year Ended December 31,	
	2017	2016
Weighted average expected term (years) ⁽¹⁾	6.0	6.0
Expected volatility ⁽²⁾	45.0%	53.0%
Risk-free rate ⁽³⁾	2.09%	1.52% to 1.56%
Expected dividend rate	—%	—%

⁽¹⁾ *Weighted average expected term is calculated based on the simplified method for plain vanilla options.*

⁽²⁾ *Expected volatility is calculated based on a blend of the implied and historical equity volatility of an index of comparable companies over a period equal to the expected term.*

⁽³⁾ *Risk-free rate of return is based on an interpolation of U.S. Treasury rates to reflect an expected term of six years at the date of grant.*

At December 31, 2018, there were 75,070 outstanding stock options with an exercise price of \$13.30, which were vested and out-of-the-money, 207,708 outstanding stock options which were vested and in-the-money, with an aggregate intrinsic value of \$0.5 million, and 253,994 outstanding stock options which were unvested, with an aggregate intrinsic value of \$0.2 million.

Subsequent Event

On January 30, 2019, the Compensation Committee granted to certain key executives 2.2 million performance-based RSUs with an aggregate grant date fair value of \$24.6 million which vesting is subject to the achievement by the Company of a certain performance target in any fiscal year ending on or before December 31, 2022, and continuous service. The achievement of this performance target is not probable at this time.

10. PENSION, POST-RETIREMENT AND POST-EMPLOYMENT PLANS

For 2018, 2017 and 2016, the net periodic cost for all plans totaled \$0.1 million, \$11.5 million and \$3.1 million, respectively.

Domestic Defined Benefit Pension Plan

The domestic non-contributory defined benefit pension plan is closed to new participants. Pursuant to this plan, retirement benefits are provided based upon years of service and compensation levels. An investment committee, appointed by the Board, manages the plan and its assets in accordance with the plan's investment policies. The Company's investment policies incorporate an asset allocation strategy that emphasizes the long-term growth of capital and acceptable asset volatility as long as it is consistent with the volatility of the relevant market indexes. The investment policies attempt to achieve a mix of approximately 25% of plan investments for long-term growth, 74% for liability-matching assets and 1% for near-term benefit payments. The Company believes this strategy is consistent with the long-term nature of plan liabilities and ultimate cash needs of the plans. Plan assets consist primarily of listed stocks, equity security funds, short-term Treasury bond mutual funds and limited partnership interests. The weighted average asset allocation of this pension plan was 72% fixed income mutual fund holdings, 14% equity securities, 11% limited partnership interests and 3% cash at December 31, 2018.

Actual pension expense and future contributions required to fund this pension plan will depend on future investment performance, changes in future discount rates, the level of Company contributions and various other factors related to the populations participating in this pension plan. The Company evaluates the plan's actuarial assumptions on an annual basis, including the expected long-term rate of return on assets and discount rate, and adjusts the assumptions, as necessary, to ensure proper funding levels are maintained so that the plan can meet obligations as they become due.

At December 31, 2018 and 2017, the projected benefit obligation for this pension plan totaled \$199 million and \$218 million, respectively.

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Supplemental Executive Retirement Plans

The Company sponsors SERPs that entitle certain employees to the difference between the benefits actually paid to them and the benefits they would have received under the pension plan described above were it not for certain restrictions imposed by the Internal Revenue Service Code. Covered compensation under the SERPs includes an employee's annual salary and bonus. At December 31, 2018 and 2017, the projected benefit obligation for the SERPs totaled \$7.3 million and \$8.5 million, respectively.

Foreign Pension Plans

The Company's international benefit plans are included in the tables presented below. These plans are not significant, individually or in the aggregate, to the Company's consolidated financial position, results of operations or cash flows. At December 31, 2018 and 2017, the projected benefit obligation for these foreign pension plans totaled \$23.3 million and \$23.0 million, respectively.

Certain other foreign subsidiaries maintain benefit plans that are consistent with statutory practices but do not meet the criteria for pension or post-retirement accounting and have therefore been excluded from the tables presented below. These benefit plans had obligation balances of \$1.1 million and \$3.1 million at December 31, 2018 and 2017, respectively, and were recorded in the Consolidated Balance Sheets as "Pension and post-retirement benefits."

The Company's U.K. Pension Plan, which was comprised of a defined benefit plan and a defined contribution plan providing retirement and death benefit plans to employees in the U.K., was transferred to Pension Insurance Corporation plc at December 31, 2017, in accordance with an agreement entered into by the plan trustees in October 2014, and the related plan liabilities were settled. The Company reclassified \$9.8 million from "Accumulated other comprehensive loss" to reflect the settlement of the pension obligation in 2017.

Domestic Defined Benefit Post-Retirement Medical and Dental Plan

The Company sponsors defined benefit post-retirement medical and dental plans that covers all of its MacDermid domestic full-time employees, hired prior to April 1, 1997, who retire after age 55, with at least ten to twenty years of service (depending upon the date of hire). Eligible employees receive a subsidy from the Company towards the purchase of their retiree medical benefits based on the date of retirement. The annual increase in the Company's costs for post-retirement medical benefits is subject to a limit of 5%. Retirees are required to contribute to the plan costs in excess of their respective Company limits in addition to their other required contributions. The projected benefit obligation for the post-retirement plan at December 31, 2018 comprised 37% retirees, 35% fully eligible active participants and 28% other participants. The actuarial determination of the Company's accumulated benefit obligation associated with the plan for post-retirement medical benefits assumes annual cost increases of 2% and 4%, based on the date of retirement. As a result of the above mentioned plan limits, the effect of an increase in the healthcare cost trend on the Company's accumulated benefit obligation and the service and interest costs associated therewith is limited to an immaterial amount.

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The components of net periodic (benefit)/cost of the Domestic and Foreign Pension Plans and Post-Retirement Medical Benefits were as follows:

	Year Ended December 31,					
	2018		2017		2016	
	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign
<i>(\$ amounts in millions)</i>						
Pension and SERP Benefits						
Service cost	\$ —	\$ 1.2	\$ —	\$ 1.6	\$ —	\$ 1.4
Interest cost on the projected benefit obligation	8.1	0.3	8.8	1.4	10.1	2.3
Expected return on plan assets	(10.4)	(0.1)	(10.1)	(1.3)	(11.6)	(2.0)
Amortization of prior service cost	—	—	—	0.1	—	0.6
Amortization of actuarial net loss	—	—	—	0.1	—	0.2
Plan curtailment	0.1	—	—	0.3	—	(0.1)
Plan settlement	0.2	0.1	—	10.1	1.7	0.1
Net periodic (benefit) cost	\$ (2.0)	\$ 1.5	\$ (1.3)	\$ 12.3	\$ 0.2	\$ 2.5
Post-retirement Medical Benefits						
Service cost	\$ —	\$ 0.1	\$ —	\$ —	\$ —	\$ —
Interest cost on the projected benefit obligation	0.4	0.1	0.4	0.1	0.4	—
Net periodic cost	\$ 0.4	\$ 0.2	\$ 0.4	\$ 0.1	\$ 0.4	\$ —

The weighted average key assumptions used to determine the net periodic (benefit)/cost of the Domestic and Foreign Pension Plans are as follows:

	Year Ended December 31,					
	2018		2017		2016	
	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign
Pension and SERP Benefits						
Discount rate	3.7%	1.4%	4.2%	1.6%	4.6%	2.3%
Rate of compensation increase	3.5%	3.4%	3.5%	3.2%	3.5%	3.2%
Long-term rate of return on assets	5.4%	1.8%	5.9%	1.7%	6.5%	2.5%
Post-retirement Medical Benefits						
Discount rate	3.7%	9.9%	4.2%	12.2%	4.4%	14.0%

The expected long-term rate of return on assets assumption is developed with reference to historical returns, forward-looking return expectations, the Domestic and Foreign Pension Plans' investment allocations and peer comparisons.

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The following tables summarize changes in benefit obligation, plan assets and funded status of the Company's plans:

(\$ amounts in millions)	Pension and SERP Benefits				Post-retirement Medical Benefits			
	2018		2017		2018		2017	
	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign
Change in Projected Benefit Obligation:								
Beginning of period balance	\$ 226.2	\$ 23.0	\$ 213.5	\$ 92.0	\$ 9.7	\$ 0.9	\$ 9.6	\$ 0.6
Additions	—	2.0	—	0.6	—	—	—	—
Service cost	—	1.2	—	1.6	—	0.1	—	—
Interest cost	8.1	0.3	8.8	1.4	0.4	0.1	0.4	0.1
Actuarial (gain) loss due to assumption change	(15.4)	(0.5)	—	(1.6)	(1.1)	0.1	—	0.1
Actuarial loss (gain) due to plan experience	(1.7)	0.2	13.8	0.7	0.5	0.3	0.2	0.1
Benefits and expenses paid	(10.3)	(0.9)	(9.9)	(5.7)	(0.5)	—	(0.5)	—
Settlement	(0.7)	(1.1)	—	(71.7)	—	—	—	—
Foreign currency translation	—	(0.9)	—	5.7	—	(0.2)	—	—
End of period balance	\$ 206.2	\$ 23.3	\$ 226.2	\$ 23.0	\$ 9.0	\$ 1.3	\$ 9.7	\$ 0.9
Change in Plan Assets:								
Beginning of period balance	\$ 199.6	\$ 7.7	\$ 176.6	\$ 79.9	\$ —	\$ —	\$ —	\$ —
Additions	—	—	—	0.5	—	—	—	—
Actual return on plan assets, net of expenses	(5.1)	0.2	29.8	—	—	—	—	—
Employer contributions	1.2	(1.7)	3.1	0.7	0.5	—	0.5	—
Benefits paid	(10.3)	(0.9)	(9.9)	(5.7)	(0.5)	—	(0.5)	—
Settlement	(0.7)	(0.8)	—	(71.7)	—	—	—	—
Foreign currency translation	—	(0.2)	—	4.0	—	—	—	—
End of period balance	\$ 184.7	\$ 4.3	\$ 199.6	\$ 7.7	\$ —	\$ —	\$ —	\$ —
Funded Status								
Funded status of plan	\$ (21.5)	\$ (19.0)	\$ (26.6)	\$ (15.3)	\$ (9.0)	\$ (1.3)	\$ (9.7)	\$ (0.9)
Supplemental Information:								
Accumulated benefit obligation	\$ 196.8	\$ 20.1	\$ 214.9	\$ 19.5	\$ 9.0	\$ 1.3	\$ 9.7	\$ 0.9
Plans with Accumulated Benefit Obligation in excess of Plan Assets:								
Accumulated benefit obligation	\$ 196.8	\$ 20.0	\$ 214.9	\$ 19.5	\$ —	\$ —	\$ 9.7	\$ 0.9
Fair value plan assets	\$ 184.7	\$ 4.1	\$ 199.6	\$ 4.1	\$ —	\$ —	\$ —	\$ —
Plans with Projected Benefit Obligation in excess of Plan Assets:								
Projected benefit obligation	\$ 206.2	\$ 23.1	\$ 226.2	\$ 23.0	\$ —	\$ —	\$ 9.7	\$ 0.9
Fair value plan assets	\$ 184.7	\$ 4.1	\$ 199.6	\$ 4.1	\$ —	\$ —	\$ —	\$ —

Weighted average key assumptions used to determine the benefit obligations in the actuarial valuations of the pension and post-retirement benefit liabilities are as follows:

	Pension and SERP Benefits				Post-retirement Medical Benefits			
	2018		2017		2018		2017	
	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign
Discount rate	4.3%	1.5%	3.7%	1.3%	4.3%	9.2%	3.7%	9.9%
Rate of compensation increase	3.5%	3.4%	3.5%	3.3%	N/A	N/A	N/A	N/A

(N/A) Not applicable as compensation rates are not used in the determination of benefit obligations under the post-retirement benefit plans.

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Amounts recognized in the Consolidated Balance Sheets and "Accumulated other comprehensive loss" consist of the following:

<i>(\$ amounts in millions)</i>	Pension and SERP Benefits				Post-retirement Medical Benefits			
	2018		2017		2018		2017	
	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign
Balance Sheet								
Other assets	\$ —	\$ —	\$ —	\$ 3.6	\$ —	\$ —	\$ —	\$ —
Accrued expenses and other current liabilities	0.5	1.0	1.1	0.7	0.7	—	0.6	—
Pension and post-retirement benefits	21.0	18.0	25.5	18.2	8.3	1.3	9.1	0.9
Accumulated Other Comprehensive Loss								
Net actuarial loss	\$ (5.1)	\$ (1.8)	\$ (7.0)	\$ (2.4)	\$ (0.3)	\$ (0.8)	\$ (0.8)	\$ (0.4)
Prior service costs	—	—	(0.1)	—	N/A	N/A	N/A	N/A

The following table presents the fair value of plan assets:

<i>(\$ amounts in millions)</i>	Classification	December 31,	
		2018	2017
Asset Category			
Domestic equities	Level 1	\$ 22.0	\$ 31.8
Foreign equities	Level 1	3.9	18.3
Mutual funds holding domestic securities	Level 1	—	4.0
U.S. Treasury bonds	Level 2	21.5	14.6
Mutual funds holding U.S. Treasury Securities	Level 1	19.0	9.2
Mutual funds holding fixed income securities	Level 1	96.3	74.6
Cash and cash equivalents	Level 1	6.2	10.1
Sub-Total		168.9	162.6
Assets using net asset value (or NAV) as a practical expedient		20.1	44.7
Total		\$ 189.0	\$ 207.3

Assets using NAV as a practical expedient include limited partnership interests and commingled funds that are not actively traded or whose underlying investments are valued using observable marketplace inputs.

At December 31, 2018, expected future benefit payments related to the Company's defined benefit plans were as follows:

<i>(\$ amounts in millions)</i>	Pension and SERP Benefits		Post-retirement Medical Benefits	Total
	Domestic	Foreign		
2019	\$ 12.1	\$ 1.7	\$ 0.6	\$ 14.4
2020	12.2	1.4	0.6	14.2
2021	12.1	1.6	0.6	14.3
2022	12.6	1.4	0.6	14.6
2023	12.7	1.8	0.6	15.1
Subsequent five years	64.3	7.6	3.0	74.9
Total	\$ 126.0	\$ 15.5	\$ 6.0	\$ 147.5

The measurement date used to determine pension and other post-retirement medical benefits was December 31, 2018, at which time the minimum contribution level for the following year was determined. The Company is not required to make any plan contributions in 2019.

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11. INCOME TAXES

Tax Reform

On December 22, 2017, the TCJA was enacted into law in the United States. The legislation contains several key tax provisions including the reduction of the corporate income tax rate to 21% effective January 1, 2018 and a one-time transition tax on foreign earnings which have not previously been subject to tax in the United States, as well as a variety of other changes, including limitation of the tax deductibility of interest expense, limitations for the deduction for net operating losses, new taxes on certain foreign-sourced earnings and modification or repeal of many business deductions and credits.

The SEC staff issued Staff Accounting Bulletin 118 (“SAB 118”) to address the application of GAAP in situations where a registrant does not have the necessary information available, prepared or analyzed (including computations) in reasonable detail to complete the accounting for certain income tax effects of the TCJA. The Company applied the guidance in SAB 118 when accounting for the enactment-date effects of the TCJA in 2017 and throughout 2018. During the fourth quarter of 2018, the Company finalized the accounting for the enactment-date effects of the TCJA.

At December 31, 2017, the Company recorded a provisional income tax benefit for continuing operations totaling \$46.3 million as a result of remeasuring U.S. federal deferred taxes for the change in statutory tax rate and a partial release of the U.S. federal valuation allowance due to changes in the carryforward period and limitation on the utilization of future net operating losses. The Company completed its analysis of the impact of the TCJA enactment-date effects on the U.S. federal valuation allowance and recorded \$55.5 million of additional benefit for continuing operations in 2018, primarily due to the expected impact of global intangible low-taxed income (GILTI). To make this determination, the Company has adopted the tax law ordering approach for determining the impact of GILTI on the realizability of U.S. deferred tax assets.

The one-time transition tax is based on the Company’s total post-1986 earnings and profits (E&P), the tax on which the Company previously deferred from U.S. income taxes under U.S. law. At December 31, 2017, the Company believed foreign tax credits would be utilized to offset the one-time transition tax. Significant technical analysis was required to further substantiate the foreign earnings subject to the one-time transition tax as well as the utilization of foreign tax credits. Upon further analysis of the TCJA and notices or regulations issued and proposed by various regulatory agencies, the Company finalized its calculations of the transition tax and increased its tax expense for continuing operations by \$13.7 million in the fourth quarter of 2018.

The TCJA subjects a U.S. shareholder to tax on GILTI earned by foreign subsidiaries for which an entity can make an accounting policy election to either recognize deferred taxes for temporary differences expected to reverse as GILTI in future years or provide for the tax expense related to GILTI in the year the tax is incurred. At December 31, 2017, the Company was still evaluating the effects of the GILTI provisions and as such, recorded no GILTI-related amounts and had not yet determined its accounting policy election. In 2018, the Company elected to account for GILTI in the year the tax is incurred.

Income Taxes

(Loss) income before income taxes and non-controlling interests from continuing operations was as follows:

<i>(\$ amounts in millions)</i>	Year Ended December 31,		
	2018	2017	2016
Domestic	\$ (214.7)	\$ (362.3)	\$ (260.3)
Foreign	161.5	101.9	28.5
Total	\$ (53.2)	\$ (260.4)	\$ (231.8)

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Income tax expense (benefit) from continuing operations consisted of the following:

<i>(\$ amounts in millions)</i>	Year Ended December 31,		
	2018	2017	2016
Current:			
U.S.:			
Federal	\$ 14.9	\$ (1.2)	\$ 0.1
State and local	0.4	1.0	0.4
Foreign	63.2	65.7	0.6
Total current	78.5	65.5	1.1
Deferred:			
U.S.:			
Federal	(35.1)	(78.4)	(27.8)
State and local	(4.3)	(2.1)	(2.2)
Foreign	(15.3)	(53.6)	(12.4)
Total deferred	(54.7)	(134.1)	(42.4)
Income tax expense (benefit)	\$ 23.8	\$ (68.6)	\$ (41.3)

Income tax expense (benefit) from continuing operations differed from the amounts computed by applying the U.S. federal statutory tax rate to pre-tax loss, as a result of the following:

<i>(\$ amounts in millions)</i>	Year Ended December 31,		
	2018	2017	2016
U.S. federal statutory tax rate	21.0 %	35.0%	35.0%
Taxes computed at U.S. statutory rate	\$ (11.2)	\$ (91.1)	\$ (81.1)
Impact of TCJA	(41.8)	(46.3)	—
Net change in reserve	(4.9)	(10.6)	(27.4)
State income taxes, net of federal benefit	(3.1)	1.7	(0.1)
U.S. tax on foreign operations	31.2	35.0	17.7
Change in valuation allowances	27.5	43.3	53.1
Foreign tax on foreign operations	11.4	8.3	16.1
Change of tax rate	8.3	(19.4)	11.8
Provision for tax on undistributed foreign earnings	7.0	1.5	11.4
Impact of transaction costs	—	—	(24.5)
Settlement of Series B Convertible Preferred Stock	—	—	(34.3)
Goodwill impairment	—	—	6.2
Other, net	(0.6)	9.0	9.8
Income tax expense (benefit)	\$ 23.8	\$ (68.6)	\$ (41.3)
Effective tax rate	(44.7)%	26.3%	17.8%

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The components of deferred income taxes at December 31, 2018 and 2017 were as follows:

(\$ amounts in millions)	December 31,	
	2018	2017
Deferred tax assets:		
Net operating losses	\$ 224.5	\$ 323.0
Arysta outside basis differences	274.2	—
Employee benefits	38.6	40.3
Tax credits	38.5	62.0
Financing activities	29.1	24.3
Accrued liabilities	26.4	25.9
Interest carryforward	17.3	44.4
Accounts receivable	16.0	19.1
Research and development costs	11.8	10.3
Goodwill	10.3	19.5
Inventory	4.7	4.6
Other	10.2	20.7
Total deferred tax assets	701.6	594.1
Valuation allowance	(475.2)	(391.7)
Total deferred tax assets	226.4	202.4
Deferred tax liabilities:		
Intangibles	631.2	710.4
Plant and equipment	31.8	24.8
Undistributed foreign earnings	29.5	21.9
Other	0.4	0.4
Total deferred tax liabilities	692.9	757.5
Net deferred tax liability	\$ 466.5	\$ 555.1

Deferred tax assets are included in the Consolidated Balance Sheets as "Other assets," "Non-current assets of discontinued operations" and "Deferred income taxes" at December 31, 2018 and 2017. The total deferred tax assets, valuation allowance and deferred tax liabilities of discontinued operations were \$173 million, \$75 million and \$450 million, respectively, at December 31, 2018 and \$296 million, \$206 million and \$487 million, respectively, at December 31, 2017.

The Company has provided foreign taxes on previously unremitted earnings of certain foreign subsidiaries from 2015 and for other foreign subsidiaries from 2016. At December 31, 2018, the Company had a deferred tax liability of \$29.5 million relating to income and withholding taxes upon distribution of earnings from non-U.S. subsidiaries to certain foreign holding companies. No additional income taxes have been provided on approximately \$490 million of remaining undistributed foreign earnings as these amounts continue to be indefinitely reinvested in foreign operations. Determining the amount of the unrecognized deferred tax liability related to any remaining undistributed foreign earnings is not practicable.

Valuation allowances reflect the Company's assessment that it is more likely than not that certain federal, state and foreign deferred tax assets, primarily net operating losses, will not be realized. The assessment of the need for a valuation allowance requires management to make estimates and assumptions about future earnings, reversal of existing temporary differences and available tax planning strategies. If actual experience differs from these estimates and assumptions, the recorded deferred tax asset may not be fully realized, resulting in an increase to income tax expense in the Company's results of operations. The valuation allowance for deferred tax assets was \$475 million and \$392 million at December 31, 2018 and 2017, respectively. During 2018, the valuation allowance increased by \$83.5 million primarily due to foreign operating losses and the anticipated capital loss on the Sale of Arysta, offset by release of the U.S. valuation allowance following enactment of the TCJA.

At December 31, 2018, the Company had federal, state and foreign net operating loss carryforwards of approximately \$230 million, \$770 million and \$562 million, respectively. The U.S. federal net operating loss carryforwards expire between the years 2023 and 2037. The majority of the state net operating loss carryforwards expire between the years 2019 and 2037. The foreign tax net

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operating loss carryforwards expire between the years 2019 through 2037 or may be carried forward indefinitely. In addition, at December 31, 2018, the Company had approximately \$32.9 million and \$5.8 million of foreign tax credits and other tax credits, respectively, available for carryforward. These carryforward periods range from ten years to an unlimited period of time.

Section 382 of the Internal Revenue Code imposes an annual limitation on the amount of a corporation's U.S. federal taxable income that can be offset by net operating losses if it experiences an "ownership change." The Company experienced ownership changes in 2013 and 2015 with respect to the acquisition of various companies. Accordingly, the use of the Company's net operating losses generated prior to these ownership changes is subject to an annual limitation. If certain changes in the Company's ownership occur prospectively, there could be an additional annual limitation on the amount of utilizable carryforwards.

Tax Uncertainties

The following table summarizes the activity related to the Company's unrecognized tax benefits:

<i>(\$ amounts in millions)</i>	Year Ended December 31,		
	2018	2017	2016
Unrecognized tax benefits at beginning of period	\$ 90.3	\$ 128.3	\$ 112.2
Additions based upon prior year tax positions (including acquired uncertain tax positions)	2.7	4.0	1.7
Additions based on current year tax positions	3.1	6.5	76.2
Reductions for prior period positions	(6.9)	(38.0)	(51.9)
Reductions for settlements and payments	(4.3)	(4.2)	—
Reductions due to closed statutes	(3.5)	(6.3)	(9.9)
Total unrecognized tax benefits at end of period	\$ 81.4	\$ 90.3	\$ 128.3

At December 31, 2018, the Company had \$81.4 million of total unrecognized tax benefits, of which \$80.6 million, if recognized, would impact the Company's effective tax rate. Due to expected settlements, statute of limitations expirations and the sale of Arysta, the Company estimates that \$10.9 million of the total unrecognized benefits will reverse within the next twelve months.

The Company recognizes interest and/or penalties related to income tax matters as part of income tax expense (benefit), which totaled \$0.4 million, \$1.2 million and \$5.5 million, for 2018, 2017 and 2016, respectively. The Company's accrual for interest and penalties totaled \$12.9 million and \$13.0 million at December 31, 2018 and 2017, respectively.

At December 31, 2018, the following tax years remained subject to examination by the major tax jurisdictions indicated below:

Major Jurisdictions	Open Years	
Belgium	2015	through current
Brazil	2014	through current
Canada	2014	through current
China	2015	through current
France	2015	through current
Germany	2013	through current
Japan	2013	through current
Mexico	2013	through current
Netherlands	2012	through current
South Africa	2013	through current
Taiwan	2013	through current
United Kingdom	2008 and 2015	through current
United States	2015	through current

The Company is subject to taxation in the United States and in various states and foreign jurisdictions. With few exceptions, at December 31, 2018, the Company was no longer subject to state and local or foreign examinations by tax authorities for years

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before 2012. The Company is currently undergoing tax examinations in several foreign jurisdictions. The Company believes it has appropriately accrued for the expected outcome of uncertain tax matters and believes such liabilities represent a reasonable provision for taxes ultimately expected to be paid. However, the Company's liability may need to be adjusted as new information becomes available and as tax examinations continue to progress.

12. DEBT

The Company's debt and capital lease obligations consisted of the following:

<i>(\$ amounts in millions)</i>	Maturity Date	Interest Rate	December 31, 2018	December 31, 2017
Senior Notes - USD 1.10 billion ⁽¹⁾	2022	6.50%	\$ 1,067.1	\$ 1,086.1
Senior Notes - EUR 350 million ⁽¹⁾	2023	6.00%	397.4	415.1
Senior Notes - USD 800 million ⁽¹⁾	2025	5.875%	784.9	783.2
First Lien Credit Facility - USD Term Loans ⁽²⁾	2020	> of 3.50% or LIBOR plus 2.50%	624.3	620.4
First Lien Credit Facility - USD Term Loans ⁽²⁾	2021	> of 4.00% or LIBOR plus 3.00%	1,124.7	1,121.2
First Lien Credit Facility - Euro Term Loans ⁽²⁾	2020	> of 3.25% or EURIBOR plus 2.50%	666.2	694.3
First Lien Credit Facility - Euro Term Loans ⁽²⁾	2021	> of 3.50% or EURIBOR plus 2.75%	685.3	716.0
Borrowings under the Revolving Credit Facility		LIBOR plus 3.00%	25.0	—
Other			1.1	10.9
Total debt and capital lease obligations			5,376.0	5,447.2
Less: current installments of long-term debt and revolving credit facilities			25.3	10.1
Total long-term debt and capital lease obligations			\$ 5,350.7	\$ 5,437.1

⁽¹⁾ Net of unamortized premium, discounts and debt issuance costs of \$29.9 million and \$35.5 million at December 31, 2018 and 2017, respectively. Weighted average effective interest rate of 6.5% at December 31, 2018 and 2017.

⁽²⁾ First Lien Credit Facility term loans net of unamortized discounts and debt issuance costs of \$22.4 million and \$33.3 million at December 31, 2018 and 2017, respectively. Weighted average effective interest rate of 4.6% and 4.5% at December 31, 2018 and 2017, respectively, including the effects of interest rate swaps. See Note 13, Financial Instruments, to the Consolidated Financial Statements for further information regarding the Company's interest rate swaps.

Minimum future principal payments on long-term debt were as follows:

<i>(\$ amounts in millions)</i>	Long-Term Debt
2019	\$ —
2020	1,300.0
2021	(*) 1,822.8
2022	1,078.0
2023	401.4
Thereafter	800.0
Total	\$ 5,402.2

^(*) In the event the Company is able to prepay, redeem or otherwise retire and/or refinance in full its \$1.10 billion, 6.50% USD Notes due 2022, as permitted under the Credit Agreement, on or prior to November 2, 2021, the maturity date of approximately \$1.82 billion of first lien debt will be extended to June 7, 2023 from November 2, 2021.

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Credit Agreement

At December 31, 2018, the Company was party to the Credit Agreement, which governed the First Lien Credit Facility and the Revolving Credit Facility (in U.S. dollar or multicurrency). A portion of the Revolving Credit Facility not in excess of \$30.0 million was available for the issuance of letters of credit. At December 31, 2018, the maximum borrowing capacity under the Credit Agreement totaled \$485 million, which consisted of (i) an aggregate principal amount of up to \$240 million under the Revolving Credit Facility to be denominated in U.S. dollars, and (ii) an aggregate principal amount of up to \$245 million under the Revolving Credit Facility to be denominated in multicurrency. Loans under the Revolving Credit Facility bore interest at a rate per annum equal to 3.00% plus an adjusted eurocurrency rate, or 2.00% plus an adjusted base rate, each as calculated as set forth in the Credit Agreement. The Company was required to pay a quarterly commitment fee of 0.50% on the unused balance of the Revolving Credit Facility.

The obligations incurred under the Credit Agreement were guaranteed by substantially all of the Company's domestic subsidiaries, and with respect to the obligations denominated in euros, the Company and certain of its international subsidiaries. Substantially all of the Company's domestic subsidiaries, and certain of its international subsidiaries, had granted security interests in substantially all of their assets in connection with such guarantees, including, but not limited to, their equity interests and personal property.

Covenants, Events of Default and Provisions

At December 31, 2018, the Company was in compliance with the debt covenants contained in its Credit Facilities and, in accordance with applicable debt covenants, had full availability of its remaining borrowing capacity of \$450 million, net of letters of credit, under the Revolving Credit Facility.

Subsequent Event

Using the proceeds from the Arysta Sale, on January 31, 2019, the Company paid down the Credit Facilities, including the First Lien Credit Facility and the Revolving Credit Facility under the Credit Agreement and expensed the related unamortized premiums, discounts and debt issuance costs during the first quarter of 2019. The Credit Agreement was then terminated and replaced, on January 31, 2019, with the New Credit Agreement, which provides for new senior secured credit facilities in an aggregate principal amount of \$1.08 billion, consisting of a revolving facility in an aggregate principal amount of \$330 million maturing in 2024 and a term loan in an aggregate principal amount of \$750 million maturing in 2026. On the closing date of the Arysta Sale, the \$750 million term loan was borrowed under the New Credit Agreement.

Borrowings under the New Credit Agreement bear interest at a rate per annum equal to a base rate, as defined in the New Credit Agreement, plus, in each case, an applicable rate equal to a spread of 1.25% with respect to Base Rate Loans and a spread of 2.25% with respect to Eurocurrency Rate Loans. The Company will pay a commitment fee in respect of any undrawn portion of the Revolver of 0.50% per annum, subject to a stepdown to 0.375% based on the Company's first lien net leverage ratio.

The credit facilities under the New Credit Agreement are guaranteed, jointly and severally, by certain of the Company's domestic subsidiaries and secured by a first-priority security interest in substantially all of the assets of the borrowers and the guarantors, including mortgages on material real property, subject to certain exceptions. The New Credit Agreement also contains customary representations and warranties, and affirmative and negative covenants, including limitations on additional indebtedness, dividends, and other distributions, entry into new lines of business, use of loan proceeds, capital expenditures, restricted payments, restrictions on liens on the assets of the borrowers or any guarantor, transactions with affiliates, amendments to organizational documents, accounting changes, sale and leaseback transactions, and dispositions. If the borrowers have total outstanding borrowings under the revolver (subject to certain exceptions) in excess of 30.0% of the commitment amount under the revolver, the revolver requires that the Company maintain a first lien net leverage ratio of at least 5.0 to 1.0, subject to a right to cure.

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The New Credit Agreement requires the borrowers to make mandatory prepayments of borrowings, subject to certain exceptions, as described in the New Credit Agreement. In addition, the New Credit Agreement contains customary events of default that include, among others, non-payment of principal, interest or fees, violation of covenants, inaccuracy of representations and warranties, failure to make payment on, or defaults with respect to, certain other material indebtedness, bankruptcy and insolvency events, material judgments and change of control provisions. Upon the occurrence of an event of default, and after the expiration of any applicable grace period, payment of any outstanding loans under the New Credit Agreement may be accelerated and the lenders could foreclose on their security interests in the assets of the borrowers and the guarantors.

Senior Notes

5.875% USD Notes due 2025

The 5.875% USD Notes due 2025 are governed by the 5.875% USD Notes Indenture which provides, among other things, for customary affirmative and negative covenants, events of default and other customary provisions. The Company also has the option to redeem the 5.875% USD Notes due 2025 prior to their maturity, subject to, in certain cases, the payment of an applicable make-whole premium. The 5.875% USD Notes due 2025 are unsecured. At December 31, 2018, the 5.875% USD Notes due 2025 were fully and unconditionally guaranteed on a senior unsecured basis by generally all of the Company's domestic subsidiaries that used to guarantee the obligations of the borrowers under the Credit Agreement.

Prior Senior Notes

At December 31, 2018, the Prior Senior Notes were governed by the Prior Senior Notes Indenture which provided, among other things, for customary affirmative and negative covenants, events of default and other customary provisions. The Company also had the option to redeem the Prior Senior Notes prior to their maturity, subject to, in certain cases, the payment of an applicable make-whole premium. The Prior Senior Notes were unsecured and fully and unconditionally guaranteed on a senior unsecured basis by generally all of the Company's domestic subsidiaries that used to guarantee the obligations of the borrowers under the Credit Agreement.

Subsequent Events

On February 1, 2019, the Company completed the redemption of all outstanding Prior Senior Notes and, as a result, the Prior Senior Notes Indenture was terminated, releasing the Company and the guarantors named therein from their obligation under the Prior Senior Notes and the Prior Senior Notes Indenture. In connection with this redemption, the Company paid approximately \$29.5 million of call premiums and wrote-off the related unamortized premiums, discounts and debt issuance costs during the first quarter of 2019. The Company funded the redemption with a portion of the net proceeds from the Arysta Sale and a portion of the borrowings under the New Credit Agreement, as described above.

The 5.875% USD Notes due 2025 were not redeemed and remain outstanding. At January 31, 2019, these notes are fully and unconditionally guaranteed on a senior unsecured basis by generally all of the Company's domestic subsidiaries that guarantee the obligations of the borrowers under the New Credit Agreement.

Lines of Credit and Other Debt Facilities

The Company has access to various revolving lines of credit, short-term debt facilities, and overdraft facilities worldwide which are used to fund short-term cash needs. At December 31, 2018, the aggregate principal amount outstanding under such facilities totaled \$25.0 million. There were no amounts outstanding at December 31, 2017. The Company had letters of credit outstanding of \$10.2 million and \$19.3 million at December 31, 2018 and 2017, respectively, of which \$9.7 million and \$18.6 million at December 31, 2018 and 2017, respectively, reduced the borrowings available under the various facilities. At December 31, 2018 and 2017, the availability under these facilities was approximately \$481 million and \$509 million, respectively, net of outstanding letters of credit.

Subsequent Event

The revolving facility under the New Credit Agreement includes borrowing capacity in the form of letters of credit of up to \$100 million. In connection with the termination of the Credit Agreement and entry into the New Credit Agreement, all letters of credit outstanding on January 31, 2019 under the Credit Agreement were rolled into the New Credit Agreement.

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13. FINANCIAL INSTRUMENTS

Derivatives and Hedging

In the normal course of business, the Company is exposed to risks relating to changes in foreign currency exchange rates, commodity prices and interest rates. Derivative financial instruments, such as foreign currency exchange forward contracts, commodities futures contracts and interest rate swaps are used to manage the risks associated with changes in the conditions of those markets. All derivatives are recognized in the Consolidated Balance Sheets at fair value. The counterparties to the Company's derivative agreements are primarily major international financial institutions. The Company continually monitors its derivative positions and the credit ratings of its counterparties and does not anticipate nonperformance by the counterparties.

Foreign Currency

The Company conducts a significant portion of its business in currencies other than the U.S. dollar and a portion of its business in currencies other than the functional currencies of its subsidiaries. As a result, the Company's operating results are impacted by foreign currency exchange rate volatility.

The Company holds foreign currency forward contracts to purchase and sell various currencies to mitigate foreign currency exposure primarily with U.S. dollars and euro. The Company has not designated any foreign currency exchange forward contracts as eligible for hedge accounting and, as a result, changes in the fair value of foreign currency forward contracts are recorded in the Consolidated Statements of Operations as "Other income (expense), net." The total notional value of foreign currency exchange forward contracts held at December 31, 2018 and 2017 was approximately \$102 million and \$201 million, respectively, with settlement dates generally within one year.

Commodities

As part of its risk management policy, the Company enters into commodity futures contracts for the purpose of mitigating its exposure to fluctuations in prices of certain metals used in the production of its finished goods. The Company held futures contracts to purchase and sell various metals, primarily tin and silver, for a notional amount of \$28.9 million and \$31.8 million at December 31, 2018 and 2017, respectively. Substantially all contracts outstanding at December 31, 2018 have delivery dates within one year. The Company has not designated these derivatives as hedging instruments and, accordingly, records changes in their fair values in the Consolidated Statements of Operations as "Other income (expense), net."

Unrealized gains and losses on derivative contracts are accounted for in the Consolidated Statements of Cash Flows as "Operating activities."

Interest Rates

The Company entered into interest rate swaps to effectively fix the floating base rate portion of its interest payments on approximately \$1.12 billion of U.S. dollar denominated debt and €276 million of euro denominated debt at 1.96% and 1.20%, respectively, through June 2020.

Changes in the fair value of a derivative instrument that is designated as, and meets all the required criteria of, a cash flow hedge are recorded in "Other comprehensive (loss) income" and reclassified from "Accumulated other comprehensive loss" into earnings as the underlying hedged item affects earnings. Amounts reclassified into earnings related to interest rate swaps are included in the Condensed Consolidated Statements of Operations as "Interest expense, net."

During 2018, the Company's interest rate swaps were deemed highly effective utilizing the dollar-offset method of assessing hedge effectiveness. The ineffectiveness resulting from the repriced portion of the Company's euro-denominated debt in 2017 totaled \$1.0 million in 2018, and was recorded in the Consolidated Statements of Operations as "Other income (expense), net." The Company expects to reclassify \$5.9 million of income from "Accumulated other comprehensive loss" to "Interest expense, net" in its Consolidated Statement of Operations during 2019.

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Subsequent Event

In connection with the pay down of the Credit Facilities on January 31, 2019, the Company terminated and settled its existing interest rate swaps, and all remaining balances resulting from changes in fair value that were included in "Accumulated other comprehensive loss" were reclassified to the income statement during the first quarter of 2019.

The Company also entered into new interest rate swaps to effectively fix the floating rate of the interest payments associated with the new \$750 million term loan through January 2024 with all remaining interest payments associated with the last two years (beginning from February 2024 to January 2026) reverting back to floating. In addition, the Company also entered into a net investment hedge to effectively convert the term loans borrowings under the New Credit Agreement, a U.S. dollar denominated debt obligation, into fixed-rate euro-denominated debt. Under this agreement, which expires in January 2024, the Company is obligated to make periodic euro-denominated coupon payments to the hedge counterparties on an aggregate initial notional amount of €662 million, in exchange for periodic U.S. dollar-denominated coupon payments from these hedge counterparties on an aggregate initial notional amount of \$750 million.

The net result of the above hedges is a fixed interest rate of approximately 2.3% through January 2024.

Fair Value Measurements

The following table presents the Company's financial assets and liabilities measured at fair value on a recurring basis:

<i>(\$ amounts in millions)</i>	Balance sheet location	Classification	December 31,	
			2018	2017
<u>Asset Category</u>				
Foreign exchange and metals contracts not designated as hedging instruments	Other current assets	Level 2	\$ 0.9	\$ 2.0
Interest rate swaps designated as cash flow hedging instruments	Other current assets	Level 2	6.5	—
Interest rate swaps designated as cash flow hedging instruments	Other assets	Level 2	2.6	3.4
Available for sale equity securities	Other assets	Level 1	0.3	2.4
Available for sale equity securities	Other assets	Level 2	—	0.6
Total			\$ 10.3	\$ 8.4
<u>Liability Category</u>				
Interest rate swaps designated as cash flow hedging instruments	Accrued expenses and other liabilities	Level 2	\$ 0.6	\$ 2.8
Foreign exchange and metals contracts not designated as hedging instruments	Accrued expenses and other liabilities	Level 2	1.2	1.4
Interest rate swaps designated as cash flow hedging instruments	Other liabilities	Level 2	0.3	0.8
Long-term contingent consideration	Contingent consideration	Level 3	57.4	79.2
Total			\$ 59.5	\$ 84.2

The following methods and assumptions were used to estimate the fair value of each class of the Company's financial assets and liabilities:

Derivatives - Derivative assets and liabilities include foreign currency, metals and interest rate derivatives. The values are determined using pricing models based upon observable market inputs, such as market spot and futures prices on over-the-counter derivative instruments, market interest rates and consideration of counterparty credit risk.

Available for sale equity securities - Available for sale equity securities classified as Level 1 assets are measured using quoted market prices at the reporting date multiplied by the quantity held. Available for sales equity securities classified as Level 2 assets are measured using quoted prices for similar instruments in active markets.

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Long-term contingent consideration - The long-term contingent consideration represents a potential liability of up to \$100 million tied to the achievement of certain common stock trading price performance metrics and Adjusted EBITDA targets over a seven-year period ending December 2020 in connection with the MacDermid Acquisition.

- **Common Stock** - The common stock performance target, which represents an expected future payment value of \$40.0 million, has been satisfied and is recorded at its present value utilizing a discount rate of approximately 2.48%. An increase or decrease in the discount rate of 1% changes the fair value measure of the metric by approximately \$0.8 million. In the first quarter of 2019, the Company paid \$40.0 million related to the achievement of these common stock performance targets.
- **Adjusted EBITDA** - The estimated fair value of the Adjusted EBITDA performance metric is derived using the income approach with unobservable inputs, based on present value and multi-year forecast assumptions, which include a discount rate of 10.5% and probability weighted Adjusted EBITDA assessments of expected future payment values of \$0.0 million, \$30.0 million and \$60.0 million. At December 31, 2018, the Company determined there was a higher probability of achieving the Adjusted EBITDA target that results in an expected payment of \$30.0 million based on the most recent multi-year forecast, which resulted in a reduction of the contingent consideration liability of \$22.2 million. An increase or a decrease in the probability weighted Adjusted EBITDA assessments of future payment values of 10.0% changes the estimated fair value measure of the performance metric by approximately \$2.4 million.

Changes in the estimated fair value of the long-term contingent consideration are recorded in the Consolidated Statements of Operations as "Selling, technical, general and administrative" expenses.

There were no significant transfers between the fair value hierarchy levels during 2018.

The carrying value and estimated fair value of the Company's long-term debt each totaled \$5.35 billion at December 31, 2018, and \$5.44 billion and \$5.58 billion, respectively, at December 31, 2017. The carrying values noted above include unamortized premiums, discounts and debt issuance costs. The estimated fair value of long-term debt is measured using quoted market prices at the reporting date multiplied by the gross carrying amount of the related debt, which excludes unamortized premiums, discounts and debt issuance costs. Such instruments are valued using Level 2 inputs.

Nonrecurring Fair Value Measurements

As a result of the 2016 annual goodwill impairment test, Industrial & Specialty segment recorded an impairment charge of \$46.6 million to reduce the carrying value of its Energy Solutions reporting unit to its fair value. This measurement was performed on a non-recurring basis using significant unobservable inputs (Level 3). See Note 8, *Goodwill and Intangible Assets*, to the Consolidated Financial Statements for further information.

14. STOCKHOLDERS' EQUITY

Registered Underwritten Public Offerings

On September 21, 2016, the Company completed the September 2016 Equity Offering of 48,787,878 shares of its common stock at a public offering price of \$8.25 per share. This offering resulted in gross proceeds to the Company of approximately \$402.5 million, before underwriting discounts and commissions and offering expenses of \$11.9 million.

Preferred Stock

The Company is authorized to issue 5,000,000 shares of preferred stock. The Board had designated 2,000,000 of those shares as "Series A Preferred Stock." At December 31, 2018 and 2017, a total of 2,000,000 shares of Series A Preferred Stock were issued and outstanding. The Board had also designated 600,000 of those shares as "Series B Convertible Preferred Stock." At December 31, 2018 and 2017, all shares of Series B Convertible Preferred Stock were either converted or subsequently canceled and retired as noted below. Shares of preferred stock have no voting rights, except in respect of any amendment to the Company's Certificate of Incorporation, as amended, that would alter or change their rights or privileges.

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Series A Preferred Stock

The Founder Entities are current holders of Element Solutions' outstanding 2,000,000 shares of Series A Preferred Stock and are entitled to receive an annual dividend on such Series A Preferred Stock in the form of shares of the Company's common stock. The dividend amount is calculated based on the appreciated stock price compared to the highest dividend price previously used in calculating the Series A Preferred Stock dividends, which is currently \$22.85. There were no stock dividends declared since 2014 with respect to the Series A Preferred Stock.

Each share of Series A Preferred Stock is convertible into one share of common stock of Element Solutions at the option of the holder until December 31, 2020. All outstanding shares of Series A Preferred Stock will be automatically converted into shares of common stock on a one-for-one basis (i) in the event of a change of control of the Company following an acquisition, or (ii) on December 31, 2020 (which may be extended by the Board for three additional years).

Series B Convertible Preferred Stock

On December 13, 2016, in accordance with a settlement agreement dated September 9, 2016, as amended, the Company settled all of its obligations with respect to its then outstanding 600,000 shares of Series B Convertible Preferred Stock, issued in connection with the Arysta Acquisition, and the related make whole payment obligation, as described in the settlement agreement, in exchange for a cash payment of \$460 million and the issuance of 5,500,000 shares of its common stock upon conversion of the corresponding shares of Series B Convertible Preferred Stock. The remaining shares of Series B Convertible Preferred Stock were subsequently canceled and retired.

As a result of the settlement agreement, for accounting purposes, the Series B Convertible Preferred Stock had been deemed an extinguishment in exchange for the issuance of another financial instrument. During 2016, the Company recognized a gain of \$103 million in "Other income (expense), net" in the Consolidated Statement of Operations and a gain of \$32.9 million in "Net loss attributable to common stockholders." The Company elected the fair value option to measure the preferred stock redemption liability subsequent to the date of the settlement agreement as it most accurately reflected the economics of the transaction and the value of the preferred stock redemption liability. During 2016, the Company recorded a \$5.0 million loss associated with the remeasurement of the preferred stock redemption liability, which was recorded to "Other income (expense), net" in the Consolidated Statement of Operations.

Non-Controlling Interest

In connection with the MacDermid Acquisition, approximately \$97.5 million was raised in new equity consisting of 8,774,527 shares of PDH Common Stock. The PDH Common Stock is classified in the Consolidated Balance Sheets as "Non-controlling interests" at December 31, 2018 and 2017 and will continue to be classified as such until it is fully converted into shares of the Company's common stock. Of the shares initially issued, 4,754,848 have been converted and a like number of shares of the Company's common stock have been issued through December 31, 2018. Non-controlling interest at December 31, 2018, 2017 and 2016, totaled 3.22%, 3.83% and 6.01%, respectively.

During 2018, 2017 and 2016, approximately \$1.3 million, \$2.1 million and \$(5.9) million, respectively, of net income (loss) has been allocated to the Retaining Holders, as included in the Consolidated Statements of Operations.

Subsequent Event

On February 8, 2019, as part of the Company's previously-announced stock repurchase program, the Company repurchased 37 million shares of its common stock from Pershing Square Capital Management, L.P., advisor to certain Pershing Square investment funds, in a privately-negotiated transaction, for a per share purchase price of \$11.72, the last sale price reported for the Company's shares as of the 4 pm close of trading on the NYSE on Friday, February 1, 2019, or an aggregate purchase price of \$434 million. These repurchased shares, which represented approximately 13% of the Company's issued and outstanding common stock, were retired on that date. The repurchase was funded from cash on hand and borrowings under the New Credit Agreement.

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15. ACCUMULATED OTHER COMPREHENSIVE (LOSS) INCOME

Changes in each component of "Accumulated other comprehensive (loss) income," net of tax, during 2018, 2017 and 2016 were as follows:

<i>(\$ amounts in millions)</i>	Foreign Currency Translation Adjustments	Pension and Post- retirement Plans	Unrealized Gain (Loss) on Available for Sale Securities	Derivative Financial Instrument Revaluation	Non- Controlling Interests	Accumulated Other Comprehensive (Loss) Income
Balance at December 31, 2015	\$ (899.3)	\$ (26.3)	\$ 1.2	\$ (8.1)	\$ 46.4	\$ (886.1)
Other comprehensive income (loss) before reclassifications, net	204.6	8.3	(0.8)	(9.6)	(2.0)	200.5
Reclassifications, pretax	—	(0.8)	—	11.9	—	11.1
Tax (benefit) expense reclassified	—	—	—	—	—	—
Balance at December 31, 2016	(694.7)	(18.8)	0.4	(5.8)	44.4	(674.5)
Other comprehensive income (loss) before reclassifications, net	241.1	2.5	(2.2)	(4.6)	(3.6)	233.2
Reclassifications, pretax	—	10.5	0.5	10.4	—	21.4
Tax benefit reclassified	—	(2.1)	—	—	—	(2.1)
Balance at December 31, 2017	(453.6)	(7.9)	(1.3)	—	40.8	(422.0)
Impact of ASU 2016-01 adoption	—	—	1.3	—	—	1.3
Adjusted balance at January 1, 2018	(453.6)	(7.9)	—	—	40.8	(420.7)
Other comprehensive (loss) income before reclassifications, net	(378.0)	1.8	—	6.0	34.5	(335.7)
Reclassifications, pretax	—	—	—	(0.5)	—	(0.5)
Tax (benefit) expense reclassified	—	—	—	—	—	—
Balance at December 31, 2018	<u>\$ (831.6)</u>	<u>\$ (6.1)</u>	<u>\$ —</u>	<u>\$ 5.5</u>	<u>\$ 75.3</u>	<u>\$ (756.9)</u>

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16. LOSS PER SHARE

A computation of weighted average shares of common stock outstanding and loss per share for 2018, 2017 and 2016 follows:

	Year Ended December 31,		
	2018	2017	2016
<i>(\$ amounts in millions, except per share amounts)</i>			
Net loss from continuing operations	\$ (77.0)	\$ (191.8)	\$ (190.5)
Net (income) loss attributable to the non-controlling interests	(1.5)	(2.3)	5.6
Gain on amendment of Series B Convertible Preferred Stock	—	—	32.9
Net loss from continuing operations attributable to common stockholders	(78.5)	(194.1)	(152.0)
<i>Numerator adjustments for diluted loss per share:</i>			
Gain on settlement agreement related to Series B Convertible Preferred Stock	—	—	(103.0)
Gain on amendment of Series B Convertible Preferred Stock	—	—	(32.9)
Remeasurement adjustment associated with the Preferred Series B redemption liability	—	—	5.0
Loss allocated to PDH non-controlling interest	—	—	(5.9)
Net loss from continuing operations attributable to common stockholders for diluted EPS	\$ (78.5)	\$ (194.1)	\$ (288.8)
Basic weighted average common stock outstanding	288.2	286.1	243.3
<i>Denominator adjustments for diluted loss per share:</i>			
Conversion related to the amendment of the Series B Convertible Preferred Stock - assumed at beginning of reporting period	—	—	15.3
Settlement of preferred stock redemption liability - assumed at beginning of reporting period	—	—	5.7
Conversion of PDH non-controlling interest	—	—	8.0
Share adjustments	—	—	29.0
Dilutive weighted average common stock outstanding	288.2	286.1	272.3
Loss per share from continuing operations attributable to common stockholders:			
Basic	\$ (0.27)	\$ (0.68)	\$ (0.62)
Diluted	\$ (0.27)	\$ (0.68)	\$ (1.06)
Dividends per share paid to common stockholders	\$ —	\$ —	\$ —

For 2018, 2017 and 2016, the following securities were not included in the computation of diluted shares outstanding because the effect would be anti-dilutive, or because performance targets and/or market conditions were not yet met for awards contingent upon such measures:

	Year Ended December 31,		
	2018	2017	2016
<i>(amounts in millions)</i>			
Shares issuable for the contingent consideration	7.8	7.4	8.6
Shares issuable upon conversion of PDH Common Stock	4.1	6.0	—
Shares issuable upon conversion of Series A Preferred Stock	2.0	2.0	2.0
Shares issuable upon vesting of RSUs	1.6	0.8	0.1
Shares issuable upon vesting and exercise of stock options	0.1	0.1	—
Total shares excluded	15.6	16.3	10.7

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17. OPERATING LEASE COMMITMENTS

The Company leases certain land, office space, warehouse space and equipment under agreements which are classified as operating leases for financial statement purposes. Certain of these leases provide for payment of real estate taxes, common area maintenance, insurance and certain other expenses. Lease terms may have escalating rent provisions and rent holidays which are recognized on a straight-line basis over the term of the lease. The leases expire at various dates through 2055.

Total operating lease rental expense for 2018, 2017 and 2016 was \$21.6 million, \$22.0 million and \$21.7 million, respectively.

Minimum future non-cancelable operating lease commitments were as follows:

<i>(\$ amounts in millions)</i>	Operating Lease Commitments
Year ending December 31,	
2019	\$ 19.2
2020	15.5
2021	11.9
2022	9.7
2023	7.7
Thereafter	27.9
Total	\$ 91.9

The fixed operating lease commitments detailed above assume that the Company continues the leases through their initial lease terms.

18. CONTINGENCIES, ENVIRONMENTAL AND LEGAL MATTERS

Environmental Matters

The Company is involved in various claims relating to environmental matters at a number of current and former plants and waste management sites. The Company engages or participates in remedial and other environmental compliance activities at certain of these sites. At other sites, it has been named as a potential responsible party pursuant to the federal Superfund Act and/or state Superfund laws comparable to the federal law for site remediation. The Company analyzes each individual site, considering the number of parties involved, the level of its potential liability or contribution relating to the other parties, the nature and magnitude of the hazardous waste involved, the method and extent of remediation, the potential insurance coverage, the estimated legal and consulting expense with respect to each site and the time period over which any costs would likely be incurred. Based on this analysis, the Company estimates the clean-up costs and related claims for each site. The estimates are based in part on discussions with other potential responsible parties, governmental agencies and engineering firms.

The Company accrues for environmental matters when it is probable that a liability has been incurred and the amount of the liability can be reasonably estimated based on current laws and existing technologies. The accruals are adjusted periodically as assessment and remediation efforts progress or as additional technical or legal information becomes available. The Company's environmental liabilities, which are included in the Consolidated Balance Sheets as "Accrued expenses and other current liabilities" and "Other liabilities," totaled \$18.3 million and \$27.9 million at December 31, 2018 and 2017, respectively, primarily driven by environmental remediation, clean-up costs and monitoring of sites that were either closed or disposed of in prior years. While uncertainty exists with respect to the amount and timing of its ultimate environmental liabilities, the Company does not currently anticipate any material losses in excess of the amount recorded. However, it is possible that new information about the sites, such as results of investigations, could make it necessary for the Company to reassess its potential exposure related to these environmental matters.

As of the date hereof, management does not believe it is possible to develop an estimate of the range of reasonably possible environmental loss in excess of the Company's recorded liabilities, and is unable to ascertain the ultimate aggregate amount of monetary liability or financial impact with respect to these matters.

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Legal Matters

From time to time, the Company is involved in various legal proceedings, investigations and/or claims in the normal course of its business. Although it cannot predict with certainty the ultimate resolution of these matters which involve judgments that are inherently subjective, the Company believes that their resolutions, to the extent not covered by insurance, will not, individually or in the aggregate, have a material adverse effect on its consolidated financial position, results of operations or cash flows.

In June 2017, MacDermid Printing and DuPont reached an agreement to settle and dismiss their respective lawsuits against each other, as well as MacDermid Printing's lawsuit against Cortron Corporation, involving MacDermid Printing's flexographic printing technology and related business. In connection with the settlement, in July 2017, DuPont made a payment of \$20.0 million to MacDermid Printing, and the Company recorded a net settlement gain of \$10.8 million in the Consolidated Statement of Operations as "Other income (expense), net." The settlement resolved all outstanding litigation between MacDermid Printing, DuPont and Cortron Corporation.

19. RELATED PARTY TRANSACTIONS

The Company is party to an Advisory Services Agreement with Mariposa Capital, LLC, an affiliate of one of its founder directors, whereby Mariposa Capital, LLC is entitled to receive an annual fee, which is accrued quarterly and payable in quarterly installments, and reimbursement for expenses. This agreement is automatically renewed for successive one-year terms unless either party notifies the other party in writing of its intention not to renew no later than 90 days prior to the expiration of the applicable term. Under this agreement, the Company incurred advisory fees totaling \$2.0 million during 2018, 2017 and 2016, which were recorded in the Consolidated Statements of Operations as "Selling, technical, general and administrative" expense. Effective February 1, 2019, the annual fee was increased to \$3.0 million.

20. RESTRUCTURING

The Company continuously evaluates its operations in an effort to identify opportunities to improve profitability by leveraging existing infrastructure to reduce operating costs and respond to overall economic conditions.

Restructuring expenses were recorded as follows in each of the Company's business segments:

<i>(\$ amounts in millions)</i>	Year Ended December 31,		
	2018	2017	2016
Electronics	\$ 4.9	\$ 17.3	\$ 13.7
Industrial & Specialty	1.4	6.2	11.3
Total	\$ 6.3	\$ 23.5	\$ 25.0

At December 31, 2018 and 2017, the Company's restructuring liability was not material.

2018 Activity

The restructuring plans initiated during the year primarily relate to headcount reductions associated with continued cost saving opportunities within the business, including initiatives associated with the Company's reorganization efforts resulting from the Arysta Sale to consolidate its corporate function with those of its former Performance Solutions segment. There are no material additional costs expected to be incurred related to these discrete restructuring activities.

2017 and 2016 Activity

The restructuring plans primarily relate to headcount reductions associated with the integration of the Alent, OMG and OMG Malaysia Acquisitions. There are no material additional costs expected to be incurred related to these discrete restructuring activities.

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Restructuring expenses were recorded as follows in the Consolidated Statements of Operations:

<i>(\$ amounts in millions)</i>	Year Ended December 31,		
	2018	2017	2016
Cost of sales	\$ 0.1	\$ 1.6	\$ 1.3
Selling, technical, general and administrative	6.2	21.9	23.7
Total	\$ 6.3	\$ 23.5	\$ 25.0

21. OTHER INCOME (EXPENSE), NET

"Other income (expense), net," as reported in the Consolidated Statements of Operations, consisted of the following:

<i>(\$ amounts in millions)</i>	Year Ended December 31,		
	2018	2017	2016
Loss on debt extinguishment	\$ (0.4)	\$ (72.3)	\$ (11.3)
Gain (loss) on derivative contracts	0.4	(1.8)	(4.9)
Gain on sale of equity investment	11.3	—	—
Gain on legal settlement	—	10.8	—
Gain on settlement agreement related to Series B Convertible Preferred Stock	—	—	103.0
Non-cash change in fair value of preferred stock redemption liability	—	—	(5.0)
Other income (expense), net	3.5	(6.7)	3.8
Total	\$ 14.8	\$ (70.0)	\$ 85.6

22. ACCRUED EXPENSES AND OTHER CURRENT LIABILITIES

"Accrued expenses and other current liabilities," as reported in the Consolidated Balance Sheets, consisted of the following:

<i>(\$ amounts in millions)</i>	December 31,	
	2018	2017
Accrued salaries, wages and employee benefits	\$ 55.2	\$ 61.1
Accrued interest	43.5	46.4
Accrued income taxes payable	29.6	48.0
Other current liabilities	61.2	50.0
Total	\$ 189.5	\$ 205.5

23. SEGMENT INFORMATION

As a result of the Arysta Sale, the Company completed certain changes to its organizational structure that resulted in a change to the Company's reportable business segments. The previously reported Agricultural Solutions segment has met the requirements to be classified as discontinued operations and the previously reported Performance Solutions segment was separated into the Electronics and the Industrial & Specialty segments, which represent businesses for which separate financial information is utilized by the chief operating decision maker, or CODM, for purposes of allocating resources and evaluating performance.

The Company allocates resources and evaluates the performance of its operating segments based primarily on net sales and Adjusted EBITDA. Adjusted EBITDA for each segment is defined as earnings before interest, taxes, depreciation and amortization, as further adjusted for additional items included in earnings that are not considered to be representative or indicative of each segment's ongoing business. Adjusted EBITDA for each segment also includes an allocation of corporate costs.

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Results of Operations

The following table summarizes financial information regarding each reportable segment's results of operations:

<i>(amounts in millions)</i>	Year Ended December 31,		
	2018	2017	2016
Net Sales:			
Electronics	\$ 1,157.5	\$ 1,122.6	\$ 1,039.2
Industrial & Specialty	803.5	756.0	730.9
Total	\$ 1,961.0	\$ 1,878.6	\$ 1,770.1
Adjusted EBITDA:			
Electronics	\$ 248.2	\$ 233.1	\$ 212.3
Industrial & Specialty	172.5	168.1	156.1
Total	\$ 420.7	\$ 401.2	\$ 368.4

The following table reconciles "Net loss attributable to common stockholders" to Adjusted EBITDA:

<i>(\$ amounts in millions)</i>	Year Ended December 31,		
	2018	2017	2016
Net loss attributable to common stockholders	\$ (324.4)	\$ (296.2)	\$ (40.8)
<i>Add (subtract):</i>			
Gain on amendment of Series B Convertible Preferred Stock	—	—	(32.9)
Net income (loss) attributable to the non-controlling interests	4.5	0.6	(3.0)
Loss (income) from discontinued operations, net of tax	242.9	103.8	(113.8)
Income tax expense (benefit)	23.8	(68.6)	(41.3)
Interest expense, net	311.0	336.9	372.3
Depreciation expense	44.6	46.4	46.6
Amortization expense	112.1	109.6	109.1
EBITDA	414.5	232.5	296.2
Adjustments to reconcile to Adjusted EBITDA:			
Restructuring expense	6.3	23.5	25.0
Amortization of inventory step-up	—	—	11.7
Acquisition and integration costs	12.1	4.1	25.1
Legal settlement	—	(10.8)	—
Foreign exchange loss on foreign denominated external and internal long-term debt	6.0	53.4	25.8
Debt refinancing costs	0.5	83.1	19.7
Goodwill impairment	—	—	46.6
Gain on settlement agreement related to Series B Convertible Preferred Stock	—	—	(103.0)
Non-cash change in fair value of preferred stock redemption liability	—	—	5.0
Pension plan settlement	—	10.5	1.7
Gain on sale of equity investment	(11.3)	—	—
Change in fair value of contingent consideration	(21.8)	3.4	5.1
Other, net	14.4	1.5	9.5
Adjusted EBITDA	\$ 420.7	\$ 401.2	\$ 368.4

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Net Sales by Major Country

A major country is defined as one with total net sales by geographic area based on the country where sales were generated greater than 10% of the total consolidated net sales in any of the years presented.

<i>(amounts in millions)</i>	Year Ended December 31,		
	2018	2017	2016
United States	\$ 477.4	\$ 451.4	\$ 457.1
China	367.4	358.6	323.0
Other countries	1,116.2	1,068.6	990.0
Total	\$ 1,961.0	\$ 1,878.6	\$ 1,770.1

Long-Lived Assets by Major Country

A major country is defined as one with long-lived assets greater than 10% of the total long-lived assets, net in any of the years presented. Long-lived assets represent property, plant and equipment, net.

<i>(amounts in millions)</i>	December 31,	
	2018	2017
United States	\$ 108.2	\$ 114.0
China	36.1	41.6
Other countries	122.6	131.8
Total	\$ 266.9	\$ 287.4

Disaggregated Net Sales by Product Category

The following table presents the Company's disaggregated external net sales by product category for each of the periods presented:

<i>(amounts in millions)</i>	Year Ended December 31,		
	2018	2017	2016
Electronics:			
Assembly Solutions	\$ 580.0	\$ 561.4	\$ 493.8
Circuitry Solutions	406.3	401.1	383.2
Semiconductor Solutions	171.2	160.1	162.2
Electronics total	1,157.5	1,122.6	1,039.2
Industrial & Specialty:			
Industrial Solutions	560.7	528.0	486.2
Graphics Solutions	159.1	153.4	171.8
Energy Solutions	83.7	74.6	72.9
Industrial & Specialty total	803.5	756.0	730.9
Total	\$ 1,961.0	\$ 1,878.6	\$ 1,770.1

Assets by Reportable Segment

Total assets by reportable segment at December 31, 2018 and 2017 are not presented as they are not utilized by the CODM, for purposes of allocating resources and evaluating performance.

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24. SUPPLEMENTARY DATA

	2018			
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
<i>(\$ amounts in millions, except per share amounts)</i>				
Selected Quarterly Financial Data (Unaudited)				
Net sales from continuing operations	\$ 492.5	\$ 501.6	\$ 488.5	\$ 478.4
Gross profit from continuing operations	211.1	214.7	209.6	202.2
Net loss from continuing operations	(8.9)	(49.6)	(4.3)	(14.2)
Net income (loss) from discontinued operations ⁽¹⁾	46.9	61.4	(401.6)	50.4
Net income (loss)	38.0	11.8	(405.9)	36.2
(Loss) earnings per share				
Basic from continuing operations	\$ (0.04)	\$ (0.17)	\$ (0.02)	\$ (0.05)
Basic from discontinued operations	0.17	0.21	(1.40)	0.18
Basic attributable to common stockholders	<u>\$ 0.13</u>	<u>\$ 0.04</u>	<u>\$ (1.42)</u>	<u>\$ 0.13</u>
Diluted from continuing operations	\$ (0.04)	\$ (0.17)	\$ (0.02)	\$ (0.05)
Diluted from discontinued operations	0.17	0.21	(1.4)	0.18
Diluted attributable to common stockholders	<u>\$ 0.13</u>	<u>\$ 0.04</u>	<u>\$ (1.42)</u>	<u>\$ 0.13</u>

⁽¹⁾ Net income from discontinued operations was impacted by the recognition of an estimated asset impairment loss of \$376.0 million in the third quarter of 2018 and an additional \$74.0 million in the fourth quarter of 2018, as the carrying value of discontinued operations exceeded the estimated fair value less costs to sell, which primarily reflected the recognition of foreign currency translation adjustments that have been recorded in "Accumulated other comprehensive loss" within Stockholders' Equity.

	2017			
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
<i>(\$ amounts in millions, except per share amounts)</i>				
Selected Quarterly Financial Data (Unaudited)				
Net sales from continuing operations	\$ 447.1	\$ 462.3	\$ 480.6	\$ 488.6
Gross profit from continuing operations	196.8	196.6	208.2	212.2
Net loss from continuing operations	(62.2)	(73.9)	(36.9)	(18.8)
Net income (loss) from discontinued operations ⁽¹⁾	38.6	13.9	(29.4)	(126.9)
Net loss	(23.6)	(60.0)	(66.3)	(145.7)
(Loss) earnings per share				
Basic from continuing operations	\$ (0.23)	\$ (0.26)	\$ (0.13)	\$ (0.06)
Basic from discontinued operations	0.14	0.05	(0.11)	(0.43)
Basic attributable to common stockholders	<u>\$ (0.09)</u>	<u>\$ (0.21)</u>	<u>\$ (0.24)</u>	<u>\$ (0.49)</u>
Diluted from continuing operations	\$ (0.23)	\$ (0.26)	\$ (0.13)	\$ (0.06)
Diluted from discontinued operations	0.14	0.05	(0.11)	(0.43)
Diluted attributable to common stockholders	<u>\$ (0.09)</u>	<u>\$ (0.21)</u>	<u>\$ (0.24)</u>	<u>\$ (0.49)</u>

⁽¹⁾ Net income from discontinued operations was impacted by the recognition of a goodwill impairment charge of \$160.0 million in the fourth quarter of 2017.

Element Solutions Inc

Valuation and Qualifying Accounts and Reserves

<i>(amounts in millions)</i>	Balance at beginning of period	(Charges) Income	Deductions from (increases to) reserves and other ⁽¹⁾	Balance at end of period
Reserves against accounts receivable:				
2018	\$ (8.2)	\$ (0.9)	\$ 1.4	\$ (7.7)
2017	(10.9)	2.1	0.6	(8.2)
2016	(6.1)	(2.9)	(1.9)	(10.9)

<i>(amounts in millions)</i>	Balance at beginning of period	(Charges) Income	Deductions from (increases to) reserves and other ⁽¹⁾	Balance at end of period
Valuation allowances against deferred tax assets:				
2018	\$ (391.7)	\$ (76.1)	\$ (7.4)	\$ (475.2)
2017	(383.3)	(10.9)	2.4	(391.7)
2016	(303.8)	(68.4)	(11.0)	(383.3)

⁽¹⁾ Other activity consists primarily of currency translation effects.

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ELEMENT SOLUTIONS INC

ANNUAL REPORT 2018 CORPORATE INFORMATION

BOARD OF DIRECTORS



MARTIN E. FRANKLIN
Executive Chairman
Founder & Chief Executive Officer
Mariposa Capital, LLC



BENJAMIN GLIKLICH
Chief Executive Officer
Element Solutions Inc



IAN G.H. ASHKEN⁽¹⁾⁽²⁾⁽³⁾
Former Vice Chairman
and President of
Jarden Corporation



MICHAEL F. GOSS⁽¹⁾⁽³⁾
Executive Vice President
and Chief Financial Officer
Sotheby's



NICHELLE MAYNARD-
ELLIOTT⁽¹⁾⁽²⁾
Executive Director,
Mergers & Acquisitions
Praxair, Inc.



E. STANLEY O'NEAL⁽²⁾⁽³⁾
Former Chairman and
Chief Executive Officer
Merrill Lynch & Co., Inc.



RAKESH SACHDEV
Former Chief Executive Officer
of Platform Specialty Products
Corporation (now known as
Element Solutions Inc)

⁽¹⁾ Member of the Audit Committee

⁽²⁾ Member of the Compensation Committee

⁽³⁾ Member of the Nominating and Policies Committee

EXECUTIVE OFFICERS

BENJAMIN GLIKLICH
Chief Executive Officer

SCOT R. BENSON
President and Chief Operating Officer

JOHN E. CAPPS
Executive Vice President—
General Counsel and Secretary

CAREY J. DORMAN
Chief Financial Officer

INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

PricewaterhouseCoopers LLP
New York, New York

REGISTRAR & TRANSFER AGENT

Computershare
P.O. Box 30170
College Station, Texas 77842

ANNUAL REPORT ON FORM 10-K

This Annual Report and our annual report on Form 10-K for the fiscal year ended December 31, 2018, including our financial statements and the financial statement schedule, are available without charge by written request to Investor Relations.

INVESTOR RELATIONS

Yash Nehete
Senior Associate, Corporate
Development and IR
Element Solutions Inc
383 Main Ave, 6th Floor
Norwalk, CT 06851
(561) 406-8465

SECURITIES LISTING

Our shares of common stock are listed on the NYSE. Ticker symbol: ESI

