

**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, 2019

OR

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

For the transition period from _____ to _____

Commission File Number 1-71



HEXION INC.

(Exact name of registrant as specified in its charter)

New Jersey
(State of incorporation)

13-0511250
(I.R.S. Employer Identification No.)

180 East Broad St., Columbus, OH 43215
(Address of principal executive offices)

614-225-4000
(Registrant's telephone number)

SECURITIES REGISTERED PURSUANT TO SECTION 12(b) OF THE ACT:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
None		None

(Former name, former address and fiscal year, if changed since last report)

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 ☒ x.

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒ x.

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 ☒ x.

Explanatory Note: While the registrant is not subject to the filing requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, it has filed all reports required to be filed by such filing requirements during the preceding 12 months.

Indicate by check mark whether the registrant has submitted electronically, if any, every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ x No ☐ o.

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

Large accelerated filer	☐ o	Accelerated filer	☐ o
Non-accelerated filer	☒ x	Smaller reporting company	☐ o
		Emerging growth company	☐ o

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. ☐ o

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

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. ☒ x

At December 31, 2019, the aggregate market value of voting and non-voting common equity of the Registrant held by non-affiliates was zero.

Number of shares of common stock, par value \$0.01 per share, outstanding as of the close of business on March 1, 2020: 100

Documents incorporated by reference. None

HEXION INC.

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PART I

(dollars in millions)

Forward Looking and Cautionary Statements

Certain statements in this report, including without limitation, certain statements made under Item 1, "Business," and Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations," are forward-looking statements within the meaning of and made pursuant to the safe harbor provisions of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. In addition, our management may from time to time make oral forward-looking statements. All statements, other than statements of historical facts, are forward-looking statements. Forward-looking statements may be identified by the words "believe," "expect," "anticipate," "project," "might," "plan," "estimate," "may," "will," "could," "should," "seek" or "intend" and similar expressions. Forward-looking statements reflect our current expectations and assumptions regarding our business, the economy and other future events and conditions and are based on currently available financial, economic and competitive data and our current business plans. Actual results could vary materially depending on risks and uncertainties that may affect our operations, markets, services, prices and other factors as discussed in the Risk Factors section of this report and our other filings with the Securities and Exchange Commission (the "SEC"). While we believe our assumptions are reasonable, we caution you against relying on any forward-looking statements as it is very difficult to predict the impact of known factors, and it is impossible for us to anticipate all factors that could affect our actual results. Important factors that could cause actual results to differ materially from those in the forward-looking statements include, but are not limited to, a weakening of global economic and financial conditions, interruptions in the supply of or increased cost of raw materials, the loss of, or difficulties with the further realization of, cost savings in connection with our strategic initiatives, the impact of our indebtedness, our failure to comply with financial covenants under our credit facilities or other debt, pricing actions by our competitors that could affect our operating margins, changes in governmental regulations and related compliance and litigation costs and the other factors listed in the Risk Factors section of this report and in our other SEC filings. For a more detailed discussion of these and other risk factors, see the Risk Factors section of this report and our most recent filings made with the SEC. All forward-looking statements are expressly qualified in their entirety by this cautionary notice. The forward-looking statements made by us speak only as of the date on which they are made. Factors or events that could cause our actual results to differ may emerge from time to time. We undertake no obligation to publicly update or revise any forward-looking statement as a result of new information, future events or otherwise, except as otherwise required by law.

ITEM 1 - BUSINESS

Overview

Hexion Inc. ("Hexion" or the "Company"), a New Jersey corporation with predecessors dating from 1899, is one of the world's largest producers of thermosetting resins, or thermosets, and a leading producer of adhesive and structural resins and coatings. Thermosetting resins include materials such as phenolic resins, epoxy resins and urethane resins. Our products include a broad range of critical components and formulations used to impart valuable performance characteristics such as durability, gloss, heat resistance, adhesion, and strength to our customers and their customers' final products. We serve highly diversified growing end-markets such as residential and non-residential construction, wind energy, industrial, automotive, consumer goods, and electronics.

Our business is organized based on the products we offer and the markets we serve. At December 31, 2019, we had three reportable segments: Forest Products Resins; Epoxy, Phenolic and Coating Resins; and Corporate and Other. Effective January 1, 2020, we have changed our segment reporting structure and aligned the reporting structure around two growth platforms: Adhesives; and Coatings and Composites. Corporate and Other will continue to be a reportable segment. See Note 18 in Item 8 of Part II of this Annual Report on Form 10-K for more information.

Emergence from Chapter 11 Bankruptcy

On April 1, 2019, the Company, Hexion Holdings LLC, Hexion LLC and certain of the Company's subsidiaries (collectively, the "Debtors") filed voluntary petitions (the "Bankruptcy Petitions") for reorganization under Chapter 11 ("Chapter 11") of the U.S. Bankruptcy Code (the "Bankruptcy Code") in the United States Bankruptcy Court for the District of Delaware, (the "Bankruptcy Court"). The Chapter 11 proceedings were jointly administered under the caption *In re Hexion TopCo, LLC, No. 19-10684* (the "Chapter 11 Cases"). The Debtors continued to operate their businesses as "debtors-in-possession" under the jurisdiction of the Bankruptcy Court and in accordance with the applicable provisions of the Bankruptcy Code and orders of the Bankruptcy Court.

On June 25, 2019, the Court entered an order (the "Confirmation Order") confirming the Second Amended Joint Chapter 11 Plan of Reorganization of Hexion Holdings LLC and its Debtor Affiliates under Chapter 11 (the "Plan"). On the morning of July 1, 2019, in accordance with the terms of the Plan and the Confirmation Order, the Plan became effective and the Debtors emerged from bankruptcy (the "Emergence").

As a result of our reorganization and emergence from Chapter 11 on the morning of July 1, 2019 (the "Effective Date"), our direct parent is Hexion Intermediate Holding 2, Inc. ("Hexion Intermediate"), a holding company and wholly owned subsidiary of Hexion Intermediate Holding 1, Inc., a holding company and wholly owned subsidiary of Hexion Holdings Corporation, the ultimate parent of Hexion ("Hexion Holdings"). Prior to its reorganization, the Company's parent was Hexion LLC, a holding company and wholly owned subsidiary of Hexion Holdings LLC (now known as Hexion TopCo, LLC or "TopCo"), the previous ultimate parent entity of Hexion, which was controlled by investment funds managed by affiliates of Apollo Management Holdings, L.P. (together with Apollo Global Management, Inc. and its subsidiaries, "Apollo").

Fresh Start Accounting

On the Effective Date, in accordance with ASC 852, the Company applied fresh start accounting to its financial statements as (i) the holders of existing voting shares of the Company prior to its emergence received less than 50% of the voting shares of the Company outstanding following its emergence from bankruptcy and (ii) the reorganization value of the Company's assets immediately prior to confirmation of the plan of reorganization was less than the post-petition liabilities and allowed claims. Fresh start accounting was applied to the Company's consolidated financial statements as of July 1, 2019, the date it emerged from bankruptcy, which resulted in a new basis of accounting and the Company became a new entity for financial reporting purposes. As a result, the Company allocated the reorganization value of the Company to its individual assets based on their estimated fair values. Reorganization value represents the fair value of the Company's assets before considering liabilities. The excess reorganization value over the fair value of identified tangible and intangible assets was reported as goodwill. Refer to Note 4 in Item 8 of Part II of this Annual Report on Form 10-K for more information.

Financial Results Summary

Our financial results for the period from January 1, 2019 through July 1, 2019 and for fiscal years ended 2018 and 2017 are referred to as those of the "Predecessor" period. Our financial results for the period from July 2, 2019 through December 31, 2019 are referred to as those of the "Successor" period. Our results of operations as reported in our Consolidated Financial Statements for these periods are prepared in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP"), which requires that we report on our results for the period from January 1, 2019 through July 1, 2019 and the period from July 2, 2019 through December 31, 2019 separately.

We do not believe that reviewing the results of these periods in isolation would be useful in identifying trends in or reaching conclusions regarding our overall operating performance. We believe that the key performance metrics such as Net sales, Operating income and Segment EBITDA for the Successor period when combined with the 2019 Predecessor period provides more meaningful comparisons to other periods and are useful in identifying current business trends. Accordingly, in addition to presenting our results of operations as reported in our Consolidated Financial Statements in accordance with U.S. GAAP, the tables and discussions below also present the combined results for the year ended December 31, 2019.

The combined results (referenced as "Non-GAAP Combined" or "Combined") for the year ended December 31, 2019, which we refer to herein as results for the "Year Ended December 31, 2019" represent the sum of the reported amounts for the Predecessor period January 1, 2019 through July 1, 2019 combined with the Successor period from July 2, 2019 through December 31, 2019. These Combined results are not considered to be prepared in accordance with U.S. GAAP and have not been prepared as pro forma results under applicable regulations. The Non-GAAP Combined operating results are presented for supplemental purposes only, may not reflect the actual results we would have achieved absent our emergence from bankruptcy, may not be indicative of future results and should not be viewed as a substitute for the financial results of the Predecessor period and Successor period presented in accordance with U.S. GAAP.

Products and Markets

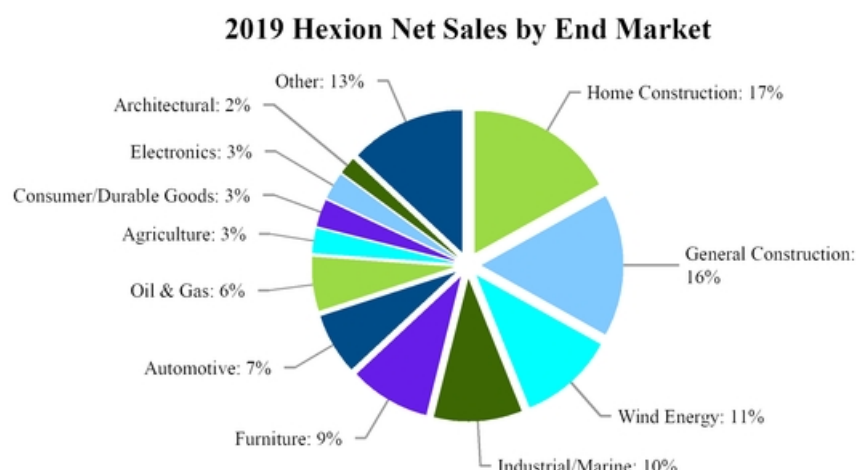
We have a broad range of thermoset resin technologies, with high quality research, applications development and technical service capabilities. We provide a broad array of thermosets and associated technologies, and have significant market positions in each of the key markets that we serve.

Our products are used in thousands of applications and are sold into diverse markets, such as forest products, architectural and industrial paints, packaging, consumer products, composites and automotive coatings. Major industry sectors that we serve include industrial/marine, construction, consumer/durable goods, automotive, wind energy, aviation, electronics, architectural, civil engineering, repair/remodeling and oil and gas field support. The diversity of our products limits our dependence on any one market or end-use. We have a history of product innovation and success in introducing new products to new markets, as evidenced by more than 750 granted patents, the majority of which relate to the development of new products and manufacturing processes, and we are constantly looking at ways to introduce new products in our currently established markets.

As of December 31, 2019, we had 45 active production sites around the world. Through our worldwide network of strategically located production facilities, we serve more than 3,100 customers in approximately 85 countries. Our position in certain additives, complementary materials and services further enables us to leverage our core thermoset technologies and provide our customers with a broad range of product solutions. As a result of our focus on innovation and a high level of technical service, we have cultivated long-standing customer relationships. Our global customers include leading companies in their respective industries, such as Akzo Nobel, BASF, Norbord, Louisiana Pacific, Monsanto, Owens Corning, PPG Industries, Sherwin Williams and Weyerhaeuser.

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In 2019, our revenue base included sales in the following end markets:



Industry & Competitors

We are a large participant in the specialty chemicals industry. Thermosetting resins are generally considered specialty chemical products because they are sold primarily on the basis of performance, technical support, product innovation and customer service. However, as a result of the impact of the ongoing global economic uncertainty and overcapacity in certain markets, certain of our competitors have focused more on price to retain business and market share, which we have selectively followed in certain markets to maintain market share and remain a market leader.

We compete with many companies in most of our product lines, including large global chemical companies and small specialty chemical companies. No single company competes with us across all of our segments and existing product lines. The principal competitive factors in our industry include technical service, breadth of product offerings, product innovation, product quality and price. Some of our competitors are larger, have greater financial resources and may be able to better withstand adverse changes in industry conditions, including pricing, and the economy as a whole. Further, our competitors may have more resources to support continued expansion than we do. Some of our competitors also have a greater range of products and may be more vertically integrated than we are within specific product lines or geographies.

We believe that the principal factors that contribute to success in the specialty chemicals market, and our ability to maintain our position in the markets we serve, are (i) consistent delivery of high-quality products; (ii) favorable process economics; (iii) the ability to provide value to customers through both product attributes and strong technical service and (iv) an international footprint and presence in growing and developing markets.

Our Businesses

The following is a discussion of our reportable segments, their corresponding major product lines and the primary end-use applications of our key products as of December 31, 2019.

Forest Products Resins Segment

2019 Net Sales: \$1,485

Formaldehyde Based Resins and Intermediates

We are the leading producer of formaldehyde-based resins for the North American forest products industry, and also hold significant positions in Latin America, Australia, New Zealand, and Europe. Formaldehyde-based resins, also known as forest products resins, are a key adhesive and binding ingredient used in the production of a wide variety of engineered lumber products, including medium-density fiberboard ("MDF"), particleboard, oriented strand board ("OSB") and various types of plywood and laminated veneer lumber ("LVL"). These products are used in a wide range of applications in the construction, remodeling and furniture industries. Nearly all of our formaldehyde requirements for the production of forest products resins are provided by internal production, giving us a competitive advantage versus our non-integrated competitors.

In addition, we are a significant producer of formaldehyde, a key raw material used to manufacture thousands of other chemicals and products, including the manufacture of methylene diphenyl diisocyanate ("MDI") and butanediol ("BDO"). Formaldehyde consuming products are used in multiple applications including agricultural, construction, energy and automotive industries.

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Both forest products resins and formaldehyde have relatively short shelf lives, and as such, our manufacturing facilities are strategically located in close proximity to our customers.

Products	Key Applications
Forest Products Resins:	
Engineered Wood Resins	Softwood and hardwood plywood, OSB, LVL, particleboard, MDF and decorative laminates
Specialty Wood Adhesives	Laminated beams, cross-laminated timber, structural and nonstructural fingerjoints, wood composite I-beams, truck-decking, cabinets, doors, windows, furniture, molding and millwork and paper laminations
Wax Emulsions	Moisture resistance for panel boards and other specialty applications
Principal Competitors: Arclin, Georgia-Pacific, Huntsman and BASF	

Products	Key Applications
Formaldehyde Applications:	
Formaldehyde	MDI, BDO, herbicides and fungicides, scavengers for oil and gas production, fabric softeners, urea formaldehyde resins, phenol formaldehyde resins, melamine formaldehyde resins, hexamine and other catalysts
Principal Competitors: Foremark Performance Chemicals, Georgia-Pacific and Arclin	

Epoxy, Phenolic and Coating Resins Segment **2019 Net Sales: \$1,889**

Epoxy Specialty Resins

We are a leading producer of epoxy specialty resins, modifiers and curing agents in Europe and the United States with a global reach to our end markets, which include other regions such as China and Latin America. Epoxy resins are the fundamental component of many types of materials and are often used in the automotive, construction, wind energy, aerospace and electronics industries due to their superior adhesion, strength and durability. We internally consume approximately 30% of our liquid epoxy resin ("LER") production in specialty composite, coating and adhesive applications, which ensures a consistent supply of our required intermediate materials. Our position in basic epoxy resins, along with our technology and service expertise, has enabled us to offer formulated specialty products in certain markets. In composites, our specialty epoxy products are used either as replacements for traditional materials such as metal, wood and ceramics, or in applications where traditional materials do not meet demanding engineering specifications.

We are a leading producer of resins that are used in fiber reinforced composites. Composites are a fast growing class of materials that are used in a wide variety of applications ranging from aircraft components and wind turbine blades to sports equipment, and increasingly in automotive and transportation. We supply epoxy resin systems to composite fabricators in the wind energy, automotive and pipe markets.

Epoxy specialty resins are also used for a variety of high-end coating applications that require the superior adhesion, corrosion resistance and durability of epoxy, such as protective coatings for industrial flooring, pipe, marine and construction applications and automotive coatings. Epoxy-based surface coatings are among the most widely used industrial coatings due to their long service life and broad application functionality combined with overall economic efficiency. We also leverage our resin and additives position to supply custom resins to specialty coatings formulators.

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Products	Key Applications
Adhesive Applications:	
Civil Engineering	Building and bridge construction, concrete enhancement and corrosion protection
Adhesives	<i>Automotive:</i> hem flange adhesives and panel reinforcements <i>Construction:</i> ceramic tiles, chemical dowels and marble <i>Aerospace:</i> metal and composite laminates <i>Electronics:</i> chip adhesives and solder masks
Electrical Applications:	
Electronic Resins	Unclad sheets, paper impregnation and electrical laminates for printed circuit boards
Electrical Castings	Generators and bushings, transformers, medium and high-voltage switch gear components, post insulators, capacitors and automotive ignition coils

Principal Competitors: Olin, Nan Ya, Huntsman, Spolchemie, Leuna Harze and Aditya Birla (Thai Epoxy)

Products	Key Applications
Composites:	
Composite Epoxy Resins	Pipes and tanks, automotive, sports (ski, snowboard, golf), boats, construction, aerospace, wind energy and industrial applications

Principal Competitors: Olin, Aditya Birla (Thai Epoxy), Huntsman, Swancor, Bohui, Techstorm and Kangda

Products	Key Applications
Coating Applications:	
Floor Coatings (LER, Solutions, Performance Products)	Chemically resistant, antistatic and heavy duty flooring used in hospitals, the chemical industry, electronics workshops, retail areas and warehouses
Ambient Cured Coatings (LER, Solid Epoxy Resin ("SER") Solutions, Performance Products)	Marine (manufacturing and maintenance), shipping containers and large steel structures (such as bridges, pipes, plants and offshore equipment)
Waterborne Coatings (EPI-REZ™ Epoxy Waterborne Resins)	Substitutes of solvent-borne products in both heat cured and ambient cured applications

Principal Competitors: Olin, Huntsman, Nan Ya, Evonik and Allnex

Basic Epoxy Resins and Intermediates

We are one of the world's largest suppliers of basic epoxy resins, such as SER and LER. These base epoxies are used in a wide variety of industrial coatings applications. In addition, we are a major producer of bisphenol-A ("BPA") and epichlorohydrin ("ECH"), key precursors in the downstream manufacture of basic epoxy resins and epoxy specialty resins. We internally consume the majority of our BPA, and all of our ECH, which ensures a consistent supply of our required intermediate materials.

Products	Key Applications
Electrocoat (LER, SER, BPA)	Automotive, general industry and white goods (such as appliances)
Powder Coatings (SER, Performance Products)	White goods, pipes for oil and gas transportation, general industry (such as heating radiators) and automotive (interior parts and small components)
Heat Cured Coatings (LER, SER)	Metal packaging and coil-coated steel for construction and general industry

Principal Competitors: Olin, Kukdo, Nan Ya and the Formosa Plastics Group and CCP

Versatic Acids and Derivatives

We are the world's largest producer of Versatic acids and derivatives. Versatic acids and derivatives are specialty monomers that provide significant performance advantages for finished coatings, including superior adhesion, hydrolytic stability, water resistance, appearance and ease of application. Our products include basic Versatic acids and derivatives sold under the Versatic™, VEOVA™ vinyl ester and CARDURA™ glycidyl ester names. Applications for these specialty monomers include decorative, automotive and protective coatings, as well as other uses, such as adhesives and intermediates.

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Products	Key Applications
CARDURA™ glycidyl ester	Automotive repair/refinishing, automotive original equipment manufacturing ("OEM") and industrial coatings
Versatic™ Acids	Chemical intermediates (e.g., for peroxides, pharmaceuticals and agrochemicals) and adhesion promoters (e.g., for tires)
VEOVA™ vinyl ester	Architectural coatings, construction and adhesives

Principal Competitors: ExxonMobil and Hebei Shield Excellence Technology

Phenolic Specialty Resins and Molding Compounds

We are one of the leading producers of phenolic specialty resins, which are used in applications that require extreme heat resistance and strength, such as after-market automotive and OEM truck brake pads, filtration, aircraft components and foundry resins. These products are sold under globally recognized brand names such as BORDEN, BAKELITE, DURITE and CELLOBOND. Our phenolic specialty resins are known for their binding qualities and are used widely in the production of mineral wool and glass wool used for commercial and domestic insulation applications. We are also a leading producer of phenolic resin encapsulated sand and ceramic substrates that are used in oil field applications. Our highly specialized compounds and resins are designed to perform well under extreme conditions, such as intense heat, high-closure stress and corrosive environments, that characterize oil and gas drilling, and are also used to enhance oil and gas recovery rates and extend well life.

Products	Key Applications
Phenolic Specialty Resins:	
Composites and Electronic Resins	Aircraft & rail components, ballistic applications, industrial grating, pipe, jet engine components, computer chip encasement and photolithography
Automotive Phenol Formaldehyde Resins	Acoustical insulation, engine filters, brakes, friction materials, interior components, molded electrical parts and assemblies
Construction Phenol Formaldehyde Resins and Urea Formaldehyde Resins	Fiberglass insulation, floral foam, insulating foam, lamp cement for light bulbs, molded appliance and electrical parts, molding compounds, sandpaper, fiberglass mat and coatings
Molding Compounds:	
Phenolic, Epoxy, Unsaturated Polyesters	High performance automotive transmissions and under-hood components, heat resistant knobs and bases, switches and breaker components, pot handles and ashtrays
Glass	High load, dimensionally stable automotive underhood parts and commutators
Phenolic Encapsulated Substrates:	
Resin Encapsulated Proppants	Oil and gas fracturing

Principal Competitors: Sumitomo (Durez), SI Group, Plenco, Dynea International, Arclin, Georgia-Pacific, Shenquan, Covia Holdings Corporation, Preferred Sands, Badger Mining Corporation, and Carbo Ceramics

Corporate and Other Segment

Our Corporate and Other segment primarily includes corporate general and administrative expenses that are not allocated to the other segments, such as shared service and administrative functions, foreign exchange gains and losses and legacy company costs.

For additional information about our segments, see Note18 to our Consolidated Financial Statements in Item 8 of Part II of this Annual Report on Form 10-K.

Marketing, Customers and Seasonality

Our products are sold to industrial users worldwide through a combination of a direct sales force that services our larger customers and third-party distributors that more cost-effectively serve our smaller customers. Our customer service and support network is made up of key regional customer service centers. We have global account teams that serve the major needs of our global customers for technical service and supply and commercial term requirements. Where operating and regulatory factors vary from country to country, these functions are managed locally.

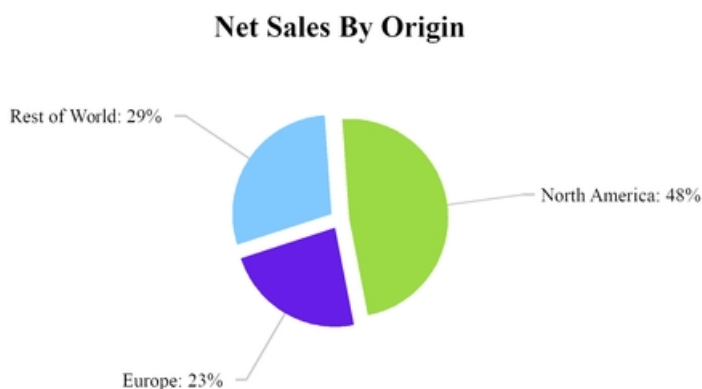
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In 2019, our largest customer accounted for approximately 3% of our net sales, and our top ten customers accounted for approximately 20% of our net sales. Neither our overall business nor any of our reporting segments depends on any single customer or a particular group of customers; therefore, the loss of any single customer would not have a material adverse effect on either of our two reporting segments or the Company as a whole. Our primary customers are manufacturers, and the demand for our products is seasonal in certain of our businesses, with the highest demand in the summer months and lowest in the winter months. Therefore, the dollar amount of our backlog orders as of December 31, 2019 is not significant. Demand for our products can also be cyclical, as general economic health and industrial and commercial production levels are key drivers for our business.

International Operations

Our non-U.S. operations accounted for 56%, 56% and 58% of our sales in 2019, 2018 and 2017, respectively. While our international operations may be subject to a number of additional risks, such as exposure to foreign currency exchange risk, we do not believe that our foreign operations, on the whole, carry significantly greater risk than our operations in the United States. Information about sales by geographic region for the past three years and long-lived assets by geographic region for the past two years can be found in Note 18 in Item 8 of Part II of this Annual Report on Form 10-K. More information about our methods and actions to manage exchange risk and interest rate risk can be found in Item 7A of Part II of this Annual Report on Form 10-K.

In 2019, our revenue base included sales in the following regions:



Raw Materials

In 2019, we purchased approximately \$2.0 billion of raw materials, representing approximately 75% of our cost of sales (excluding depreciation expense). The three largest raw materials that we use are phenol, methanol and urea, which collectively represented approximately 50% of our total raw material expenditures in 2019. The majority of raw materials that we use to manufacture our products are available from more than one source, and are readily available in the open market. We have long-term purchase agreements for certain raw materials that ensure the availability of adequate supply. These agreements generally have periodic price adjustment mechanisms and do not have minimum annual purchase requirements. Smaller quantity materials that are single sourced generally have long-term supply contracts to maximize supply reliability. Prices for our main feedstocks are generally driven by underlying petrochemical benchmark prices and energy costs, which are subject to price fluctuations. Although we seek to offset increases in raw material prices with increases in our product prices, we may not always be able to do so, and there are periods when price increases lag behind raw material price increases.

Research and Development

Our research and development activities are geared towards developing and enhancing products, processes and application technologies so that we can maintain our position as the world's largest producer of thermosetting resins. We focus on:

- developing new or improved applications based on our existing product lines and identified market trends;
- developing new resin products and applications for customers to improve their competitive advantage and profitability;
- providing premier technical service for customers of specialty products;
- providing technical support for manufacturing locations and assisting in optimizing our manufacturing processes;
- ensuring that our products are manufactured consistent with our global environmental, health and safety policies and objectives;
- developing lower cost manufacturing processes globally; and
- expanding our production capacity.

We have over 360 scientists and technicians worldwide. Our research and development facilities include a broad range of synthesis, testing and formulating equipment and small-scale versions of customer manufacturing processes for applications development and demonstration.

More recently, we have focused research and development resources on the incorporation of green chemistry principles into technology innovations to remain competitive and to address our customers' demands for more environmentally preferred solutions. Our efforts have focused on developing resin technologies that reduce emissions, maximize efficiency and increase the use of bio-based raw materials. Some examples of meaningful results of our investment in the development of green products include:

- EPIKOTE™ / EPIKURE™ epoxy systems for wind energy applications, which provide superior mechanical and process properties, reducing air emissions when hours of energy are created;
- EPIKOTE™ and Bakelite® resin systems for automotive applications, which produce lightweight automotive composite components and other automotive parts that allow customers to build cars with better mileage, reducing air emissions without sacrificing performance;
- EcoBind™ Resin Technology, an ultra low-emitting binder resin used to produce engineered wood products,
- Epi-Rez™ Epoxy Waterborne Resins, which provide for lower volatile organic compounds, reducing air emissions; and
- VeoVa™ vinyl ester, a Versatics acid and derivatives product, which is an isocyanate-free resin.

In 2019, 2018 and 2017, our research and development and technical services expense was \$50, \$53 and \$58, respectively. We take a customer-driven approach to discovering new applications and processes and providing customer service through our technical staff. Through regular direct contact with our key customers, our research and development associates can become aware of evolving customer needs in advance, and can anticipate their requirements to more effectively plan customer programs. We also focus on continuous improvement of plant yields and production capacity and reduction of fixed costs.

Intellectual Property

As of December 31, 2019, we own, license or have rights to over 750 patents and over 1,100 registered trademarks, as well as various patent and trademark applications and technology licenses around the world, which we currently use or hold for use in our operations. A majority of our patents relate to developing new products and processes for manufacturing and will expire between 2020 and 2037. We renew our trademarks on a regular basis. While we view our patents and trademarks to be valuable, because of the broad scope of our products and services, we do not believe that the loss or expiration of any single patent or trademark would have a material adverse effect on our results of operations, financial position or the continuation of our business.

Industry Regulatory Matters

Domestic and international laws regulate the production and marketing of chemical substances. Almost every country has its own legal procedures for registration and import. Of these, the laws and regulations in the European Union, the United States (Toxic Substances Control Act) and China are the most significant to our business. Additionally, other laws and regulations may also limit our expansion into other countries. Chemicals that are not included on one or more of these, or any other country's chemical inventory lists, can usually be registered and imported, but may first require additional testing or submission of additional administrative information.

The European Commission enacted a regulatory system in 2006, known as Registration, Evaluation, Authorization and Restriction of Chemical substances ("REACH"), which requires manufacturers, importers and consumers of certain chemicals to register these chemicals and evaluate their potential impact on human health and the environment. As REACH matures, significant market restrictions could be imposed on the current and future uses of chemical products that we use as raw materials or that we sell as finished products in the European Union. Other countries may also enact similar regulations.

Environmental Regulations

Our policy is to operate our plants in a manner that protects the environment, health and safety of our employees, customers and communities. We have implemented company-wide environmental, health and safety policies managed by our Environmental, Health and Safety ("EH&S") department and overseen by the EH&S Committee of Hexion Holdings' Board of Directors. Our EH&S department provides support and oversight to our operations worldwide to ensure compliance with environmental, health and safety laws and regulations. This responsibility is executed via training, communication of EH&S policies, formulation of relevant policies and standards, EH&S audits and incident response planning and implementation. Our EH&S policies include systems and procedures that govern environmental emissions, waste generation, process safety management, handling, storage and disposal of hazardous substances, worker health and safety requirements, site security, emergency planning and response and product stewardship.

Our operations involve the use, handling, processing, storage, transportation and disposal of hazardous materials, and we are subject to extensive environmental regulation at the federal, state and international levels. We are also exposed to the risk of claims for environmental remediation or restoration. Our production facilities require operating permits that are subject to renewal or modification. Violations of environmental laws or permits may result in restrictions being imposed on operating activities, substantial fines, penalties, damages or other costs. In addition, statutes such as the federal Comprehensive Environmental Response, Compensation and Liability Act and comparable state and foreign laws impose strict, joint and several liability for investigating and remediating the consequences of spills and other releases of hazardous materials, substances and wastes at current and former facilities, as well as third-party disposal sites. Other laws permit individuals to seek recovery of damages for alleged personal injury or property damage due to exposure to hazardous substances and conditions at our facilities or to hazardous substances otherwise owned, sold or controlled by us. Therefore, notwithstanding our commitment to environmental management and environmental health and safety, we may incur liabilities in the future, and these liabilities may result in a material adverse effect on our business, financial condition, results of operations or cash flows.

Although our environmental policies and practices are designed to ensure compliance with international, federal and state laws and environmental regulations, future developments and increasingly stringent regulation could require us to make additional unforeseen environmental expenditures. In addition, our former operations, including our ink, wallcoverings, film, phosphate mining and processing, thermoplastics and food and dairy operations, may give rise to claims relating to our period of ownership.

We expect to incur future costs for capital improvements and general compliance under environmental, health and safety laws, including costs to acquire, maintain and repair pollution control equipment. In 2019, we incurred related capital expenditures of \$20. We estimate that capital expenditures in 2020 for environmental controls at our facilities will be between \$25 and \$30. This estimate is based on current regulations and other requirements, but it is possible that a material amount of capital expenditures, in addition to those we currently anticipate, could be necessary if these regulations or other requirements or other facts change.

Employees

At December 31, 2019, we had approximately 4,000 employees. Approximately 40% of our employees are members of a labor union or are represented by workers' councils that have collective bargaining agreements, including most of our European employees. We believe that we have good relations with our union and non-union employees.

Our Board of Directors expects honest and ethical conduct from every employee. We strive to adhere to the highest ethical standards in the conduct of our business and to comply with all laws and regulations that are applicable to the business. Each employee has a responsibility to maintain and advance the ethical values of the Company. In support of this, our employees receive training to emphasize the importance of compliance with our Code of Conduct.

Where You Can Find More Information

The public may read and copy any materials that we file with the Securities and Exchange Commission (the "SEC") on the SEC's website at www.sec.gov. In addition, our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to these reports are available free of charge to the public through our internet website at www.hexion.com under "Investor Relations - SEC Filings". The content on any website referenced in this filing is not incorporated by reference into this filing unless expressly noted otherwise.

ITEM 1A - RISK FACTORS

(In millions, except share data)

Following are our principal risks. These factors may or may not occur, and we cannot express a view on the likelihood that any of these may occur. Other factors may exist that we do not consider significant based on information that is currently available or that we are not currently able to anticipate. Any of the following risks could materially adversely affect our business, financial condition or results of operations and prospects.

Risks Related to Our Business

If global economic conditions are weak or deteriorate, it will negatively impact our business operations, results of operations and financial condition.

Changes in global economic and financial market conditions could impact our business operations in a number of ways including, but not limited to, the following:

- reduced demand in key customer segments, such as building, construction, wind energy, oil and gas, automotive and electronics, compared to prior years;
- weak economic conditions in our primary regions of operations: U.S., Europe, and Asia;
- payment delays by customers and reduced demand for our products caused by customer insolvencies and/or the inability of customers to obtain adequate financing to maintain operations
- insolvency of suppliers or the failure of suppliers to meet their commitments resulting in product delays;
- more onerous credit and commercial terms from our suppliers such as shortening the required payment period for outstanding accounts receivable or reducing or eliminating the amount of trade credit available to us; and
- potential delays in accessing our ABL Facility and the potential inability of one or more of the financial institutions included in our syndicated ABL Facility to fulfill their funding obligations.

Many of our key customer segments are sensitive to macroeconomic conditions, which are currently uncertain. Accordingly, the short and long-term outlook for our business is difficult to predict and our results of operations could, as a result of this uncertainty, fall below our expectations.

Fluctuations in direct or indirect raw material costs could have an adverse impact on our business.

Raw materials costs made up approximately 75% of our cost of sales (excluding depreciation expense) in 2019. The prices of our direct and indirect raw materials have been, and we expect them to continue to be, volatile. If the cost of direct or indirect raw materials increases significantly and we are unable to offset the increased costs with higher selling prices, our profitability will decline. Increases in prices for our products could also hurt our ability to remain both competitive and profitable in the markets in which we compete.

Although some of our material contracts include competitive price clauses that allow us to buy outside the contract if market pricing falls below contract pricing, and certain contracts have minimum-maximum monthly volume commitments that allow us to take advantage of spot pricing, we may be unable to purchase raw materials at market prices. In addition, some of our customer contracts have fixed prices for a certain term, and as a result, we may not be able to pass on raw material price increases to our customers immediately, if at all. Due to differences in timing of the pricing trigger points between our sales and purchase contracts, there is often a "lead-lag" impact. In many cases this "lead-lag" impact can negatively impact our margins in the short term in periods of rising raw material prices and positively impact them in the short term in periods of falling raw material prices. Future raw material prices may be impacted by new laws or regulations, suppliers' allocations to other purchasers, changes in our supplier manufacturing processes as some of our products are byproducts of these processes, interruptions in production by suppliers, natural disasters, volatility in the price of crude oil and related petrochemical products and changes in exchange rates.

An inadequate supply of direct or indirect raw materials and intermediate products could have a material adverse effect on our business.

Our manufacturing operations require adequate supplies of raw materials and intermediate products on a timely basis. The loss of a key source or a delay in shipments could have a material adverse effect on our business. Raw material availability may be subject to curtailment or change due to, among other things:

- new or existing laws or regulations;
- suppliers' allocations to other purchasers;
- interruptions in production by suppliers; and
- natural disasters.

Many of our raw materials and intermediate products are available in the quantities we require from a limited number of suppliers. Should any of our key suppliers fail to deliver these raw materials or intermediate products to us or no longer supply us, we may be unable to purchase these materials in necessary quantities, which could adversely affect our volumes, or may not be able to purchase them at prices that would allow us to remain competitive. During the past several years, certain of our suppliers have experienced force majeure events rendering them unable to deliver all, or a portion of, the contracted-for raw materials. On these occasions, we have been forced to limit production or were forced to purchase replacement raw materials in the open market at significantly higher costs or place our customers on an allocation of our products. In the past, some of our customers have chosen to discontinue or decrease the use of our products as a result of these measures. We have experienced force majeure events by certain of our suppliers which have had significant negative impacts on our business. For example, over the past several years there have been various supply interruption events due to hurricanes, supplier production fires and other supply issues which have impacted our ability to obtain key raw materials. Additionally, we cannot predict whether new regulations or restrictions may be imposed in the future which may result in reduced supply or further increases in prices. We cannot assure investors that we will be able to renew our current materials contracts or enter into replacement contracts on commercially acceptable terms, or at all. Fluctuations in the price of these or other raw materials or intermediate products, the loss of a key source of supply or any delay in the supply could result in a material adverse effect on our business.

Our production facilities are subject to significant operating hazards which could cause environmental contamination, personal injury and loss of life, and severe damage to, or destruction of, property and equipment.

Our production facilities are subject to hazards associated with the manufacturing, handling, storage and transportation of chemical materials and products, including human exposure to hazardous substances, pipeline and equipment leaks and ruptures, explosions, fires, inclement weather and natural disasters, mechanical failures, unscheduled downtime, transportation interruptions, remedial complications, chemical spills, discharges or releases of toxic or hazardous substances or gases, storage tank leaks and other environmental risks. Additionally, a number of our operations are adjacent to operations of independent entities that engage in hazardous and potentially dangerous activities. Our operations or adjacent operations could result in personal injury or loss of life, severe damage to or destruction of property or equipment, environmental damage, or a loss of the use of all or a portion of one of our key manufacturing facilities. Such events at our facilities, or adjacent third-party facilities, could have a material adverse effect on us.

We may incur losses beyond the limits or coverage of our insurance policies for liabilities that are associated with these hazards. In addition, various kinds of insurance for companies in the chemical industry have not been available on commercially acceptable terms, or, in some cases, have been unavailable altogether. In the future, we may not be able to obtain coverage at current levels, and our premiums may increase significantly on coverage that we maintain.

Environmental obligations and liabilities could have a substantial negative impact on our financial condition, cash flows and profitability.

Our operations involve the use, handling, processing, storage, transportation and disposal of hazardous materials and are subject to extensive and complex U.S. federal, state, local and non-U.S. supranational, national, provincial, and local environmental, health and safety laws and regulations. These environmental laws and regulations include those that govern the discharge of pollutants into the air and water, the generation, use, storage, transportation, treatment and disposal of hazardous materials and wastes, the cleanup of contaminated sites, occupational health and safety and those requiring permits, licenses, or other government approvals for specified operations or activities. Our products are also subject to a variety of international, national, regional, state, and provincial requirements and restrictions applicable to the manufacture, import, export or subsequent use of such products. In addition, we are required to maintain, and may be required to obtain in the future, environmental, health and safety permits, licenses, or government approvals to continue current operations at most of our manufacturing and research facilities throughout the world.

Compliance with environmental, health and safety laws and regulations, and maintenance of permits, can be costly and complex, and we have incurred and will continue to incur costs, including capital expenditures and costs associated with the issuance and maintenance of letters of credit, to comply with these requirements. In 2019, we incurred capital expenditures of \$20 to comply with environmental, health and safety laws and regulations and to make other environmental improvements. If we are unable to comply with environmental, health and safety laws and regulations, or maintain our permits, we could incur substantial costs, including fines and civil or criminal sanctions, third party property damage or personal injury claims or costs associated with upgrades to our facilities or changes in our manufacturing processes in order to achieve and maintain compliance, and may also be required to halt permitted activities or operations until any necessary permits can be obtained or complied with, or decide to close the impacted facility. In addition, future developments or increasingly stringent regulations could require us to make additional unforeseen environmental expenditures, which could have a material adverse effect on our business.

Environmental, health and safety requirements change frequently and have tended to become more stringent over time. We cannot predict what environmental, health and safety laws and regulations or permit requirements will be enacted or amended in the future, how existing or future laws or regulations will be interpreted or enforced or the impact of such laws, regulations or permits on future production expenditures, supply chain or sales. Our costs of compliance with current and future environmental, health and safety requirements could be material. Such future requirements include legislation designed to reduce emissions of carbon dioxide and other substances associated with climate change ("greenhouse gases"). The European Union has enacted greenhouse gas emissions legislation and continues to expand the scope of such legislation. The U.S. Environmental Protection Agency (the "USEPA") has promulgated regulations applicable to projects involving greenhouse gas emissions above a certain threshold, and the United States and certain states within the United States have enacted, or are considering, limitations on greenhouse gas emissions. These requirements to limit greenhouse gas emissions could significantly increase our energy costs, and may also require us to incur material capital costs to modify our manufacturing facilities.

In addition, we are subject to liability associated with hazardous substances in soil, groundwater and elsewhere at a number of sites. These include sites that we formerly owned or operated and sites where hazardous wastes and other substances from our current and former facilities and operations have been sent, treated, stored, or recycled or disposed of, as well as sites that we currently own or operate. Depending upon the circumstances, our liability may be strict, joint and several, meaning that we may be held responsible for more than our proportionate share, or even all, of the liability involved regardless of our fault or whether we are aware of the conditions giving rise to the liability. Even where liability has been allocated among parties, we may be subject to material changes in such allocation in the future for a number of reasons, including the discovery of new contamination, the insolvency of a responsible party, or a heightened nexus to the remediation site. Environmental conditions at these sites can lead to environmental cleanup liability and claims against us for personal injury or wrongful death, property damages and natural resource damages, as well as to claims and obligations for the investigation and cleanup of environmental conditions. The extent of any of these liabilities is difficult to predict, but in the aggregate such liabilities could be material.

We have been notified that we are or may be responsible for environmental remediation at a number of sites in North America, Europe and South America. We are also performing a number of voluntary cleanups. The most significant sites at which we are performing or participating in environmental remediation are sites formerly owned by us in Geismar, Louisiana and Plant City, Florida. As the result of former, current or future operations, there may be additional environmental remediation or restoration liabilities or claims of personal injury by employees or members of the public due to exposure or alleged exposure to hazardous materials in connection with our operations, properties or products. Sites sold by us in past years may have significant site closure or remediation costs and our share, if any, may be unknown to us at this time. These environmental liabilities or obligations, or any that may arise or become known to us in the future, could have a material adverse effect on our financial condition, cash flows and profitability.

Future chemical regulatory actions may decrease our profitability.

Several governmental agencies have enacted, are considering or may consider in the future, regulations that may impact our ability to sell certain chemical products in certain geographic areas. The European Registration, Evaluation and Authorization of Chemicals ("REACH") regulation requires manufacturers, importers and consumers of certain chemicals manufactured in, or imported into, the European Union to register such chemicals and evaluate their potential impacts on human health and the environment. REACH may result in certain chemicals being further regulated, restricted or banned from use in the European Union. In addition, the Frank R. Lautenberg Chemical Safety for the 21st Century Act ("LCSA") was signed into law on June 22, 2016, and updates and revises the Toxic Substances Control Act. LCSA requires the implementing agency to conduct risk evaluations on high priority chemicals, which could include chemical products we manufacture. Other countries have implemented, or are considering implementation of, similar chemical regulatory programs. When fully implemented, REACH, LCSA and other similar regulatory programs may result in significant adverse market impacts on the affected chemical products. If we fail to comply with REACH, LCSA or other similar laws and regulations, we may be subject to penalties or other enforcement actions, including fines, injunctions, recalls or seizures, which would have a material adverse effect on our financial condition, cash flows and profitability. Additionally, studies conducted in association with these regulatory programs, or otherwise conducted through trade associations, may result in new information regarding the health effects and environmental impact of our products and raw materials. Such studies could result in future regulations restricting the manufacture or use of our products, liability for adverse environmental or health effects linked to our products, and/or de-selection of our products for specific applications. These restrictions, liability, and product de-selection could have a material adverse effect on our business, our financial condition and/or liquidity.

Because of certain government public health agencies' concerns regarding the potential for adverse human health effects, formaldehyde is a regulated chemical and public health agencies continue to evaluate its safety. A division of the World Health Organization, the International Agency for Research on Cancer, or IARC, and the National Toxicology Program, or NTP, within the U.S. Department of Health and Human Services, have classified formaldehyde as being carcinogenic to humans. The USEPA, under its Integrated Risk Information System, or IRIS, released a draft of its toxicological review of formaldehyde in 2010, stating that formaldehyde meets the criteria to be described as "carcinogenic to humans." The National Academy of Sciences peer reviewed the draft IRIS toxicological review and issued a report in April 2011 that criticized the draft IRIS toxicological review and stated that the methodologies and the underlying science used in the draft IRIS review did not clearly support a conclusion of a causal link between formaldehyde exposure and leukemia. USEPA may or may not issue a revised draft IRIS toxicological review to reflect the NAS findings, including the conclusions regarding a causal link between formaldehyde exposure and leukemia. On March 20, 2019, EPA announced the next set of candidate chemical substances that will undergo review by its LCSA/TSCA risk evaluation program. This announcement formally begins the prioritization process and starts a 9-to-12 month statutory time frame during which the Agency must designate 20 chemical substances as high priority. Formaldehyde was identified as a high-priority candidate chemical for TSCA risk evaluation. Designation of formaldehyde as a high-priority chemical "does not constitute a finding of risk." A high-priority designation means the EPA has nominated formaldehyde for further risk evaluation. Effective January 1, 2016, ECHA classified formaldehyde as a Category 2 Mutagen, but rejected reclassification as a Category 1A Carcinogen. It is possible that new regulatory requirements could be promulgated to limit human exposure to formaldehyde, that we could incur substantial additional costs to meet any such regulatory requirements, and that there could be a reduction in demand for our formaldehyde-based products. These additional costs and reduced demand could have a material adverse effect on our operations and profitability.

BPA, which is manufactured and used as an intermediate at our Deer Park, Texas and Pernis, Netherlands manufacturing facilities, and is also sold directly to third parties, is currently considered under certain state and international regulatory programs as a reproductive toxicant and an "endocrine disrupter," meaning BPA could disrupt normal biological processes. BPA continues to be subject to scientific, regulatory and legislative review and negative media attention. In Europe, the EU Committee for Risk Assessment adopted an opinion to change the existing harmonized classification and labeling of BPA from a category 2 reproductive Toxicant to a category 1B reproductive Toxicant. This classification change was effective beginning March 1, 2018. The EU Member State Committee agreed to add BPA to the Substance of Very High Concern ("SVHC") candidate list based upon its classification as a reproductive toxicant, as well as for its endocrine disrupting properties to both human health and the environment. The REACH Risk Management Option Analysis (RMOA) was released July 6, 2017, in which BPA is identified as

an endocrine disruptor for the environment with no safe threshold, and REACH restrictions are identified as the preferred risk management measure. The California Environmental Protection Agency's Office of Environmental Health Hazard Assessment ("OEHHA") listed BPA under Proposition 65 as a developmental and reproductive toxicant, requiring warning labels unless BPA exposures are shown to be less than a risk-based level (the maximum allowable dose level ("MADL")). As of May 11, 2016, products containing BPA sold into California must comply with Proposition 65's requirements. Despite these hazard designations and listings, the US Food and Drug Administration ("FDA") is also actively engaged in the scientific and regulatory review of BPA and, in a letter submitted to OEHHA dated April 6, 2015, reaffirmed that BPA is safe as currently permitted in FDA-regulated food contact uses and concluded that FDA's National Center for Toxicological Research study did not support the listing of BPA as a reproductive toxicant. In 2018, NTP released the results of the CLARITY Core Study. Senior scientists at FDA's National Center for Toxicological Research (NCTR) conducted the study with funding from NTP. The study involved exposure of laboratory animals to BPA beginning and during pregnancy and continuing in the offspring throughout their entire lifetime. A wide range of dose levels were examined, from low doses close to actual consumer exposure to doses about 250,000 times higher. As stated in the conclusion of the study report, "BPA produced minimal effects that were distinguishable from background." NTP selected a panel of six independent expert scientists to conduct a formal peer review of the study. In general, the peer review panel supported the design and conduct of the study and agreed with the overall conclusion that the study found minimal effects for the range of doses studied. In December 2012, France enacted a law that bans direct contact of packaging containing BPA with food and consumer products. In January 2015, the European Food Safety Authority ("EFSA") concluded that BPA poses no health risk to consumers of any age group (including unborn children, infants and adolescents) at currently permitted exposure levels. EFSA confirmed this conclusion in October 2016. Regulatory and legislative initiatives such as these, or product de-selection resulting from such regulatory actions, may result in a reduction in demand for BPA and our products containing BPA and could also result in additional liabilities as well as an increase in operating costs to meet more stringent regulations. Such increases in operating costs and/or reduction in demand could have a material adverse effect on our operations and profitability.

Scientists periodically conduct studies on the potential human health and environmental impacts of chemicals, including products we manufacture and sell. Also, nongovernmental advocacy organizations and individuals periodically issue public statements alleging human health and environmental impacts of chemicals, including products we manufacture and sell. Based upon such studies or public statements, our customers may elect to discontinue the purchase and use of our products, even in the absence of any government regulation. Such actions could significantly decrease the demand for our products and, accordingly, have a material adverse effect on our business, financial condition, cash flows and profitability.

We are subject to certain risks related to litigation filed by or against us, and adverse results may harm our business.

We cannot predict with certainty the cost of defense, of prosecution or of the ultimate outcome of litigation and other proceedings filed by or against us, including penalties or other civil or criminal sanctions, or remedies or damage awards, and adverse results in any litigation and other proceedings may materially harm our business. Litigation and other proceedings may include, but are not limited to, actions relating to intellectual property, international trade, commercial arrangements, product liability, environmental, health and safety, joint venture agreements, labor and employment or other harms resulting from the actions of individuals or entities outside of our control. In the case of intellectual property litigation and proceedings, adverse outcomes could include the cancellation, invalidation or other loss of material intellectual property rights used in our business and injunctions prohibiting our use of business processes or technology that are subject to third-party patents or other third-party intellectual property rights. Litigation based on environmental matters or exposure to hazardous substances in the workplace or based upon the use of our products could result in significant liability for us, which could have a material adverse effect on our business, financial condition and/or profitability.

Because we manufacture and use materials that are known to be hazardous, we are subject to, or affected by, certain product and manufacturing regulations, for which compliance can be costly and time consuming. In addition, we may be subject to personal injury or product liability claims as a result of human exposure to such hazardous materials.

We produce hazardous chemicals that require care in handling and use that are subject to regulation by many U.S. and non-U.S. national, supra-national, state and local governmental authorities. In some circumstances, these authorities must review and, in some cases approve, our products and/or manufacturing processes and facilities before we may manufacture and sell some of these chemicals. To be able to manufacture and sell certain new chemical products, we may be required, among other things, to demonstrate to the relevant authority that the product does not pose an unreasonable risk during its intended uses and/or that we are capable of manufacturing the product in compliance with current regulations. The process of seeking any necessary approvals can be costly, time consuming and subject to unanticipated and significant delays. Approvals may not be granted to us on a timely basis, or at all. Any delay in obtaining, or any failure to obtain or maintain, these approvals would adversely affect our ability to introduce new products and to generate revenue from those products. New laws and regulations may be introduced in the future that could result in additional compliance costs, bans on product sales or use, seizures, confiscation, recall or monetary fines, any of which could prevent or inhibit the development, distribution or sale of our products and could increase our customers' efforts to find less hazardous substitutes for our products. We are subject to ongoing reviews of our products and manufacturing processes.

As discussed above, we manufacture and sell products containing formaldehyde, and certain governmental bodies have stated that there is a causal link between formaldehyde exposure and certain types of cancer, including myeloid leukemia and NPC. These conclusions could adversely impact our business and also become the basis of product liability litigation.

Other products we have made or used have been and could be the focus of legal claims based upon allegations of harm to human health. While we cannot predict the outcome of pending suits and claims, we believe that we maintain adequate reserves, in accordance with our policy, to address currently pending litigation and are adequately insured to cover currently pending and foreseeable future claims. However, an unfavorable outcome in these litigation matters could have a material adverse effect on our business, financial condition and/or profitability and cause our reputation to decline.

We are subject to claims from our customers and their employees, environmental action groups and neighbors living near our production facilities.

We produce and use hazardous chemicals that require appropriate procedures and care to be used in handling them or in using them to manufacture other products. As a result of the hazardous nature of some of the products we produce and use, we may face claims relating to incidents that involve our customers' improper handling, storage and use of our products. We have historically faced lawsuits, including class action lawsuits that claim liability for death, injury or property damage caused by products that we manufacture or that contain our components. Additionally, we may face lawsuits alleging personal injury or property damage by neighbors living near our production facilities. These lawsuits, and any future lawsuits, could result in substantial damage awards against us, which in turn could encourage additional lawsuits and could cause us to incur significant legal fees to defend such lawsuits, either of which could have a material adverse effect on our business, financial condition and/or profitability. In addition, the activities of environmental action groups could result in litigation or damage to our reputation.

Our manufacturing facilities are subject to disruption due to operating hazards

The storage, handling, manufacturing and transportation of chemicals at our facilities and adjacent facilities could result in leaks, spills, fires or explosions, which could result in production downtime, production delays, raw material supply delays, interruptions and environmental hazards. We have experienced incidents at our own facilities and a raw material supplier located adjacent to our facility that have resulted mostly in short term, but some long term, production delays. Production interruption may also result from severe weather, particularly with respect to our southern U.S. operations near the Gulf Coast. Production lapses caused by any such delays can often be absorbed by our other manufacturing facilities, and we maintain insurance to cover such potential events. However, such events could negatively affect our operations.

As a global business, we are subject to numerous risks associated with our international operations that could have a material adverse effect on our business.

We have significant manufacturing and other operations outside the United States. Some of these operations are in jurisdictions with unstable political or economic conditions. There are numerous inherent risks in international operations, including, but not limited to:

- exchange controls and currency restrictions;
- currency fluctuations and devaluations;
- tariffs and trade barriers imposed by the current U.S. administration or foreign governments;
- renegotiation of trade agreements by the current U.S. administration;
- export duties and quotas;
- changes in local economic conditions;
- changes in laws and regulations;
- exposure to possible expropriation or other government actions;
- acts by national or regional banks, including the European Central Bank, to increase or restrict the availability of credit;
- hostility from local populations;
- diminished ability to legally enforce our contractual rights in non-U.S. countries;
- restrictions on our ability to repatriate dividends from our subsidiaries; and
- unsettled political conditions and possible terrorist attacks against U.S. interests.

Our international operations expose us to different local political and business risks and challenges. For example, we may face potential difficulties in staffing and managing local operations, and we may have to design local solutions to manage credit risks of local customers and distributors. In addition, some of our operations are located in regions that may be politically unstable, having particular exposure to riots, civil commotion or civil unrests, acts of war (declared or undeclared) or armed hostilities or other national or international calamity. In some of these regions, our status as a U.S. company also exposes us to increased risk of sabotage, terrorist attacks, interference by civil or military authorities or to greater impact from the national and global military, diplomatic and financial response to any future attacks or other threats.

In addition, intellectual property rights may be more difficult to enforce in non-U.S. or non-Western European countries.

If global economic and market conditions, or economic conditions in Europe, China, Brazil, Australia, the United States or other key markets remain uncertain or deteriorate further, the value of associated foreign currencies and the global credit markets may weaken. Additionally, general financial instability in countries where we do not transact a significant amount of business could have a contagion effect and contribute to the general instability and uncertainty within a particular region or globally. If this were to occur, it could adversely affect our customers and suppliers and in turn have a materially adverse effect on our international business and results of operations.

Our overall success as a global business depends, in part, upon our ability to succeed under different economic, social and political conditions. We may fail to develop and implement policies and strategies that are effective in each location where we do business, and failure to do so could have a material adverse effect on our business, financial condition and results of operations.

Our business is subject to foreign currency risk.

In 2019, approximately 56% of our net sales originated outside the United States. In our consolidated financial statements, we translate our local currency financial results into U.S. dollars based on average exchange rates prevailing during a reporting period or the exchange rate at the end of that period. During times of a strengthening U.S. dollar, at a constant level of business, our reported international revenues and earnings would be reduced because the local currency would translate into fewer U.S. dollars.

In addition to currency translation risks, we incur a currency transaction risk whenever we enter into a purchase or a sales transaction or indebtedness transaction using a different currency from the currency in which we record revenues. Given the volatility of exchange rates, we may not manage our currency transaction and/or translation risks effectively, and volatility in currency exchange rates may materially adversely affect our financial condition or results of operations, including our tax obligations. Since the majority of our indebtedness is denominated in U.S. dollars, a strengthening of the U.S. dollar could make it more difficult for us to repay our indebtedness.

We have entered and expect to continue to enter into various hedging and other programs in an effort to protect against adverse changes in the non-U.S. exchange markets and attempt to minimize potential material adverse effects. These hedging and other programs may be unsuccessful in protecting against these risks. Our results of operations could be materially adversely affected if the U.S. dollar strengthens against non-U.S. currencies and our protective strategies are not successful. Likewise, a strengthening U.S. dollar provides opportunities to source raw materials more cheaply from foreign countries.

Fluctuations in energy costs could have an adverse impact on our profitability and negatively affect our financial condition.

Oil and natural gas prices have fluctuated greatly over the past several years and we anticipate that they will continue to do so. Natural gas and electricity are essential to our manufacturing processes, which are energy-intensive. Our energy costs represented approximately 4% of our total cost of sales for the year ended December 31, 2019.

Our operating expenses will increase if our energy prices increase. Increased energy prices may also result in greater raw materials costs. If we cannot pass these costs through to our customers, our profitability may decline. Increased energy costs may also negatively affect our customers and the demand for our products. In addition, as oil and natural gas prices fall, while having a positive effect on our overall costs, such falling prices can have a negative impact on our oilfield business, as the number of oil and natural gas wells drilled declines in response to market condition.

If energy prices decrease, we expect benefits in the short-run with decreased operating expenses and increased operating income, but may face increased pricing pressure from competitors that are similarly impacted by energy prices. As a result, profitability may decrease over an extended period of time of lower energy prices. Moreover, any future increases in energy prices after a period of lower energy prices may have an adverse impact on our profitability for the reasons described above.

We face increased competition from other companies and from substitute products, which could force us to lower our prices, which would adversely affect our profitability and financial condition.

Several of the markets that we operate in are highly competitive, and this competition could harm our results of operations, cash flows and financial condition. Our competitors include major international producers as well as smaller regional competitors. We believe that the most significant competitive factor that impacts demand for certain of our products is selling price. We may be forced to lower our selling price based on our competitors' pricing decisions, which would reduce our profitability. Certain markets that we serve have become commoditized in recent years and have given rise to several industry participants, resulting in fierce price competition in these markets. In addition, we face competition from a number of products that are potential substitutes for our products. Growth in substitute products could adversely affect our market share, net sales and profit margins.

Additional trends include current and anticipated consolidation among our competitors and customers which may cause us to lose market share as well as put downward pressure on pricing. There is also a trend in our industries toward relocating manufacturing facilities to lower cost regions, such as Asia, which may permit some of our competitors to lower their costs and improve their competitive position. Furthermore, there has been an increase in new competitors based in these regions.

Some of our competitors are larger, have greater financial resources, have a lower cost structure, and/or have less debt than we do. As a result, those competitors may be better able to withstand a change in conditions within our industry and in the economy as a whole. If we do not compete successfully, our operating margins, financial condition, cash flows and profitability could be adversely affected. Furthermore, if we do not have adequate capital to invest in technology, including expenditures for research and development, our technology could be rendered uneconomical or obsolete, negatively affecting our ability to remain competitive.

We expect substantial cost savings from our ongoing strategic initiatives, and if we are unable to achieve these cost savings, or sustain our current cost structure, it could have a material adverse effect on our business operations, results of operations and financial condition.

We have not yet realized all of the cost savings and synergies we expect to achieve from our ongoing strategic initiatives. A variety of risks could cause us not to realize the expected cost savings and synergies, including but not limited to, higher than expected severance costs related to staff reductions; higher than expected retention costs for employees that will be retained; higher than expected stand-alone overhead expenses; delays in the anticipated timing of activities related to our cost-savings plans; and other unexpected costs associated with operating our business. During 2019, we achieved \$19 in cost savings related to our cost reduction programs and as of December 31, 2019, we had approximately \$14 of additional in-process cost savings.

If we are unable to achieve these cost savings or synergies it could adversely affect our profitability and financial condition. In addition, while we have been successful in reducing costs and generating savings, factors may arise that may not allow us to sustain our current cost structure. As market and economic conditions change, we may also make changes to our operating cost structure.

Our success depends in part on our ability to protect our intellectual property rights, and our inability to enforce these rights could have a material adverse effect on our competitive position.

We rely on the patent, trademark, copyright and trade-secret laws of the United States and the countries where we do business to protect our intellectual property rights. We may be unable to prevent third parties from using our intellectual property without our authorization. The unauthorized use of our intellectual property could reduce any competitive advantage we have developed, reduce our market share or otherwise harm our business. In the event of unauthorized use of our intellectual property, litigation to protect or enforce our rights could be costly, and we may not prevail.

Many of our technologies are not covered by any patent or patent application, and our issued and pending U.S. and non-U.S. patents may not provide us with any competitive advantage and could be challenged by third parties. Our inability to secure issuance of our pending patent applications may limit our ability to protect the intellectual property rights these pending patent applications were intended to cover. Our competitors may attempt to design around our patents to avoid liability for infringement and, if successful, our competitors could adversely affect our market share. Furthermore, the expiration of our patents may lead to increased competition.

Our pending trademark applications may not be approved by the responsible governmental authorities and, even if these trademark applications are granted, third parties may seek to oppose or otherwise challenge these trademark applications. A failure to obtain trademark registrations in the United States and in other countries could limit our ability to protect our products and their associated trademarks and impede our marketing efforts in those jurisdictions.

In addition, effective patent, trademark, copyright and trade secret protection may be unavailable or limited in some foreign countries. In some countries we do not apply for patent, trademark or copyright protection. We also rely on 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, these confidentiality agreements are limited in duration and could be breached, and may not provide meaningful protection of our trade secrets or proprietary manufacturing expertise. Adequate remedies may not be available if there is an unauthorized use or disclosure of our trade secrets and manufacturing expertise. In addition, others may obtain knowledge about our trade secrets through independent development or by legal means. The failure to protect our processes, apparatuses, technology, trade secrets and proprietary manufacturing expertise, methods and compounds could have a material adverse effect on our business by jeopardizing critical intellectual property.

Where a product formulation or process is kept as a trade secret, third parties may independently develop or invent and patent products or processes identical to our trade-secret products or processes. This could have an adverse impact on our ability to make and sell products or use such processes and could potentially result in costly litigation in which we might not prevail.

We could face intellectual property infringement claims that could result in significant legal costs and damages and impede our ability to produce key products, which could have a material adverse effect on our business, financial condition and results of operations.

Our production processes and products are specialized; however, we could face intellectual property infringement claims from our competitors or others alleging that our processes or products infringe on their proprietary technology. If we were subject to an infringement suit, we may be required to change our processes or products, or stop using certain technologies or producing the infringing product entirely. Even if we ultimately prevail in an infringement suit, the existence of the suit could cause our customers to seek other products that are not subject to infringement suits. Any infringement suit could result in significant legal costs and damages and impede our ability to produce key products, which could have a material adverse effect on our business, financial condition and results of operations.

We depend on certain of our key executives and our ability to attract and retain qualified employees.

Our ability to operate our business and implement our strategies depends, in part, on the skills, experience and efforts of key members of our leadership team. We do not maintain any key-man insurance on any of these individuals. In addition, our success will depend on, among other factors, our ability to attract and retain other managerial, scientific and technical qualified personnel, particularly research scientists, technical sales professionals, and engineers who have specialized skills required by our business and focused on the industries in which we compete. Competition for qualified employees in the chemicals industry is intense and the loss of the services of any of our key employees or the failure to attract or retain other qualified personnel could have a material adverse effect on our business or business prospects. Further, if any of these executives or employees joins a competitor, we could lose customers and suppliers and incur additional expenses to recruit and train personnel, who require time to become productive and to learn our business.

If we fail to extend or renegotiate our collective bargaining agreements with our works councils and labor unions as they expire from time to time, if disputes with our works councils or unions arise, or if our unionized or represented employees were to engage in a strike or other work stoppage, our business and operating results could be materially adversely affected.

As of December 31, 2019, approximately 40% of our employees were unionized or represented by works councils that were covered by collective bargaining agreements. In addition, some of our employees reside in countries in which employment laws provide greater bargaining or other employee rights than the laws of the United States. These rights may require us to expend more time and money altering or amending employees' terms of employment or making staff reductions. For example, most of our employees in Europe are represented by works councils, which generally must approve changes in conditions of employment, including restructuring initiatives and changes in salaries and benefits. A significant dispute could divert our management's attention and otherwise hinder our ability to conduct our business or to achieve planned cost savings.

We may be unable to timely extend or renegotiate our collective bargaining agreements as they expire. We have collective bargaining agreements which will expire during the next two years. We also may be subject to strikes or work stoppages by, or disputes with, our labor unions. If we fail to extend or renegotiate our collective bargaining agreements, if disputes with our works councils or unions arise or if our unionized or represented workers engage in a strike or other work stoppage, we could incur higher labor costs or experience a significant disruption of operations, which could have a material adverse effect on our business, financial position and results of operations.

Our pension plans are unfunded or under-funded and our required cash contributions could be higher than we expect, each of which could have a material adverse effect on our financial condition and liquidity.

We sponsor various pension and similar benefit plans worldwide.

Our U.S. and non-U.S. defined benefit pension plans were under-funded in the aggregate by \$28 and \$205, respectively, as of December 31, 2019. We are legally required to make contributions to our pension plans in the future, and those contributions could be material.

In 2020, we expect to contribute approximately \$3 and \$26 to our U.S. and non-U.S. defined benefit pension plans, respectively, which we believe is sufficient to meet the minimum funding requirements as set forth in employee benefit and tax laws.

Our future funding obligations for our employee benefit plans depend upon the levels of benefits provided for by the plans, the future performance of assets set aside for these plans, the rates of interest used to determine funding levels, the impact of potential business dispositions, actuarial data and experience, and any changes in government laws and regulations. In addition, certain of our funded employee benefit plans hold a significant amount of equity securities. If the market values of these securities decline, our pension expense and funding requirements would increase and, as a result, could have a material adverse effect on our business.

Any decrease in interest rates and asset returns, if and to the extent not offset by contributions, could increase our obligations under these plans. If the performance of assets in the funded plans does not meet our expectations, our cash contributions for these plans could be higher than we expect, which could have a material adverse effect on our financial condition and liquidity.

Natural or other disasters have, and could in the future, disrupt our business and result in loss of revenue or higher expenses.

Any serious disruption at any of our facilities, our suppliers' facilities or our customers' facilities due to hurricane, fire, earthquake, flood, terrorist attack, public health crises (including, but not limited to, the coronavirus outbreak) or any other natural or man-made disaster could impair our ability to use our facilities or demand from our customers and have a material adverse impact on our revenues and increase our costs and expenses. If there is a natural disaster or other serious disruption at any of our facilities or our suppliers' facilities, it could impair our ability to adequately supply our customers and negatively impact our operating results. For example, our manufacturing facilities in the U.S. Gulf Coast region were impacted by Hurricane Harvey in 2017. In addition, many of our current and potential customers are concentrated in specific geographic areas. A disaster in one of these regions could have a material adverse impact on our operations, operating results and financial condition. Our business interruption insurance may not be sufficient to cover all of our losses from a disaster, in which case our unreimbursed losses could be substantial. Some of our operations are located in regions with particular exposure to natural disasters such as storms, floods, fires and earthquakes. It would be difficult or impossible for us to relocate these operations and, as a result, any of the aforementioned occurrences could materially adversely affect our business. At the time of this filing, the coronavirus has not had a material impact to our operations or financial results, however any future impacts of the coronavirus are highly uncertain and cannot be predicted.

Cyber security attacks and other disruptions to our information systems could interfere with our operations, and could compromise our information and the information of our customers and suppliers, which would adversely affect our relationships with business partners and harm our brands, reputation and financial results.

In the ordinary course of business, we rely upon information systems, some of which are managed by third parties, to process, transmit and store digital information, and to manage or support a variety of business processes and activities, including supply chain, manufacturing, distribution, invoicing, and collection of payments from customers. We use information systems to record, process and summarize financial information and results of operations for internal reporting purposes and to comply with regulatory financial reporting, legal and tax requirements. The secure operation of our systems, and the processing and maintenance of this information is critical to our business operations and strategy. Despite actions to mitigate or eliminate risk, our information systems may be vulnerable to damage, disruptions or shutdowns due to the activity of hackers, employee error or malfeasance, or other disruptions including, power outages, telecommunication or utility failures, natural disasters or other catastrophic events. The occurrence of any of these events could compromise our systems and the information stored there could be accessed, publicly disclosed, lost or stolen. Any such access, disclosure or other loss of information could result in legal claims or proceedings, liability or regulatory penalties under laws protecting the privacy of personal information, disrupt operations, and damage our reputation which could adversely affect our business, financial condition and results of operations.

In March 2019, we experienced a network security incident that temporarily prevented access to certain information technology systems and data within our network, primarily impacting our corporate functions. We took immediate steps to isolate the issue and implemented our technical recovery plan. Our manufacturing sites, which rely on different networks, continued to operate safely and with limited interruption.

Divestitures that we pursue may present unforeseen obstacles and costs and alter the synergies we expect to continue to achieve from our ongoing cost reduction programs. Acquisitions and joint ventures that we pursue may present unforeseen integration obstacles and costs, increase our leverage and negatively impact our performance.

We have selectively made, and may in the future, pursue divestitures of certain of our businesses as one element of our portfolio optimization strategy. Divestitures may require us to separate integrated assets and personnel from our retained businesses and devote our resources to transitioning assets and services to purchasers, resulting in disruptions to our ongoing business and distraction of management. Divestitures may alter synergies we expect to continue to achieve from our ongoing cost reduction programs. In the event of a large divestiture, we could use a significant amount of net operating losses which could result in our U.S. Company incurring future cash taxes. In addition, divestitures may result in the retention of certain current and future liabilities as well as obligations to indemnify or reimburse a buyer for certain liabilities of a divested business. These potential obligations could have an adverse effect on our results of operations and financial condition if triggered.

In addition, we have made acquisitions of related businesses, and entered into joint ventures in the past and could selectively pursue acquisitions of, and joint ventures with, related businesses as one element of our growth strategy. If such acquisitions are consummated, the risk factors we describe above and below, and for our business generally, may be intensified or we may be subject to new risks as a result of such acquisitions.

We could face additional tax obligations based on tax reform and the Emergence.

On December 22, 2017, the United States enacted tax reform legislation ("Tax Reform") that included a broad range of business tax provisions, including but not limited to a reduction in the U.S. federal tax rate from 35% to 21% as well as provisions that limit or eliminate various deductions or credits. The legislation also causes U.S. expenses, such as interest, general administrative, and certain executive officer compensation expenses, to be taxed and imposes a new tax on U.S. cross-border payments. Furthermore, the legislation includes a one-time transition tax on accumulated foreign earnings and profits.

Some aspects of the Tax Reform remain unclear, and although further clarifying guidance was issued and more is expected to be issued in the future (by the Internal Revenue Service ("IRS"), the U.S. Treasury Department or via a technical correction law change), they may not be clarified for some time. In addition, some U.S. states have not updated their laws to take into account the new federal legislation. Aspects of U.S. tax reform may lead foreign jurisdictions to respond by enacting additional tax legislation that is unfavorable to us. As a result, we have not yet been able to determine the full impact of the new laws on our results of operations and financial condition. It is possible that U.S. tax reform, or interpretations under it, could change and could have an adverse effect on us, and such effect could be material.

According to the Plan, the Successor Company indemnified the Predecessor Company for historical tax liabilities, including those related to the Emergence and prior tax contingencies. Tax laws are complex and subject to various interpretations. Tax authorities often challenge certain of our tax positions and may challenge other historical tax positions that are subject to indemnification under the Plan. If these challenges are successful, they could adversely affect the Successor Company's effective tax rate and/or cash tax payments. In addition, the Company has certain intercompany arrangements that, if settled, may trigger taxable gains or losses based on foreign currency exchange rates in place at the time of settlement.

If we fail to establish and maintain an effective internal control environment, our ability to both timely and accurately report our financial results could be adversely affected.

Section 404 of the Sarbanes-Oxley Act of 2002 requires companies to conduct a comprehensive evaluation of their internal control over financial reporting. To comply with this statute, each year we are required to document and test our internal control over financial reporting, our management is required to assess and issue a report concerning our internal control over financial reporting.

The existence of one or more material weaknesses has resulted in, and could continue to result in, errors in our financial statements, and substantial costs and resources may be required to rectify these errors or other internal control deficiencies and may cause us to incur other costs, including potential legal expenses. If we cannot produce reliable financial reports, investors could lose confidence in our reported financial information, and we may be unable to obtain additional financing to operate and expand our business and our business and financial condition could be harmed.

We have an established process to remediate identified control deficiencies timely and we continue to take appropriate actions to strengthen our internal control over financial reporting, but we cannot assure you that the measures we have taken to date, or any measures we may take in the future, will be sufficient to avoid potential future material weaknesses.

Risks Related to Our Chapter 11 Proceedings and Emergence

Our actual financial results may vary significantly from the projections that were filed with the Bankruptcy Court.

In connection with our disclosure statement relating to the Plan (the "Disclosure Statement"), and the hearing to consider confirmation of the Plan, we prepared projected financial information to demonstrate to the Bankruptcy Court the feasibility of the Plan and our ability to continue operations upon Emergence. This projected financial information was prepared by, and is the responsibility of, our management. PricewaterhouseCoopers LLP has not audited, reviewed, compiled or applied agreed-upon procedures with respect to the projected financial information and, accordingly, PricewaterhouseCoopers LLP does not express an opinion or any other form of assurance with respect thereto. The PricewaterhouseCoopers LLP report included in this document relates to our financial statements. It does not extend to the projected financial information and should not be read to do so. Those projections were prepared solely for the purpose of the Bankruptcy Petitions and have not been, and will not be, updated on an ongoing basis. At the time they were prepared, the projections reflected numerous assumptions concerning our anticipated future performance and with respect to prevailing and anticipated market and economic conditions that were and remain beyond our control and that may not materialize. Projections are inherently subject to substantial and numerous uncertainties and to a wide variety of significant business, economic and competitive risks and the assumptions underlying the projections and/or valuation estimates may prove to be wrong in material respects. Actual results may vary significantly from those contemplated by the projections that were prepared in connection with the Disclosure Statement and the hearing to consider confirmation of the Plan.

Our financial condition or results of operations will not be comparable to the financial condition or results of operations reflected in our historical financial statements.

Following our emergence from bankruptcy, we have been operating our existing business under a new capital structure. In addition, we have been subject to the "fresh-start" accounting rules. As required by "fresh-start" accounting, assets and liabilities were recorded at fair value, based on values determined in connection with the implementation of the Plan. Accordingly, our financial condition and results of operations from and after the Emergence Date will not be comparable to the financial condition or results of operations reflected in our historical financial statements included in this Annual Report on Form 10-K.

Risks Related to Equity

Ownership of the Company's common stock is concentrated in the hands of certain stockholders and their affiliates may have significant influence on corporate decisions

Hexion Holdings has a relatively small number of stockholders that collectively have a large concentration of ownership. This large concentration of ownership could collectively have significant influence over the outcome of actions requiring stockholder approval, including the election of directors and the approval of mergers, consolidations and the sale of all or substantially all of the Company's assets. They collectively could be in a position to prevent or cause a change in control of the Company.

Additionally, any future change in control of the Company could result in events that would have an adverse effect on our business or financial condition. For example, a change in ownership control could place further limitations on our ability to use our tax net operating losses in the future.

Actions of activist stockholders, and such activism could adversely impact our business.

We may be subject to proposals by stockholders urging us to take certain corporate actions. Responding to actions by activist stockholders can be costly and time-consuming, disrupting our operations and diverting the attention of management and our employees. Such activities could also interfere with our ability to execute our business strategies. The perceived uncertainties as to our future direction caused by activist actions could affect the market price of our securities, result in the loss of potential business opportunities and make it more difficult to attract and retain qualified personnel, board members and business partners.

Risks Related to Our Indebtedness

We may be unable to generate sufficient cash flows from operations to meet our consolidated debt service payments.

Our ability to generate sufficient cash flows from operations to make scheduled debt service payments depends on a range of economic, competitive and business factors, many of which are outside of our control. Our business may generate insufficient cash flows from operations to meet our debt service and other obligations, and currently anticipated cost savings, working capital reductions and operating improvements may not be realized on schedule, or at all. If we are unable to meet our expenses and debt service obligations, we may need to refinance all or a portion of our indebtedness on or before maturity, sell assets or issue additional equity securities. We may be unable to refinance any of our indebtedness, sell assets or issue equity securities on commercially reasonable terms, or at all, which could cause us to default on our obligations and result in the acceleration of our debt obligations. Our inability to generate sufficient cash flows to satisfy our outstanding debt obligations, or to refinance our obligations on commercially reasonable terms, would have a material adverse effect on our business, financial condition and results of operations.

Availability under the ABL Facility is subject to a borrowing base based on a specified percentage of eligible accounts receivable and inventory and, with respect to the foreign loan parties, a specified percentage of eligible machinery, equipment and real property, subject to certain limitations. To the extent the borrowing base is lower than we expect, that could significantly impair our liquidity. In addition, if our fixed charge coverage ratio falls to less than 1.0 to 1.0, we will need to ensure that our availability under the ABL Facility is at least the greater of (x) \$30 and (y) 10% of the lesser of (i) the borrowing base and (ii) the total ABL Facility commitments at such time.

Our substantial indebtedness could adversely affect our ability to raise additional capital to fund our operations and limit our ability to react to changes in the economy or our industry.

As of December 31, 2019, we had approximately \$1.8 billion of consolidated outstanding indebtedness, including payments due within the next twelve months and short-term borrowings.

Our substantial consolidated indebtedness could have other important consequences, including but not limited to the following:

- it may limit our flexibility in planning for, or reacting to, changes in our operations or business;
- we are more highly leveraged than many of our competitors, which may place us at a competitive disadvantage;
- it may make us more vulnerable to downturns in our business or in the economy;
- a substantial portion of our cash flows from operations will be dedicated to the repayment of our indebtedness and will not be available for other purposes;
- it may restrict us from making strategic acquisitions, introducing new technologies or exploiting business opportunities;
- it may make it more difficult for us to satisfy our obligations with respect to our existing indebtedness;
- it may adversely affect terms under which suppliers provide material and services to us; and
- it may limit our ability to borrow additional funds or dispose of assets.

There would be a material adverse effect on our business and financial condition if we were unable to service our indebtedness or obtain additional financing, as needed.

Despite our substantial indebtedness, we may still be able to incur significant additional indebtedness. This could intensify the risks described above and below.

We may be able to incur substantial additional indebtedness in the future. Although the terms governing our indebtedness contain restrictions on our ability to incur additional indebtedness, these restrictions are subject to numerous qualifications and exceptions, and the indebtedness we may incur in compliance with these restrictions could be substantial. Increasing our indebtedness could intensify the risks described above and below.

The terms governing our outstanding debt, including restrictive covenants, may adversely affect our operations.

The terms governing our outstanding debt contain, and any future indebtedness we incur would likely contain, numerous restrictive covenants that impose significant operating and financial restrictions on our ability to, among other things:

- incur or guarantee additional debt;
- pay dividends and make other distributions to our shareholders;
- create or incur certain liens;
- make certain loans, acquisitions, capital expenditures or investments;
- engage in sales of assets and subsidiary stock;
- enter into sale/leaseback transactions;
- enter into transactions with affiliates;
- enter into agreements that restrict dividends from subsidiaries; and
- transfer all or substantially all of our assets or enter into merger or consolidation transactions.

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In addition, the credit agreement governing our ABL Facility requires us to maintain a minimum fixed charge coverage ratio of 1.0 to 1.0 at any time when excess availability is less than the greater of (x) \$30 and (y) 10% of the lesser of (i) the borrowing base at such time and (ii) the total ABL Facility commitments at such time. The fixed charge coverage ratio under the credit agreement governing the ABL Facility is generally defined as the ratio of (a) Pro Forma EBITDA minus non-financed capital expenditures and cash taxes during such period to (b) debt service plus cash interest expense plus certain restricted payments, each measured for the four most recent quarters for which financial statements have been delivered. We may not be able to satisfy such ratio in future periods. If we anticipate we will be unable to meet such ratio, we expect not to allow our availability under the ABL Facility to fall below such levels.

A breach of our fixed charge coverage ratio covenant, if in effect, would result in an event of default under our ABL Facility. Pursuant to the terms of our ABL Facility, our direct parent company will have the right, but not the obligation, to cure such default through the purchase of additional equity in up to two of any four consecutive quarters and seven total during the term of the ABL Facility. If a breach of a fixed charge coverage ratio covenant is not cured or waived, or if any other event of default under the ABL Facility occurs, the lenders under such credit facility:

- would not be required to lend any additional amounts to us;
- could elect to declare all borrowings outstanding under the Credit Facilities, together with accrued and unpaid interest and fees, due and payable and could demand cash collateral for all letters of credit issued thereunder;
- could apply all of our available cash that is subject to the cash sweep mechanism of the Credit Facilities to repay these borrowings; and/or
- could prevent us from making payments on our notes;

any or all of which could result in an event of default under our notes.

The ABL Facility provides for "springing control" over the cash in our deposit accounts constituting collateral for the ABL Facility, and such cash management arrangements includes a cash sweep at any time that availability under the ABL Facility is less than the greater of (x) \$30 and (y) 10% of the lesser of (i) the borrowing base at such time and (ii) the total ABL Facility commitments at such time. Such cash sweep, if in effect, will cause substantially all our available cash to be applied to outstanding borrowings under our ABL Facility. If we satisfy the conditions to borrowings under the ABL Facility while any such cash sweep is in effect, we may be able to make additional borrowings under the ABL Facility to satisfy our working capital and other operational needs. If we do not satisfy the conditions to borrowing, we will not be permitted to make additional borrowings under our ABL Facility, and we may not have sufficient cash to satisfy our working capital and other operational needs.

Repayment of our debt, including required principal and interest payments, depends on cash flows generated by our subsidiaries, which may be subject to limitations beyond our control.

Our subsidiaries own a significant portion of our consolidated assets and conduct a significant portion of our consolidated operations. Repayment of our indebtedness depends, to a significant extent, on the generation of cash flows and the ability of our subsidiaries to make cash available to us by dividend, debt repayment or otherwise. Our subsidiaries may not be able to, or may not be permitted to, make distributions to enable us to make payments on our indebtedness. Each subsidiary is a distinct legal entity and, under certain circumstances, legal and contractual restrictions may limit our ability to obtain cash from subsidiaries. While there are limitations on the ability of our subsidiaries to incur consensual restrictions on their ability to pay dividends or make intercompany payments, these limitations are subject to certain qualifications and exceptions. In the event that we are unable to receive distributions from our subsidiaries, we may be unable to make required principal and interest payments on our indebtedness.

A downgrade in our debt ratings could restrict our access to, and negatively impact the terms of, current or future financings or trade credit.

Standard & Poor's Ratings Services ("S&P") and Moody's Investors Service ("Moody's") maintain credit ratings on us and certain of our debt. Each of these ratings is currently below investment grade. Any decision by these or other ratings agencies to downgrade such ratings in the future could restrict our access to, and negatively impact the terms of, current or future financings and trade credit extended by our suppliers of raw materials or other vendors.

ITEM 1B - UNRESOLVED STAFF COMMENTS

None.

ITEM 2 - PROPERTIES

Our headquarters are in Columbus, Ohio and we have executive offices in Rotterdam, Netherlands and Shanghai, China. Our major manufacturing facilities are primarily located in North America and Europe. As of December 31, 2019, we operated 21 domestic production and manufacturing facilities in 12 states and 24 foreign production and manufacturing facilities in Australia, Brazil, Canada, Colombia, Finland, Germany, Italy, Korea, Netherlands, New Zealand, Spain, the United Kingdom and Uruguay.

The majority of our facilities are used for the production of thermosetting resins, and most of them manufacture more than one type of thermosetting resin, the nature of which varies by site. These facilities typically use batch technology, and range in size from small sites, with a limited number of reactors, to larger sites, with dozens of reactors. One exception to this is our plants in Deer Park, Texas and Pernis, Netherlands are the only continuous-process epoxy resins plants in the world, which provides us with a cost advantage over conventional technology.

In addition, we have the ability to internally produce key intermediate materials such as formaldehyde, BPA, ECH, and versatic acid. This backward integration provides us with cost advantages and facilitates our adequacy of supply. These facilities are usually co-located with downstream resin manufacturing facilities they serve. As these intermediate materials facilities are often much larger than a typical resins plant, we can capture the benefits of manufacturing efficiency and scale by selling material that we do not use internally to third parties.

We believe our production and manufacturing facilities are well maintained and effectively utilized and are adequate to operate our business. Following are our more significant production and manufacturing facilities and executive offices:

Location	Nature of Ownership	Reporting Segment
Argo, IL*	Owned	Epoxy, Phenolic and Coating Resins
Barry, UK*	Owned	Epoxy, Phenolic and Coating Resins
Deer Park, TX*	Owned	Epoxy, Phenolic and Coating Resins
Duisburg-Meiderich, Germany	Owned	Epoxy, Phenolic and Coating Resins
Iserlohn-Letmathe, Germany	Owned	Epoxy, Phenolic and Coating Resins
Lakeland, FL	Owned	Epoxy, Phenolic and Coating Resins
Louisville, KY	Owned	Epoxy, Phenolic and Coating Resins
Moerdijk, Netherlands*	Owned	Epoxy, Phenolic and Coating Resins
Onsan, South Korea	Owned	Epoxy, Phenolic and Coating Resins
Pernis, Netherlands*	Owned	Epoxy, Phenolic and Coating Resins
Solbiate Olona, Italy	Owned	Epoxy, Phenolic and Coating Resins
Curitiba, Brazil	Owned	Forest Products Resins
Montenegro, Brazil	Owned	Forest Products Resins
Edmonton, AB, Canada	Owned	Forest Products Resins
Fayetteville, NC	Owned	Forest Products Resins
Kitee, Finland	Owned	Forest Products Resins
Luling, LA*	Owned	Forest Products Resins
Geismar, LA‡	Owned	Forest Products Resins
Gonzales, LA	Owned	Forest Products Resins
Hope, AR	Owned	Forest Products Resins
Springfield, OR	Owned	Forest Products Resins
St. Romuald, QC, Canada	Owned	Forest Products Resins
Columbus, OH†	Leased	Corporate and Other
Rotterdam, Netherlands†	Leased	Corporate and Other
Shanghai, China†	Leased	Corporate and Other

* We own all of the assets at this location. The land is leased.

‡ A portion of this location is leased.

† Executive offices.

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ITEM 3 - LEGAL PROCEEDINGS

Legal Proceedings

The U.S. Environmental Protection Agency ("USEPA") issued the Company a Notice of Intent to File Administrative Complaint related to alleged violations of the Emergency Right-to-Know Act identified in a 2017 voluntary self-disclosure made by the Company. The Company paid an assessed penalty less than \$0.1 and implemented a supplemental environmental project valued in the Consent Agreement at \$0.1.

The Company entered into an Agreed Board Order with the Louisville Metro Air Pollution Control Board, approved by the Board on October 16, 2019, related to alleged violations of the Louisville Metro Air Pollution Control District regulations between January 2018 and May 2019. The Company paid a \$0.1 penalty in the fourth quarter of 2019.

Other Litigation

For a discussion of certain other legal contingencies, refer to Note 12 in Item 8 of Part II of this Annual Report on Form 10-K.

ITEM 4 - MINE SAFETY DISCLOSURES

This item is not applicable to the registrant.

PART II

(dollars in millions, except per share data, or as otherwise noted)

ITEM 5 - MARKET FOR THE REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

There is no established public trading market for our common stock. As of March 1, 2020, 100 common shares were held by our direct parent, Hexion Intermediate.

We have no compensation plans that authorize issuing our common stock to employees or non-employees. In addition, there have been no sales or repurchases of our equity securities during the past fiscal year. However, we and our direct and indirect parent companies have in the past issued, and may issue from time to time, equity awards that are denominated in or based upon the common stock of our direct or ultimate parent to our employees and directors. As the awards were granted in exchange for service to us, these awards are included in our Consolidated Financial Statements. For a discussion of these equity plans, see Note 14 in Item 8 of Part II and Item 11 of Part III of this Annual Report on Form 10-K.

ITEM 6 - SELECTED FINANCIAL DATA

The following table presents our selected historical consolidated and combined financial data. The following information should be read in conjunction with, and is qualified by reference to, our "Management's Discussion and Analysis of Financial Condition and Results of Operations," and our audited Consolidated Financial Statements, as well as the other financial information included elsewhere herein.

The consolidated balance sheet data at December 31, 2019 and 2018 and the consolidated statement of operations data for the Successor period July 2, 2019 through December 31, 2019 and the Predecessor periods January 1, 2019 through July 1, 2019 and the years ended December 31, 2018 and 2017 have been derived from our audited Consolidated Financial Statements included elsewhere herein. The consolidated balance sheet data at December 31, 2017, 2016 and 2015 and the consolidated statement of operations data for the years ended December 31, 2016 and 2015 have been derived from audited consolidated financial statements not included herein.

	Successor	Predecessor				
	July 2, 2019 through December 31, 2019	January 1, 2019 through July 1, 2019	Year Ended December 31,			
		2018	2017	2016	2015	
Statements of Operations:						
Net sales ⁽¹⁾	\$ 1,596	\$ 1,778	\$ 3,797	\$ 3,591	\$ 3,438	\$ 4,140
Cost of sales ⁽¹⁾⁽²⁾⁽³⁾	1,349	1,462	3,127	2,979	2,780	3,432
Selling, general and administrative expense ⁽¹⁾⁽²⁾⁽³⁾	139	145	277	301	298	294
Depreciation and amortization ⁽³⁾⁽⁴⁾	110	52	117	129	260	139
Gain on dispositions	—	—	(44)	—	(240)	—
Asset impairments	—	—	28	13	—	6
Business realignment costs	24	15	29	52	55	16
Other operating expense, net	17	16	36	17	13	12
Operating (loss) income	(43)	88	227	100	272	241
Interest expense, net	55	89	365	329	310	326
Loss (gain) on extinguishment of debt	—	—	—	3	(48)	(41)
Reorganization items, net	—	(3,105)	—	—	—	—
Other non-operating expense (income), net ⁽²⁾	1	(11)	(12)	(12)	21	(22)
(Loss) income before income tax and earnings from unconsolidated entities	(99)	3,115	(126)	(220)	(11)	(22)
Income tax (benefit) expense	(9)	222	40	18	38	34
(Loss) income before earnings from unconsolidated entities	(90)	2,893	(166)	(238)	(49)	(56)
Earnings from unconsolidated entities, net of taxes	2	2	3	4	11	17
Net (loss) income	(88)	2,895	(163)	(234)	(38)	(39)
Net (income) loss attributable to noncontrolling interest	(1)	(1)	1	—	—	(1)
Net (loss) income attributable to Hexion Inc.	\$ (89)	\$ 2,894	\$ (162)	\$ (234)	\$ (38)	\$ (40)
Cash Flows provided by (used in):						
Operating activities	\$ 224	\$ (173)	\$ (23)	\$ (153)	\$ (20)	\$ 213
Investing activities ⁽⁵⁾	(58)	(42)	(40)	(110)	219	(163)
Financing activities	(38)	212	81	174	(235)	24
Balance Sheet Data (at end of period):						
Cash and cash equivalents	\$ 254	\$ 96	\$ 128	\$ 115	\$ 196	\$ 236
Total assets ⁽¹⁾	4,146	2,131	1,961	2,097	2,055	2,382
Total debt ⁽⁶⁾⁽⁷⁾	1,785	528	3,815	3,709	3,504	3,778
Total liabilities ⁽¹⁾	3,071	5,212	4,875	4,839	4,594	4,859
Total equity (deficit)	1,075	(3,081)	(2,914)	(2,742)	(2,539)	(2,477)

(1) ASC 606 *Revenue from Contracts with Customers* and ASC 842 *Leases*, were effective for the years ending December 31, 2018 through December 31, 2019 and the year ended December 31, 2019, respectively.

(2) "Cost of sales", "Selling, general and administrative expense" and "Other non-operating (income) expense, net" have been adjusted for all periods presented to reflect the adoption of Accounting Standards Board Update No. 2017-07 ("ASU 2017-07"), which reclassified certain components of net periodic pension and postretirement benefit costs from "Cost of sales" and "Selling, general and administrative expense" to "Other non-operating (income) expense, net" within our Consolidated Statements of Operations.

(3) As a result of the application of fresh start accounting upon the Company's emergence from Chapter 11, the Company elected to change its income statement presentation for depreciation and amortization expense. All depreciation and amortization expense has been reclassified from "Cost of sales" and "Selling, general and administrative expense" to "Depreciation and amortization" for all periods presented. In addition, the Company will no longer present "Gross profit" as a subtotal caption.

(4) Depreciation and amortization for the year ended December 31, 2018, 2017, 2016 and 2015 includes accelerated depreciation of \$4, \$14, \$129, and \$2 respectively, related to facility rationalizations.

(5) "Investing activities" within our Consolidated Statement of Cash Flows has been adjusted for all periods presented to reflect the adoption of Accounting Standards Board Update No. 2016-18 ("ASU 2016-18"), which removed the change in restricted cash from "Investing activities" in the Consolidated Statement of Cash Flows.

(6) Total debt represents the sum of "Debt payable within one year" and "Long-term debt" on the Consolidated Balance Sheets. See Note 8 in Item 8 of Part II of this Annual Report on Form 10-K.

(7) As of July 1, 2019, \$3,420 of total debt was included in "Liabilities subject to compromise" due to the Company's Chapter 11 proceedings.

ITEM 7 - MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

You should read the following discussion and analysis of our results of operations and financial condition for the years ended December 31, 2019, 2018 and 2017 with the audited Consolidated Financial Statements and related notes included elsewhere herein. The following discussion and analysis contains forward-looking statements that reflect our plans, estimates and beliefs, and which involve numerous risks and uncertainties, including, but not limited to, the risks and uncertainties described in Item 1A, "Risk Factors." Actual results may differ materially from those contained in any forward-looking statements.

Emergence from Chapter 11 Bankruptcy

On April 1, 2019, the Company, Hexion Holdings LLC, Hexion LLC and certain of the Company's subsidiaries (collectively, the "Debtors") filed voluntary petitions (the "Bankruptcy Petitions") for reorganization under Chapter 11 ("Chapter 11") of the U.S. Bankruptcy Code (the "Bankruptcy Code") in the United States Bankruptcy Court for the District of Delaware, (the "Bankruptcy Court"). The Chapter 11 proceedings were jointly administered under the caption *In re Hexion TopCo, LLC, No. 19-10684* (the "Chapter 11 Cases"). The Debtors continued to operate their businesses as "debtors-in-possession" under the jurisdiction of the Bankruptcy Court and in accordance with the applicable provisions of the Bankruptcy Code and orders of the Bankruptcy Court.

On June 25, 2019, the Court entered an order (the "Confirmation Order") confirming the Second Amended Joint Chapter 11 Plan of Reorganization of Hexion Holdings LLC and its Debtor Affiliates under Chapter 11 (the "Plan"). On the morning of July 1, 2019, in accordance with the terms of the Plan and the Confirmation Order, the Plan became effective and the Debtors emerged from bankruptcy (the "Emergence")

The Company filed for Chapter 11 bankruptcy protection on the Petition Date and as we previously disclosed, based on our financial condition and our projected operating results, the defaults under our debt agreements, and the risks and uncertainties surrounding our Chapter 11 proceedings, that there was substantial doubt as to the our ability to continue as a going concern as of the issuance of our 2018 Annual Report on Form 10-K. After our Emergence from Chapter 11 on July 1, 2019, based on our new capital structure, current liquidity position and projected operating results, we expect to continue as a going concern for the next twelve months. Refer to Note 3 to the Consolidated Financial Statements in Item 8 of Part II of this Annual Report on Form 10-K for more information.

Overview and Outlook

We are a large participant in the specialty chemicals industry, one of the world's largest producers of thermosetting resins, or thermosets, and a leading producer of adhesive and structural resins and coatings. Thermosets are a critical ingredient for most paints, coatings, glues and other adhesives produced for consumer or industrial uses. We provide a broad array of thermosets and associated technologies and have significant market positions in all of the key markets that we serve.

Our products are used in thousands of applications and are sold into diverse markets, such as forest products, architectural and industrial paints, packaging, consumer products and automotive coatings, as well as higher growth markets, such as wind energy and electrical composites. Major industry sectors that we serve include industrial/marine, construction, consumer/durable goods, automotive, wind energy, aviation, electronics, architectural, civil engineering, repair/remodeling and oil and gas drilling. Key drivers for our business include general economic and industrial conditions, including housing starts and auto build rates. In addition, due to the nature of our products and the markets we serve, competitor capacity constraints and the availability of similar products in the market may impact our results. As is true for many industries, our financial results are impacted by the effect on our customers of economic upturns or downturns, as well as by the impact on our own costs to produce, sell and deliver our products. Our customers use most of our products in their production processes. As a result, factors that impact their industries can and have significantly affected our results.

Through our worldwide network of strategically located production facilities, we serve more than 8,100 customers in approximately 85 countries. Our global customers include large companies in their respective industries, such as Akzo Nobel, BASF, Norbord, Louisiana Pacific, Monsanto, Owens Corning, PPG Industries, Sherwin Williams and Weyerhaeuser.

Business Strategy

As a significant player in the specialty chemicals industry, we believe we have opportunities to strategically grow our business over the long term. Our products are well aligned with global mega-trends. We believe growth in many of our key applications is being driven by an increasing need for lighter, stronger, higher performance and engineered materials in many end markets such as aerospace, automotive, energy, and construction. Global urbanization is expected to result in ever increasing demands for more sustainable solutions in energy, such as wind turbines, agriculture, low-emitting coatings, carbon efficient buildings through engineered structural wood, lightweighting composite applications, and improved fire, smoke and toxicity performance. Through these growth strategies we strive to create shareholder value and generate solid operating cash flow.

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Reportable Segments

Our business segments are based on the products that we offer and the markets that we serve. At December 31, 2019, we had three reportable segments: Forest Products Resins; Epoxy, Phenolic and Coating Resins; and Corporate and Other. A summary of the major products and items associated with the Company's reportable segments are as follows:

- **Forest Products Resins:** forest products resins and formaldehyde applications
- **Epoxy, Phenolic and Coating Resins:** epoxy specialty resins, phenolic encapsulated substrates, versatic acids and derivatives, basic epoxy resins and intermediates, phenolic specialty resins and molding compounds
- **Corporate and Other:** primarily corporate general and administrative expenses that are not allocated to the other segments, such as shared service and administrative functions and foreign exchange gains and losses.

Realignment of Reportable Segments in 2020

As part of our continuing efforts to drive growth and greater operating efficiencies, in January 2020 we changed our reportable segments to align around our two growth platforms: Adhesives; and Coatings and Composites. These new segments consist of the following businesses:

- **Adhesives:** these businesses focus on the global adhesives market. They include our global wood adhesives business, including: forest products resin assets in North America, Latin America, Europe, Australia and New Zealand; global formaldehyde; and the global phenolic specialty resins business, which now also includes the oilfield technologies group.
- **Coatings and Composites:** these businesses focus on the global coatings and composites market. They include our base and specialty epoxy resins and Versatic™ Acids and Derivatives businesses.

We modified our internal reporting processes and systems to accommodate the new structure and the change to segment reporting is effective starting in the first quarter of 2020. Corporate and Other will continue to be a reportable segment with this segment realignment in 2020.

Financial Results Summary

Our financial results for the period from January 1, 2019 through July 1, 2019 and for fiscal years ended 2018 and 2017 are referred to as those of the "Predecessor" period. Our financial results for the period from July 2, 2019 through December 31, 2019 are referred to as those of the "Successor" period. Our results of operations as reported in our Consolidated Financial Statements for these periods are prepared in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP"), which requires that we report on our results for the period from January 1, 2019 through July 1, 2019 and the period from July 2, 2019 through December 31, 2019 separately.

We do not believe that reviewing the results of these periods in isolation would be useful in identifying any trends in or reaching any conclusions regarding our overall operating performance. Management believes that the key performance metrics such as Net sales, Operating income and Segment EBITDA for the Successor period when combined with the Predecessor period provides more meaningful comparisons to other periods and are useful in identifying current business trends. Accordingly, in addition to presenting our results of operations as reported in our Consolidated Financial Statements in accordance with U.S. GAAP, the tables and discussions below also present the combined results for the year ended December 31, 2019.

The combined results (referenced as "Non-GAAP Combined" or "Combined") for the year ended December 31, 2019, which we refer to herein as results for the "Year Ended December 31, 2019" represent the sum of the reported amounts for the Predecessor period January 1, 2019 through July 1, 2019 combined with the Successor period from July 2, 2019 through December 31, 2019. These Combined results are not considered to be prepared in accordance with U.S. GAAP and have not been prepared as pro forma results under applicable regulations. The Non-GAAP Combined operating results is presented for supplemental purposes only, may not reflect the actual results we would have achieved absent our emergence from bankruptcy, may not be indicative of future results and should not be viewed as a substitute for the financial results of the Predecessor period and Successor period presented in accordance with U.S. GAAP.

2019 Overview

Following are highlights from our results of operations for the years ended December 31, 2019 and 2018:

	Successor	Predecessor	Non-GAAP Combined	Predecessor		
	July 2, 2019 through December 31, 2019	January 1, 2019 through July 1, 2019	Year Ended December 31,			
			2019	2018	\$ Change	% Change
Statements of Operations:						
Net sales	\$ 1,596	\$ 1,778	\$ 3,374	\$ 3,797	\$ (423)	(11)%
Operating (loss) income	(43)	88	45	227	(182)	(80)%
(Loss) income before income tax	(99)	3,115	3,016	(126)	3,142	n/m
Net (loss) income	(88)	2,895	2,807	(163)	2,970	n/m
Segment EBITDA:						
Forest Products Resins	\$ 129	\$ 152	\$ 281	\$ 285	\$ (4)	(1)%
Epoxy, Phenolic and Coating Resins	75	111	186	226	(40)	(18)%
Corporate and Other	(37)	(30)	(67)	(71)	4	6 %
Total	\$ 167	\$ 233	\$ 400	\$ 440	\$ (40)	(9)%

- Net Sales**—Net sales in 2019 were \$3,374, a decrease of 11% compared with \$3,797 in 2018. Volume negatively impacted sales by \$164 primarily related to volume decreases in our North American resins business due to weaker demand driven by customer mill closures and the impact of competitive pricing pressures, and in our phenolic resins business due to an overall weakness in the market, primarily in the automotive and construction industries. These decreases were partially offset by increased volumes in our epoxy specialty business due to strong demand in China wind energy. Pricing negatively impacted sales by \$154 due largely to softer market conditions in our base epoxy resins business and raw material price decreases contractually passed through to customers across many of our businesses. Foreign exchange translation negatively impacted net sales by \$105 due to the weakening of various currencies against the U.S. dollar in 2019 compared to 2018.
- Net Income**—Net income in 2019 was \$2,807, an improvement of \$2,970 as compared with a net loss of \$163 in 2018. This increase was driven by \$3,105 of net reorganization items primarily related to reorganization and fresh start adjustments associated with our emergence from bankruptcy, and a decrease in interest expense of \$221 as a result of the restructuring of our debt through our Chapter 11 proceedings. These increases were partially offset by a decrease in gross profit due primarily to the margin reductions in our base epoxy resins business discussed above, increased depreciation and amortization expense related to the step up of fixed and intangible assets as a result of fresh start adjustments and a gain on the sale of our ATG business of \$44 that occurred in the first quarter of 2018.
- Segment EBITDA**—In 2019, Segment EBITDA was \$400, a decrease of 9% compared with \$440 in 2018. This decrease was primarily due to margin reductions in our base epoxy resins business driven by softer market conditions.
- Restructuring and Cost Reduction Programs**—During 2019, we achieved \$19 in cost savings related to our cost reduction programs. We have essentially realized all cost savings associated with the approximately \$40 cost savings program announced in the fourth quarter of 2017. During 2019, we have initiated approximately \$20 of new cost reduction activities, of which we have \$14 of in-process cost savings that we expect to realize over the next 12 months.
- Network Security Incident**—In March 2019, we experienced a network security incident that temporarily prevented access to certain information technology systems and data within our network, primarily impacting our corporate functions. Our manufacturing sites, which rely on different networks, continued to operate safely and with limited interruption. For the year ended December 31, 2019, we incurred approximately \$8 in costs, net of insurance recoveries, related to the incident.
- Growth Initiatives**—We recently completed construction of our new Application Development Center in Shanghai, China, which will help meet the strong growth and demand for new coatings technologies in the region. We also recently announced plans for the expansion of our adhesive resins capacity in Australia as we continue to invest in productivity projects and strategically invest in our manufacturing footprint.

2020 Outlook

Overall, we expect continued end market volatility, primarily in the automotive and construction industries, combined with the impacts of ongoing global trade discussions, to challenge our business results in 2020. However, we plan to implement a variety of growth and efficiency initiatives in 2020, which include accelerating new product development efforts, strategic expansion of our manufacturing footprint and process improvements. We expect the coronavirus to have impacts throughout our supply chain and with our customers in the first quarter of 2020, but the overall impacts of the coronavirus are highly uncertain and cannot yet be predicted.

In 2020, we expect Segment EBITDA to be relatively flat compared to 2019 in our North American forest products resins business based on the latest expectations in U.S. housing starts and remodeling. Additionally, we anticipate modest overall improvement in our Latin American business due to ongoing recovery in the Brazilian economy. We continue to expect stable volumes in our North American formaldehyde solutions business in 2020, but we anticipate volume decreases in certain formaldehyde derivatives due to continued softness in the oil and gas markets in Western Canada.

We expect improvement in our epoxy specialty business in 2020 due to the ongoing introduction of new products and government supported investment in the China wind energy market. We expect softer market conditions in our base epoxy business to continue into 2020.

We do anticipate that all of our businesses will continue to benefit from the savings associated with our restructuring and cost reduction initiatives. In addition, despite the prevailing economic headwinds, with our new capital structure and the benefits of decreasing working capital we expect to generate positive free cash flow in 2020. Finally, we expect raw material price volatility to continue.

Matters Impacting Comparability of Results

Our Consolidated Financial Statements include the accounts of the Company and its majority-owned subsidiaries in which minority shareholders hold no substantive participating rights. Intercompany accounts and transactions are eliminated in consolidation.

Chapter 11 Bankruptcy and Fresh Start Accounting Impacts

As a result of the emerging from Chapter 11 and qualifying for the application of fresh-start accounting, at the Effective Date, our assets and liabilities were recorded at their estimated fair values which, in some cases, are significantly different than amounts included in our financial statements prior to the Effective Date. Accordingly, our financial condition and results of operations on and after the Effective Date are not directly comparable to our financial condition and results of operations prior to the Effective Date. The total amount of reorganization and fresh start adjustments, as well as incremental costs incurred related to our Bankruptcy Petitions incurred while we were in bankruptcy resulted in a total gain of \$3,105 which is classified within "Reorganization items, net" in the Consolidated Statements of Operations. See Note5 of this Annual Report on Form 10-K for more information on the components of "Reorganization items, net."

In addition, we incurred costs related to our Chapter 11 proceedings both prior to filing for bankruptcy and post-emergence, which are not classified within "Reorganization items, net" as these costs were not incurred while in bankruptcy. These costs were \$29 for the year ended December 31, 2019, respectively, and are classified within "Selling, general and administrative expense" in the Consolidated Statements of Operations

Raw Material Prices

Raw materials comprised approximately 75% of our cost of sales in 2019. The three largest raw materials used in our production processes are phenol, methanol and urea. These materials represented approximately 50% of our total raw material costs in 2019. Fluctuations in energy costs, such as volatility in the price of crude oil and related petrochemical products, as well as the cost of natural gas, have caused volatility in our raw material costs and utility costs. In 2019, the average price of methanol and urea decreased by approximately 22% and 5%, respectively, and the average price of phenol increased by 2%, as compared to 2018. In 2018, the average price increase of phenol, methanol and urea increased by approximately 2%, 21% and 20%, respectively, as compared to 2017. The impact of passing through raw material price changes to customers can result in significant variances in sales comparisons from year to year.

We expect long-term raw material cost volatility to continue because of price movements of key feedstocks. To help mitigate raw material volatility, we have purchase and sale contracts and commercial arrangements with many of our vendors and customers that contain periodic price adjustment mechanisms. Due to differences in timing of the pricing trigger points between our sales and purchase contracts, there is often a "lead-lag" impact. In many cases this "lead-lag" impact can negatively impact our margins in the short term in periods of rising raw material prices and positively impact them in the short term in periods of falling raw material prices.

Other Comprehensive Income

Our other comprehensive income is primarily impacted by foreign currency translation. The impact of foreign currency translation is driven by the translation of assets and liabilities of our foreign subsidiaries which are denominated in functional currencies other than the U.S. dollar. The primary assets and liabilities driving the adjustments are cash and cash equivalents; accounts receivable; inventory; property, plant and equipment; accounts payable; pension and other postretirement benefit obligations and certain intercompany loans payable and receivable. The primary currencies in which these assets and liabilities are denominated are the euro, Brazilian real, Chinese yuan, Canadian dollar and Australian dollar.

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In 2019, we entered into an interest rate swap agreement to hedge interest rate variability caused by quarterly changes in cash flow due to associated changes in LIBOR under our Senior Secured Term Loan. This swap was designed as a cash flow hedge and the change in fair value was recorded in "Accumulated other comprehensive loss".

The impact of defined benefit pension and postretirement benefit adjustments is primarily driven by unrecognized prior service cost related to our defined benefit and other non-pension postretirement benefit plans ("OPEB"), as well as the subsequent amortization of these amounts from accumulated other comprehensive income in periods following the initial recording of such amounts. Upon the application of fresh start accounting, on the Effective date, all prior unrecognized service cost within accumulated other comprehensive income related to our defined benefit pension and OPEB plans were reset in accordance with ASC 852 (Refer to Note 4 to the Consolidated Financial Statements in Item 8 of Part II of this Annual Report on Form 10-K).

Pension and OPEB MTM Adjustments

Under our accounting policy related to the recognition of gains and losses for pension and OPEB plans, upon the annual remeasurement of our pension and OPEB plans in the fourth quarter, or on an interim basis as triggering events warrant, we immediately recognize gains and losses as a mark-to-market ("MTM") gain or loss through net income. The largest component of our pension and OPEB expense typically relates to these MTM adjustments. Reductions in discount rates for the Successor period July 2, 2019 through December 31, 2019 resulted in an increase in the MTM loss of \$18, from a gain of \$13 in 2018 to a loss of \$5 in 2019. A MTM loss of \$44 was recorded upon Emergence, also driven by reductions in discount rates, which was included within "Reorganization items, net" on the Consolidated Statement of Operations for the period January 1, 2019 through July 1, 2019. In 2018, favorable pension plan asset returns resulted in an increase in the MTM gain of \$9, from a gain of \$4 in 2017 to a gain of \$13 in 2018. These MTM adjustments are recognized in "Other non-operating (income) expense, net" in the Consolidated Statements of Operations.

Results of Operations
CONSOLIDATED STATEMENTS OF OPERATIONS

	Successor	Predecessor	Non-GAAP Combined	Predecessor	
	July 2, 2019 through December 31, 2019	January 1, 2019 through July 1, 2019	Year Ended December 31,		
(In millions)			2019	2018	2017
Net sales	\$ 1,596	\$ 1,778	\$ 3,374	\$ 3,797	\$ 3,591
Cost of sales (exclusive of depreciation and amortization shown below) ⁽¹⁾	1,349	1,462	2,811	3,127	2,979
Selling, general and administrative expense ⁽¹⁾	139	145	284	277	301
Depreciation and amortization ⁽¹⁾⁽²⁾	110	52	162	117	129
Gain on dispositions	—	—	—	(44)	—
Asset impairments	—	—	—	28	13
Business realignment costs	24	15	39	29	52
Other operating expense, net	17	16	33	36	17
Operating (loss) income	(43)	88	45	227	100
Operating income as a percentage of net sales	(3)%	5%	1%	6%	3%
Interest expense, net	55	89	144	365	329
Loss on extinguishment of debt	—	—	—	—	3
Other non-operating expense (income), net	1	(11)	(10)	(12)	(12)
Reorganization items, net	—	(3,105)	(3,105)	—	—
Total non-operating expense (income)	56	(3,027)	(2,971)	353	320
(Loss) income before income tax and earnings from unconsolidated entities	(99)	3,115	3,016	(126)	(220)
Income tax (benefit) expense	(9)	222	213	40	18
(Loss) income before earnings from unconsolidated entities	(90)	2,893	2,803	(166)	(238)
Earnings from unconsolidated entities, net of taxes	2	2	4	3	4
Net (loss) income	(88)	2,895	2,807	(163)	(234)
Net (income) loss attributable to noncontrolling interest	(1)	(1)	(2)	1	—
Net (loss) income attributable to Hexion Inc.	\$ (89)	\$ 2,894	\$ 2,805	\$ (162)	\$ (234)
Other comprehensive (loss) income	\$ (1)	\$ (8)	\$ (9)	\$ (10)	\$ 31

- (1) As a result of the application of fresh start accounting upon the Company's emergence from Chapter 11, the Company elected to change its income statement presentation of depreciation and amortization expense beginning in the Successor period July 2, 2019 through December 31, 2019 and all periods thereafter. As a result, "Depreciation and amortization" has been added as a line item in the Consolidated Statements of Operations and "Cost of sales" and "Selling, general and administrative expense" excludes all depreciation and amortization expense. Refer to Note 2 in Item 8 of Part II of this Annual Report on Form 10-K for more information.

- (2) For the years ended December 31, 2018 and 2017 accelerated depreciation of \$4 and \$14, respectively, has been included in "Depreciation and amortization."

Net Sales

In 2019, net sales decreased by \$423, or 11%, compared to 2018. This increase was primarily driven by volume decreases which negatively impacted net sales by \$164 primarily related to volume decreases in our North American resins business due to weaker demand driven by customer mill closures and the impact of competitive pricing pressures, and in our phenolic resins business due to an overall weakness in the market, primarily in the automotive and construction industries. These decreases were partially offset by increased volumes in our epoxy specialty business due to strong demand in China wind energy. Pricing negatively impacted sales by \$154 due primarily to softer market conditions in our base epoxy resins business and raw material price decreases contractually passed through to customers across many of our businesses. Foreign currency translation negatively impacted net sales by \$105 due to the weakening of various foreign currencies against the U.S. dollar in 2019.

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In 2018, net sales increased by \$206, or 6%, compared to 2017. This increase was primarily driven by pricing, which positively impacted net sales by \$382 due largely to improved market conditions in our base epoxy resins business and raw material price increases contractually passed through to customers across many of our businesses. The impact of foreign currency translation positively impacted net sales by \$31 due largely to the strengthening of the euro and Chinese yuan against the U.S. dollar in 2018 compared to 2017. These increases were partially offset by volumes, which negatively impacted net sales by \$190 primarily related to volume decreases in our epoxy businesses driven by margin optimization. Additionally, volumes in our oilfield business decreased due to highly competitive market conditions. Lastly, the disposition of our ATG business in the first quarter of 2018 negatively impacted sales by \$17.

Operating Income

In 2019, operating income decreased by \$182 compared to 2018, primarily driven by margin reductions in our base epoxy resins business discussed above, the gain on the disposition of our ATG business of \$44 that occurred in the first quarter 2018, \$29 of non-cash expense related to the step up of finished goods inventory on July 1 as part of fresh start accounting that was expensed in the successor period upon the sale of the inventory, increases in depreciation and amortization of \$45 and increases in business realignment costs of \$10 and in selling, general and administrative expense of \$7. The increase in depreciation and amortization is due to the step up of our fixed and intangible assets as a result of fresh start adjustments and the increase in business realignment costs is driven by higher severance expenses related to recent cost reduction actions. The increase in selling, general and administrative expense is driven by \$29 of certain professional fees and other expenses incurred in the first, third and fourth quarters of 2019 related to our Chapter 11 proceedings, as well as the timing of variable compensation costs, partially offset by savings related to our ongoing cost savings and productivity actions. These decreases to operating income were partially offset by an asset impairment of \$28 that occurred in third quarter of 2018 within our oilfield business, as well as decreases in our other operating expense of \$3. The decrease in other operating expense is due to lower realized and unrealized foreign currency losses.

In 2018, operating income increased by \$127 compared to 2017, primarily driven by the increase in gross profit of \$68 discussed above, a gain on the disposition of our ATG business of \$44 and a decrease in business realignment costs of \$23. The decrease in business realignment costs is largely attributable to lower severance and facility closure related expenses in 2018. These increases to operating income were partially offset by increases in asset impairments of \$15 primarily related to our oilfield business, and an increase in other operating expense of \$19 due to an increase in realized and unrealized foreign currency losses.

Non-Operating Expense

In 2019, total non-operating expense decreased by \$3,324 compared to 2018, due to a \$3,105 of reorganization items, net primarily related to reorganization and fresh start adjustments associated with our emergence from bankruptcy and a decrease in interest expense of \$221 as a result of our the restructuring of our debt through our Chapter 11 proceedings. These items were partially offset by a decrease in other non-operating income of \$2 driven by the negative impact of MTM adjustments on pension and OPEB liabilities, partially offset by an increase in realized and unrealized foreign currency gains.

In 2018, total non-operating expense increased by \$33 compared to 2017, driven by an increase in interest expense of \$36 due primarily to the write-off of \$33 in unamortized deferred debt issuance costs due to the reclassification of outstanding debt to current in the fourth quarter of 2018 as a result of our Chapter 11 Filings and substantial doubt about our ability to continue as a going concern for the next twelve months, as well as higher average debt levels in 2018. These increases to interest expense are partially offset by \$3 of loss on extinguishment of debt that occurred in 2017. Note that other non-operating income remained flat as the positive impact of MTM adjustments on pension and OPEB liabilities was offset by an increase in realized and unrealized foreign currency losses.

Income Tax Expense

On December 22, 2017, the United States enacted tax reform legislation that included a broad range of business tax provisions, including but not limited to a reduction in the U.S. federal tax rate from 35% to 21% as well as provisions that limit or eliminate various deductions or credits. The legislation also causes U.S. expenses, such as interest, general administrative, and certain executive officer compensation expenses, to be taxed and imposes a new tax on U.S. cross-border payments.

The 2017 provision for income taxes included a provisional one-time charge of \$65 for the transition tax on accumulated foreign earnings and profits, which resulted in an associated one-time reduction estimated at \$185 in our net operating loss carryforward. Upon filing the 2017 income tax return, the final transition tax calculated was \$64 and the related net operating loss utilized was \$181.

As a result of U.S. tax reform we recognized the earnings of non-U.S. operations in its 2017 U.S. consolidated income tax return under the transition tax. For the year ended December 31, 2017, we accrued the incremental tax expense expected to be incurred upon the repatriation of the previously taxed earnings.

During 2017, we recognized income tax expense of \$18, primarily as a result of income from certain foreign operations. Losses in the United States created a deferred income tax benefit which was completely offset by an increase to the valuation allowance. We incurred a provisional income tax expense of \$167 associated with revaluing our net U.S. deferred tax attributes to reflect the new U.S. corporate tax rate of 21%, as well as an additional \$65 provisional income tax expense associated with the estimated transition tax. Our valuation allowance was reduced by \$234 as a result of the impact Tax Reform had on reducing our net deferred tax assets.

Due to the previously enacted U.S. tax rate change, estimated balances as of December 31, 2017 represented timing differences, which changed when those estimates were finalized with the filing of the 2017 income tax return. We updated our provisional estimate of the transition tax and assessed the impact on our valuation allowance during 2018.

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During 2018, we recognized income tax expense of \$40, primarily as a result of income from certain foreign operations. In the United States, as a result of Tax Reform, disallowed interest expense resulted in current year taxable income which utilized a net operating loss carryforward. The disallowed interest expense carryforward of \$283 generated a deferred tax asset. The decrease in the valuation allowance due to the net operating loss utilization was offset by an increase in the valuation allowance recorded on the interest expense carryforward deferred tax asset. Tax Reform also resulted in the inclusion of Global Intangible Low Tax Income ("GILTI") of \$21, which was fully offset by our net operating loss. This further reduced our valuation allowance.

Additionally, certain provisions of Tax Reform were not effective until 2018. During 2018, we evaluated and recorded the impact of these provisions in the financial statements and we made our accounting policy elections with respect to these items. We elected to account for GILTI as a current period expense in the reporting period in which the tax is incurred.

During the Predecessor period January 1, 2019 through July 1, 2019, we recorded income tax expense of \$40 for reorganization adjustments, primarily consisting of tax expense of \$50 for the gain recognized between fair value and tax basis (our gain will be substantially offset by our tax attributes, including net operating losses and previously disallowed interest expense). A tax benefit of \$10 was recorded for the removal of a valuation allowance for certain foreign jurisdictions. Pursuant to the Plan, we are obligated to indemnify the Predecessor Company for any tax related liabilities. We recorded income tax expense of \$222 in the Predecessor period, primarily related to the increase in deferred tax liabilities resulting from fresh start accounting.

The Predecessor Company's U.S. net operating loss carryforward of \$1,053 and certain state net operating loss carryforwards, along with other tax attributes, have been utilized or forfeited as a result of the taxable gain realized upon Emergence. Certain foreign net operating losses and other carryforwards of the Predecessor Company were forfeited upon Emergence.

Upon the Emergence, we applied fresh start accounting (see Note 4 for more information regarding fresh start accounting) and therefore the deferred tax assets and liabilities were adjusted based on the revised U.S. GAAP financial statements. As a result of the step-up in U.S. GAAP basis in our foreign assets without a corresponding step-up in the tax basis of the foreign assets, our deferred tax liability increased. An Internal Revenue Code §338(h)(10) election is expected to be made to treat the Emergence as an asset sale for U.S. income tax purposes. As a result, the Emergence is expected to be treated as a deemed sale of assets of the Predecessor Company while the Successor Company receives a step-up in U.S. tax basis to fair value. We anticipate electing bonus depreciation (as currently permitted under Tax Reform) on the stepped-up U.S. eligible fixed assets. We also anticipate amortizing the stepped-up basis of intangibles over a 15-year period and our depreciation and amortization expense is expected to generate a U.S. net operating loss for the tax year ended December 31, 2019. The U.S. net operating loss will be carried forward indefinitely but will be subject to an 80% limitation on U.S. taxable income.

During the Successor period July 2, 2019 through December 31, 2019, we recognized income tax benefit of \$9, primarily as a result of losses from certain foreign operations of which the deferred tax asset created is not offset by a valuation allowance. Losses in the United States created a deferred tax asset which was completely offset by an increase to the valuation allowance. The disallowed interest expense carryforward of \$34 generated a deferred tax asset which offset the decrease in the valuation allowance on the net operating loss deferred tax asset. We anticipate a GILTI inclusion of \$15, which will be fully offset by our net operating loss and further reduces our valuation allowance. As previously discussed above, we anticipate electing bonus depreciation.

Other Comprehensive Loss

In 2019, foreign currency translation negatively impacted other comprehensive loss by \$11, due to an overall weakening of various foreign currencies against the U.S. dollar in 2018, partially offset by an unrealized gain of \$2 on an interest rate swap designated as a cash flow hedge recorded to other comprehensive income.

In 2018, foreign currency translation negatively impacted other comprehensive loss by \$8, primarily due to overall weakening of various foreign currencies against the U.S. dollar in 2017, as well as the impact of \$2 of amortization of prior service costs on defined benefit pension and postretirement benefits.

In 2017, other comprehensive income of \$31 relates to the \$33 positive impact of foreign currency translation, primarily due to the overall strengthening of various foreign currencies against the U.S. dollar, partially offset by \$2 of amortization of prior service costs on defined benefit pension and postretirement benefits.

Results of Operations by Segment

Following are net sales and Segment EBITDA (earnings before interest, income taxes, depreciation and amortization) by reportable segment. Segment EBITDA is defined as EBITDA adjusted for certain non-cash items, other income and expenses and discontinued operations. Segment EBITDA is the primary performance measure used by our senior management, the chief operating decision-maker and the board of directors to evaluate operating results and allocate capital resources among segments. Segment EBITDA is also the profitability measure used to set management and executive incentive compensation goals. Segment EBITDA should not be considered a substitute for net loss or other results reported in accordance with U.S. GAAP. Segment EBITDA may not be comparable to similarly titled measures reported by other companies.

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The combined results (referenced as "Non-GAAP Combined" or "Combined") for the year ended December 31, 2019, which we refer to herein as results for the "Year Ended December 31, 2019" represent the sum of the reported amounts for the Predecessor period January 1, 2019 through July 1, 2019 combined with the Successor period from July 2, 2019 through December 31, 2019. These Combined results are not considered to be prepared in accordance with U.S. GAAP and have not been prepared as pro forma results under applicable regulations. The Non-GAAP Combined operating results is presented for supplemental purposes only, may not reflect the actual results we would have achieved absent our emergence from bankruptcy, may not be indicative of future results and should not be viewed as a substitute for the financial results of the Predecessor period and Successor period presented in accordance with U.S. GAAP. See Note 18 in Part I of this Annual Report on Form 10-K and below for reconciliation of net (loss) income to Segment EBITDA for the Successor and Predecessor.

	Non-GAAP Combined			Predecessor		
				Year Ended December 31,		
	2019	2018	2017	2019	2018	2017
Net Sales⁽¹⁾:						
Forest Products Resins	\$ 1,485	\$ 1,682	\$ 1,539			
Epoxy, Phenolic and Coating Resins	1,889	2,115	2,052			
Total	\$ 3,374	\$ 3,797	\$ 3,591			
Segment EBITDA:						
Forest Products Resins	\$ 281	\$ 285	\$ 257			
Epoxy, Phenolic and Coating Resins	186	226	174			
Corporate and Other	(67)	(71)	(66)			
Total	\$ 400	\$ 440	\$ 365			

(1) Intersegment sales are not significant and, as such, are eliminated within the selling segment.

2019 vs. 2018 Segment Results

Following is an analysis of the percentage change in sales by segment from 2018 to 2019:

	Volume	Price/Mix	Currency Translation	Total
Forest Products Resins	(4)%	(5)%	(3)%	(12)%
Epoxy, Phenolic and Coating Resins	(4)%	(4)%	(3)%	(11)%

Forest Products Resins

Net sales in 2019 decreased by \$197, or 12%, when compared to 2018. Pricing negatively impacted net sales by \$79, which was primarily due to raw material price decreases contractually passed through to customers across many of our businesses. Volume negatively impacted net sales by \$74, primarily related to volume decreases in our North American resins business due to weaker demand driven by customer mill closures and competitive pricing pressures. Foreign exchange translation negatively impacted net sales by \$44, due largely to the strengthening of the U.S. dollar against various currencies in 2019 compared to 2018.

Segment EBITDA in 2019 decreased by \$4 to \$281 compared to 2018. This decrease was primarily driven by the volume decreases in our North American resins business discussed above, largely offset by \$18 of previously recorded deferred contract revenue that was accelerated during the period as a result of the application of fresh start accounting.

Epoxy, Phenolic and Coating Resins

Net sales in 2019 decreased by \$226, or 11%, compared to 2018. Volumes negatively impacted net sales by \$90, which was primarily related to volume decreases in our base epoxy resins, phenolic specialty resins and versatic acids businesses driven by overall weakness in the market, primarily in the automotive and construction industries. These decreases were partially offset by increased volumes in our epoxy specialty business due to stronger demand in China wind energy. Pricing negatively impacted net sales by \$75 primarily due to softer market conditions in our base epoxy resins business as compared to 2018. Foreign exchange translation negatively impacted net sales by \$61, due primarily to the strengthening of the U.S. dollar against various foreign currencies in 2019 compared to 2018.

Segment EBITDA in 2019 decreased by \$40 to \$186 compared to 2018. The decrease was driven was primarily driven by the margin reductions in our base epoxy resins business due to softer market conditions discussed above.

Corporate and Other

Corporate and Other is primarily corporate, general and administrative expenses that are not allocated to the other segments, such as shared service and administrative functions, unallocated foreign exchange gains and losses and legacy company costs not allocated to the other segments. Corporate and Other charges decreased by \$4 to \$67 compared to 2018, due primarily to our ongoing cost reduction efforts, the timing of variable compensation costs and favorable foreign exchange impacts.

2018 vs. 2017 Segment Results

The table below provides additional detail of the percentage change in sales by segment from 2017 to 2018:

	Volume	Price/Mix	Currency Translation	Impact of Dispositions	Total
Forest Products Resins	— %	11%	(1)%	(1)%	9%
Epoxy, Phenolic and Coating Resins	(9)%	10%	2 %	— %	3%

Forest Products Resins

Net sales in 2018 increased by \$143, or 9%, when compared to 2017. Pricing positively impacted net sales by \$182, which was primarily due to raw material price increases contractually passed through to customers across many of our businesses. The impact of foreign exchange translation negatively impacted net sales by \$21, due largely to the strengthening of the U.S. dollar against the Brazilian real partially offset by the strengthening of the euro and Canadian dollar against the U.S. dollar in 2018 compared to 2017. Volumes were essentially flat in 2018 compared to 2017, decreasing net sales by \$1. Lastly, the disposition of our ATG business in the first quarter of 2018 negatively impacted sales by \$17.

Segment EBITDA in 2018 increased by \$28 to \$285 compared to 2017. This increase was primarily due to improved performance in our North American formaldehyde business, as well as the impact of our ongoing cost reduction initiatives.

Epoxy, Phenolic and Coating Resins

Net sales in 2018 increased by \$63, or 3%, compared to 2017. Pricing positively impacted net sales by \$200 due primarily to improved market conditions in our base epoxy resins business and raw material price increases contractually passed through to customers across many of our businesses. Volumes negatively impacted net sales by \$189, primarily related to volume decreases in our epoxy specialty business driven by margin optimization. Additionally, volumes in our oilfield business decreased due to highly competitive market conditions. The impact of foreign exchange translation positively impacted net sales by \$52, primarily due to the strengthening of the euro and the Chinese yuan against the U.S. dollar in 2018 compared to 2017.

Segment EBITDA in 2018 increased by \$52 to \$226 compared to 2017. The increase was driven by increased margins in our base epoxy resins business, as well as the impact of our ongoing cost reduction initiatives, most notably in our phenolic resins business.

Corporate and Other

Corporate and Other is primarily corporate, general and administrative expenses that are not allocated to the other segments, such as shared service and administrative functions, unallocated foreign exchange gains and losses and legacy company costs not allocated to the other segments. Corporate and Other charges increased by \$5 to \$71 compared to 2017, due primarily to higher compensation costs, partially offset by our ongoing cost savings efforts.

Reconciliation of Net Loss to Segment EBITDA:

	Successor	Predecessor	Non-GAAP Combined	Predecessor		
	July 2, 2019 through December 31, 2019	January 1, 2019 through July 1, 2019	Year Ended December 31,			
			2019	2018	2017	
Reconciliation:						
Net (loss) income attributable to Hexion Inc.	\$ (89)	\$ 2,894	\$ 2,805	\$ (162)	\$ (234)	
Net (income) loss attributable to noncontrolling interest	(1)	(1)	(2)	1	—	
Net (loss) income	(88)	2,895	2,807	(163)	(234)	
Income tax (benefit) expense	(9)	222	213	40	18	
Interest expense, net	55	89	144	365	329	
Depreciation and amortization ⁽¹⁾	110	52	162	117	129	
EBITDA	\$ 68	\$ 3,258	\$ 3,326	\$ 359	\$ 242	
Adjustments to arrive at Segment EBITDA:						
Asset impairments and write-downs	\$ —	\$ —	\$ —	\$ 32	\$ 13	
Business realignment costs	24	15	39	29	52	
Realized and unrealized foreign currency losses (gains)	5	(6)	(1)	27	3	
Gain on dispositions	—	—	—	(44)	—	
Loss on extinguishment of debt	—	—	—	—	3	
Unrealized losses (gains) on pension and OPEB plan liabilities	5	—	5	(13)	(4)	
Transaction costs	11	26	37	13	8	
Reorganization items, net ⁽²⁾	—	(3,076)	(3,076)	—	—	
Non-cash impact of inventory step-up ⁽³⁾	29	(29)	—	—	—	
Other non-cash items ⁽⁴⁾	10	9	19	14	16	
Other ⁽⁵⁾	15	36	51	23	32	
Total adjustments	99	(3,025)	(2,926)	81	123	
Segment EBITDA	\$ 167	\$ 233	\$ 400	\$ 440	\$ 365	
Segment EBITDA:						
Forest Products Resins	\$ 129	\$ 152	\$ 281	\$ 285	\$ 257	
Epoxy, Phenolic and Coating Resins	75	111	186	226	174	
Corporate and Other	(37)	(30)	(67)	(71)	(66)	
Total	\$ 167	\$ 233	\$ 400	\$ 440	\$ 365	

- (1) For the years ended December 31, 2018 and 2017 accelerated depreciation of \$4 and \$14, respectively, has been included in "Depreciation and amortization."
- (2) Excludes the "Non-cash impact of inventory step-up" discussed below.
- (3) Represents \$29 of non-cash expense related to the step up of finished goods inventory on July 1 as part of fresh start accounting that was expensed in the successor period upon the sale of the inventory (see Note 4 in Item 8 of Part II of this Annual Report on Form 10-K).
- (4) Primarily include expenses for retention programs, fixed asset disposals and share-based compensation costs.
- (5) Includes \$18 of Segment EBITDA impact related to deferred revenue that was accelerated on July 1 as part of Fresh Start accounting.

Adjustments to Arrive at Segment EBITDA

Not included in Segment EBITDA are certain non-cash items and other income and expenses.

Reorganization items, net for the Predecessor period from January 1, 2019 through July 1, 2019 represent incremental costs incurred directly as a result of the Company's Chapter 11 proceedings after the date of filing, gains on the settlement of liabilities under the Plan and the net impact of fresh start accounting adjustments. See Note 5 in Item 8 of Part II of this Annual Report on Form 10-K for more information.

For the Successor period from July 2, 2019 through December 31, 2019, transaction costs primarily included \$6 of certain professional fees and other expenses related to the Company's Chapter 11 proceedings incurred post-emergence, as well as certain professional fees related to strategic projects. For the Predecessor period from January 1, 2019 through July 1, 2019, transaction costs primarily included \$23 of certain professional fees and other expenses related to the Company's Chapter 11 proceedings incurred prior to the date of filing. For the years ended December 31, 2018 and 2017, transaction costs included certain professional fees related to strategic projects.

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For the period July 2, 2019 through December 31, 2019, January 1, 2019 through July 1, 2019 and the year ended December 31, 2018, business realignment costs primarily included costs related to certain in-process facility rationalizations and cost reduction programs. Business realignment costs for 2017 primarily included costs related to the rationalization at our Norco, LA manufacturing facility and costs related to certain in-process cost reduction programs.

For the Successor period from July 2, 2019 through December 31, 2019, items classified as "Other" primarily included IT outage costs and expenses related to legacy liabilities. For the Predecessor period from January 1, 2019 through July 1, 2019 and for the years ended December 31, 2018 and 2017, items classified as "Other" primarily included management fees and expenses related to legacy liabilities.

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Liquidity and Capital Resources

2020 Outlook

Following our emergence from our Chapter 11 proceedings, we believe we are favorably positioned to fund our ongoing liquidity requirements for the foreseeable future through cash generated from operations, as well as available borrowings under our ABL Facility. The additional liquidity provided by the Rights Offerings and the impact of the Plan on our capital structure, resulting in reduced annual debt service obligations of approximately \$210, will increase our future operational and financial flexibility and leave us well positioned to make strategic capital investments, leverage our leadership positions with both our customers and suppliers, optimize our portfolio and drive new growth programs.

At December 31, 2019, we had \$1,785 of outstanding debt and \$610 in liquidity consisting of the following:

- \$250 of unrestricted cash and cash equivalents (of which \$160 is maintained in foreign jurisdictions);
- \$301 of borrowings available under our ABL Facility (\$350 borrowing base less \$49 of outstanding letters of credit); and
- \$59 of time drafts and borrowings available under credit facilities at certain international subsidiaries.

Our net working capital (defined as accounts receivable and inventories less accounts payable) at December 31, 2019 and 2018 was \$356 and \$362, respectively. A summary of the components of our net working capital as of December 31, 2019 and 2018 is as follows:

	Successor		Predecessor	
	December 31, 2019	% of LTM Net Sales	December 31, 2018	% of LTM Net Sales ⁽¹⁾
Accounts receivable	\$ 365	11 %	\$ 412	11 %
Inventories	332	10 %	334	9 %
Accounts payable	(341)	(10)%	(384)	(10)%
Net working capital ⁽¹⁾	\$ 356	11 %	\$ 362	10 %

(1) Management believes that this non-GAAP measure is useful supplemental information. This non-GAAP measure should be considered by the reader in addition to but not instead of, the financial statements prepared in accordance with GAAP.

The decrease in net working capital of \$6 from December 31, 2018 was driven by a decrease of \$47 in accounts receivable and in inventory of \$2, primarily the result of decreased volumes in 2019 compared to 2018 and lower raw material costs. This was partially offset by a decrease in accounts payable of \$43 largely related to timing of vendor payments, primarily as a result of our Chapter 11 proceedings. Based on our new capital structure, we expect continued structural improvement in our vendor terms going forward. Consistent with the historical seasonality of our businesses, we expect an increase in net working capital in the first quarter of 2020 compared to the fourth quarter 2019.

Sources and Uses of Cash

Following are highlights from our Consolidated Statements of Cash Flows:

	Successor	Predecessor	Non-GAAP Combined	Predecessor	
	July 2, 2019 through December 31, 2019	January 1, 2019 through July 1, 2019	December 31, 2019	2018	2017
Sources (uses) of cash:					
Operating activities	\$ 224	\$ (173)	\$ 51	\$ (23)	\$ (153)
Investing activities	(58)	(42)	(100)	(40)	(110)
Financing activities	(38)	212	174	81	174
Effect of exchange rates on cash flow	1	—	1	(5)	8
Net increase (decrease) in cash and cash equivalents	\$ 129	\$ (3)	\$ 126	\$ 13	\$ (81)

Operating Activities

In 2019, operating activities provided \$51 of cash. Net income of \$2,807 included \$3,293 of net non-cash income items related to our reorganization, unrealized foreign currency gains of \$8 and other non-cash income adjustments of \$5, partially offset by depreciation and amortization of \$162, deferred tax expense of \$144, deferred financing fees of \$136, non-cash impact of inventory step-up of \$29, loss on sale of assets of \$9, unrealized losses related to the remeasurement of our pension and OPEB liabilities of \$5, and non cash stock based compensation expense of \$8. Net working capital used \$2, which was largely driven by a decrease in accounts payable due to the timing of vendor payments offset by decreases in accounts receivable due to lower volumes and lower raw material prices. Changes in other assets and liabilities and income taxes payable provided \$59 due to the timing of when items were expensed versus paid, which primarily included interest expense, employee retention programs, restructuring reserves, incentive compensation, pension plan contributions and taxes.

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In 2018, operating activities used \$23 of cash. Net loss of \$163 included \$155 of net non-cash expense items, consisting of depreciation and amortization of \$113, non-cash asset impairments and accelerated depreciation of \$32, amortization of deferred financing fees of \$49, deferred tax expense of \$12, loss on sale of assets of \$6 and unrealized foreign currency losses of \$2, partially offset by the gain on the sale of ATG of \$44 and unrealized gains related to the remeasurement of our pension and OPEB liabilities of \$13. Net working capital used \$8, which was largely driven by increases in inventories due to raw material price inflation and decreases in accounts receivable due to lower volumes. Changes in other assets and liabilities and income taxes payable used \$7 due to the timing of when items were expensed versus paid, which primarily included interest expense, employee retention programs, restructuring reserves, incentive compensation, pension plan contributions and taxes.

In 2017, operating activities used \$153 of cash. Net loss of \$234 included \$151 of net non-cash expense items, consisting of depreciation and amortization of \$115, non-cash asset impairments and accelerated depreciation of \$27, amortization of deferred financing fees \$16, loss on debt extinguishment of \$3 and unrealized foreign currency losses of \$3, partially offset by \$4 of unrealized gains related to the remeasurement of our pension and OPEB liabilities, gain on sale of assets of \$1 and a deferred tax benefit of \$3. Net working capital used \$41, which was largely driven by increases in accounts receivable and inventories due primarily to volume increases related to market conditions as well as raw material price inflation. Changes in other assets and liabilities and income taxes payable used \$29 due to the timing of when items were expensed versus paid, which primarily included interest expense, employee retention programs, restructuring reserves, incentive compensation, pension plan contributions and taxes.

Investing Activities

In 2019, investing activities used \$100, primarily driven by capital expenditures of \$101, partially offset by proceeds from sale of assets of \$1.

In 2018, investing activities used \$40, primarily driven by capital expenditures of \$90, partially offset by net proceeds from the ATG disposition of \$49 and proceeds from sale of assets of \$1.

In 2017, investing activities used \$110, primarily driven by capital expenditures of \$118 (including capitalized interest), partially offset by net proceeds from the sale of assets of \$8.

Financing Activities

In 2019, financing activities provided \$174. Net short-term debt repayments were \$28 and net long-term debt borrowings were \$40, proceeds received from the rights offering were \$300 and we also paid \$138 of financing fees. Our long-term debt borrowings primarily consisted of the proceeds from our new Senior Secured Term loans and Senior Notes, offset by the debt repayments made as part of the Plan.

In 2018, financing activities provided \$81. Net short-term debt borrowings were \$10 and net long-term debt borrowings were \$72. Our long-term debt borrowings primarily consisted of \$137 in borrowings under our Predecessor ABL Facility. We also paid \$1 of financing fees.

In 2017, financing activities provided \$174. Net short-term debt borrowings were \$21 and net long-term debt borrowings were \$178. Our long-term debt borrowings primarily consisted of \$81 in borrowings under our Predecessor ABL Facility, the refinancing of our Old Senior Secured Notes in February 2017, an additional \$75 aggregate principal amount of New First Lien Notes issued in May 2017 and \$43 related to the sale-leaseback financing of certain equipment at plants within our Forest Products Resins segment that occurred in the second half of 2017. We also paid \$25 of financing fees related to these debt transactions.

There are certain restrictions on the ability of certain of our subsidiaries to transfer funds to Hexion Inc. in the form of cash dividends, loans or otherwise, which primarily arise as a result of certain foreign government regulations or as a result of restrictions within certain subsidiaries' financing agreements limiting such transfers to the amounts of available earnings and profits or otherwise limit the amount of dividends that can be distributed. In either case, we have alternative methods to obtain cash from these subsidiaries in the form of intercompany loans and/or returns of capital in such instances where payment of dividends is limited to the extent of earnings and profits.

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Outstanding Debt

Following is a summary of our cash and cash equivalents and outstanding debt at December 31, 2019 and December 31, 2018:

	Successor December 31, 2019	Predecessor December 31, 2018
Cash and cash equivalents	\$ 254	\$ 128
Senior Secured Credit Facility:		
ABL Facility (Predecessor)	\$ —	\$ 137
ABL Facility (Successor)	—	—
Senior Secured Term Loan - USD due 2026 (includes \$7 of unamortized debt discount at December 31, 2019)	715	—
Senior Secured Term Loan - EUR due 2026 (includes \$4 of unamortized debt discount at December 31, 2019)	473	—
Senior Notes:		
7.875% Senior Notes due 2027	450	—
Senior Secured Notes:		
6.625% First-Priority Senior Secured Notes due 2020	—	1,550
10.00% First-Priority Senior Secured Notes due 2020	—	315
10.375% First-Priority Secured Notes due 2022	—	560
13.75% Senior Secured Notes due 2022	—	225
9.00% Second-Priority Senior Secured Notes due 2020	—	574
Debentures:		
9.2% debentures due 2021	—	74
7.875% debentures due 2023	—	189
Other Borrowings:		
Australia Facility due 2021 at 3.9% and 4.8% at December 31, 2019 and 2018, respectively	31	34
Brazilian bank loans at 9.2% and 10.0% at December 31, 2019 and 2018, respectively	41	53
Lease obligations ⁽¹⁾	64	66
Other at 5.0% and 5.3% at December 31, 2019 and 2018, respectively	11	38
Total	\$ 1,785	\$ 3,815

(1) Lease obligations include finance leases and sale leaseback financing arrangements. Amounts reflected for December 31, 2018 represent capital lease obligations and sale leaseback financing arrangements as recorded under ASC 840.

We regularly review our portfolio and are currently exploring potential divestitures. While there is no guarantee of a transaction, it could include a specific business unit or combination of several businesses. We expect that the proceeds from a transaction or transactions upon completion would be used to help reduce the absolute amount of our debt.

Further, depending upon market, pricing and other conditions, including the current state of the high yield bond market, as well as cash balances and available liquidity, we or our affiliates, may seek to acquire notes or other indebtedness of the Company through open market purchases, privately negotiated transactions, tender offers, redemption or otherwise, upon such terms and at such prices as we or our affiliates may determine (or as may be provided for in the indentures governing the notes), for cash or other consideration.

Covenant Compliance

Credit Facilities and Senior Notes

The instruments that govern our indebtedness contain, among other provisions, restrictive covenants (and incurrence tests in certain cases) regarding indebtedness, dividends and distributions, mergers and acquisitions, asset sales, affiliate transactions, capital expenditures and, in the case of our ABL Facility, the maintenance of a financial ratio (depending on certain conditions). Payment of borrowings under the ABL Facility and our notes may be accelerated if there is an event of default as determined under the governing debt instrument. Events of default under the credit agreement governing our ABL Facility includes the failure to pay principal and interest when due, a material breach of representations or warranties, events of bankruptcy, a change of control, and most covenant defaults. Events of default under the indentures governing our notes include the failure to pay principal and interest, a failure to comply with covenants, subject to a 30-day grace period in certain instances, and certain events of bankruptcy.

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The indenture that governs our 7.875% Senior Notes due 2027 (the “Indenture”) contains a Pro Forma EBITDA to Fixed Charges ratio incurrence test which may restrict our ability to take certain actions such as incurring additional debt or making acquisitions if we are unable to meet this ratio (measured on a last twelve months, or LTM, basis) of at least 2.0:1. The Pro Forma EBITDA to Fixed Charges Ratio under the Indenture is generally defined as the ratio of (a) Pro Forma EBITDA to (b) net interest expense excluding the amortization or write-off of deferred financing costs, each measured on an LTM basis. See below for our Pro Forma EBITDA to Fixed Charges Ratio calculation.

Our ABL Facility, which is subject to a borrowing base, does not have any financial maintenance covenant other than a minimum fixed charge coverage ratio of 1.0 to 1.0 that would only apply if our availability under the ABL Facility at any time is less than the greater of (a) \$30 and (b) 10.0% of the lesser of the borrowing base and the total ABL Facility commitments at such time. The fixed charge coverage ratio under the credit agreement governing the ABL Facility is generally defined as the ratio of (a) Pro Forma EBITDA minus non-financed capital expenditures and cash taxes to (b) debt service plus cash interest expense plus certain restricted payments, each measured for the four most recent quarters for which financial statements have been delivered.

Reconciliation of Last Twelve Months Net Loss to Adjusted EBITDA

Pro Forma EBITDA is defined as EBITDA adjusted for certain non-cash and certain non-recurring items and other adjustments calculated on a pro-forma basis, including the expected future cost savings from business optimization programs or other programs and the expected future impact of acquisitions, in each case as determined under the governing debt instrument. We believe that including the supplemental adjustments that are made to calculate Pro Forma EBITDA provides additional information to investors about our ability to comply with our financial covenants and to obtain additional debt in the future. Pro Forma EBITDA and Fixed Charges are not defined terms under U.S. GAAP. Pro Forma EBITDA is not a measure of financial condition, liquidity or profitability, and should not be considered as an alternative to net income (loss) determined in accordance with U.S. GAAP or operating cash flows determined in accordance with U.S. GAAP. Additionally, EBITDA is not intended to be a measure of free cash flow for management’s discretionary use, as it does not take into account certain items such as interest and principal payments on our indebtedness, depreciation and amortization expense (because we use capital assets, depreciation and amortization expense is a necessary element of our costs and ability to generate revenue), working capital needs, tax payments (because the payment of taxes is part of our operations, it is a necessary element of our costs and ability to operate), non-recurring expenses and capital expenditures. Fixed Charges under the Indenture should not be considered an alternative to interest expense.

The following table reconciles net income to EBITDA and Pro Forma EBITDA for the twelve month period that includes combined information from the Predecessor Company from January 1, 2019 through July 1, 2019 and the Successor Company from July 2, 2019 through December 31, 2019, and calculates the ratio of Pro Forma EBITDA to Fixed Charges as calculated under our Indenture for the period presented:

	December 31, 2019
	LTM Period
Net income	\$ 2,807
Income tax expense	213
Interest expense, net	144
Depreciation and amortization	162
EBITDA	\$ 3,326
Adjustments to arrive at Pro Forma EBITDA:	
Business realignment costs ⁽¹⁾	39
Realized and unrealized foreign currency gains	(1)
Unrealized loss on pension and OPEB plan liabilities ⁽²⁾	5
Transaction costs ⁽³⁾	37
Reorganization items, net ⁽⁴⁾	(3,105)
Non-cash impact of inventory step-up ⁽⁵⁾	29
Other non-cash items ⁽⁶⁾	19
Acceleration of deferred revenue ⁽⁷⁾	18
Other ⁽⁸⁾	38
Cost reduction programs savings ⁽⁹⁾	14
Pro Forma EBITDA	\$ 419
Pro forma fixed charges ⁽¹⁰⁾	\$ 105
Ratio of Pro Forma EBITDA to Fixed Charges	3.99

- (1) Primarily represents costs related to headcount reduction expenses and plant rationalization costs related to in-process and recently completed cost reduction programs, termination costs and other costs associated with business realignments.
- (2) Represents non-cash losses from pension and postretirement benefit plan liability remeasurements.
- (3) Represents certain professional fees related to strategic projects, including \$29 of certain professional fees and other expenses related to our Chapter 11 proceedings incurred prior to filing and post-emergence.
- (4) Represents incremental costs incurred directly as a result of our Chapter 11 proceedings after the date of filing, gains on the settlement of liabilities under the Plan and the net impact of fresh start accounting adjustments.

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- (5) Represents \$29 of non-cash expense related to the step up of finished goods inventory on July 1, 2019 as part of fresh start accounting that was expensed in the successor period upon the sale of the inventory.
- (6) Primarily include expenses for retention programs, fixed asset disposals and share-based compensation costs.
- (7) Represents the impact of deferred revenue that was accelerated on July 1, 2019 as part of fresh start accounting.
- (8) Primarily includes business optimization expenses, IT outage costs and expenses related to legacy liabilities.
- (9) Represents pro forma impact of in-process cost reduction programs savings. Cost reduction program savings represent the unrealized headcount reduction savings and plant rationalization savings related to cost reduction programs and other unrealized savings associated with the Company's business realignments activities, and represent our estimate of the unrealized savings from such initiatives that would have been realized had the related actions been completed at the beginning of the period presented. The savings are calculated based on actual costs of exiting headcount and elimination or reduction of site costs. We expect the savings to be realized within the next 12 months.
- (10) Reflects pro forma interest expense based on interest rates at December 31, 2019.

Contractual Obligations

The following table presents our contractual cash obligations at December 31, 2019. Our contractual cash obligations consist of legal commitments at December 31, 2019 that require us to make fixed or determinable cash payments, regardless of the contractual requirements of the specific vendor to provide us with future goods or services. This table does not include information about most of our recurring purchases of materials used in our production; our raw material purchase contracts do not meet this definition since they generally do not require fixed or minimum quantities. Contracts with cancellation clauses are not included, unless a cancellation would result in a major disruption to our business. For example, we have contracts for information technology support that are cancelable, but this support is essential to the operation of our business and administrative functions; therefore, amounts payable under these contracts are included. These contractual obligations are grouped in the same manner as they are classified in the Consolidated Statements of Cash Flows in order to provide a better understanding of the nature of the obligations.

	Payments Due By Year							
Contractual Obligations	2020	2021	2022	2023	2024	2025 and beyond	Total	
Operating activities:								
Purchase obligations ⁽¹⁾	\$ 151	\$ 109	\$ 51	\$ 38	\$ 38	\$ 273	\$ 660	
Interest on fixed rate debt obligations	55	52	52	36	36	107	338	
Interest on variable rate debt obligations ⁽²⁾	47	44	53	48	57	91	340	
Operating lease obligations	28	21	14	11	4	66	144	
Funding of pension and other postretirement obligations ⁽³⁾	33	31	30	31	34	171	330	
Financing activities:								
Long-term debt, including current maturities	67	52	32	16	8	1,614	1,789	
Capital lease obligations ⁽⁴⁾	3	3	—	—	—	2	8	
Total	\$ 384	\$ 312	\$ 232	\$ 180	\$ 177	\$ 2,324	\$ 3,609	

- (1) Purchase obligations are comprised of the fixed or minimum amounts of goods and/or services under long-term contracts and assumes that certain contracts are terminated in accordance with their terms after giving the requisite notice which is generally two to three years for most of these contracts; however, under certain circumstances, some of these minimum commitment term periods could be further reduced which would significantly decrease these contractual obligations.
- (2) Based on applicable interest rates in effect at December 31, 2019.
- (3) Pension and other postretirement contributions have been included in the above table for the next five years. These amounts include estimated benefit payments to be made for unfunded foreign defined benefit pension plans as well as estimated contributions to our funded defined benefit plans. The assumptions used by our actuaries in calculating these projections includes a weighted average annual return on pension assets of approximately 3.7% for the years 2020 – 2023 and the continuation of current law and plan provisions. These estimated payments may vary based on the actual return on our plan assets or changes in current law or plan provisions. See Note 13 to the Consolidated Financial Statements in Item 8 of Part II of this Annual Report on Form 10-K for more information on our pension and postretirement obligations.
- (4) Sale leaseback financing arrangements are included in "Long-term debt, including current maturities" because they are not considered leases under Topic 842.

The table above excludes payments for income taxes and environmental obligations since, at this time, we cannot determine either the timing or the amounts of all payments beyond 2019. At December 31, 2019, we recorded unrecognized tax benefits and related interest and penalties of \$186. We estimate that we will pay between \$35 and \$45 in 2020 for U.S. Federal, state and foreign income taxes. We expect non-capital environmental expenditures for 2020 through 2025 totaling \$10. See Notes 12 and 16 to the Consolidated Financial Statements in Item 8 of Part II of this Annual Report on 10-K for more information on these obligations.

Off Balance Sheet Arrangements

We had no off-balance sheet arrangements as of December 31, 2019.

Critical Accounting Estimates

In preparing our financial statements in conformity with U.S. GAAP, we have to make estimates and assumptions about future events that affect the amounts of reported assets, liabilities, revenues and expenses, as well as the disclosure of contingent assets and liabilities in the financial statements and accompanying notes. Some of these accounting policies require the application of significant judgment by management to select the appropriate assumptions to determine these estimates. By their nature, these judgments are subject to an inherent degree of uncertainty; therefore, actual results may differ significantly from estimated results. We base these judgments on our historical experience, advice from experienced consultants, forecasts and other available information, as appropriate. Our significant accounting policies are more fully described in Note 2 to the Consolidated Financial Statements in Item 8 of Part II of this Annual Report on Form 10-K.

Our most critical accounting policies, which reflect significant management estimates and judgment to determine amounts in our audited Consolidated Financial Statements, are as follows:

Fresh Start Accounting

On the Effective Date, in accordance with ASC 852, the Company applied fresh start accounting to its financial statements as (i) the holders of existing voting shares of the Company prior to its emergence received less than 50% of the voting shares of the Company outstanding following its emergence from bankruptcy and (ii) the reorganization value of the Company's assets immediately prior to confirmation of the plan of reorganization was less than the post-petition liabilities and allowed claims. Fresh start accounting was applied to the Company's consolidated financial statements as of July 1, 2019, the date it emerged from bankruptcy, which resulted in a new basis of accounting and the Company became a new entity for financial reporting purposes. As a result, the Company allocated the reorganization value of the Company to its individual assets based on their estimated fair values. Reorganization value represents the fair value of the Company's assets before considering liabilities. The excess reorganization value over the fair value of identified tangible and intangible assets was reported as goodwill.

Environmental Remediation and Restoration Liabilities

Accruals for environmental matters are recorded when we believe that it is probable that a liability has been incurred and we can reasonably estimate the amount of the liability. We have accrued \$51 and \$50 at December 31, 2019 and 2018, respectively, for all probable environmental remediation and restoration liabilities, which is our best estimate of these liabilities. Based on currently available information and analysis, we believe that it is reasonably possible that the costs associated with these liabilities may fall within a range of \$39 to \$97. This estimate of the range of reasonably possible costs is less certain than the estimates that we make to determine our reserves. To establish the upper limit of this range, we used assumptions that are less favorable to Hexion among the range of reasonably possible outcomes, but we did not assume that we would bear full responsibility for all sites to the exclusion of other potentially responsible parties.

Some of our facilities are subject to environmental indemnification agreements, where we are generally indemnified against damages from environmental conditions that occurred or existed before the closing date of our acquisition of the facility, subject to certain limitations. In other cases we have sold facilities subject to an environmental indemnification agreement pursuant to which we retain responsibility for certain environmental conditions that occurred or existed before the closing date of the sale of the facility.

Income Tax Assets and Liabilities and Related Valuation Allowances

On December 22, 2017, the United States enacted tax reform legislation that included a broad range of business tax provisions, including but not limited to a reduction in the U.S. federal tax rate from 35% to 21% as well as provisions that limit or eliminate various deductions or credits. The legislation also causes U.S. expenses, such as interest, general administrative, and certain executive officer compensation expenses, to be taxed and imposes new taxes on U.S. cross-border payments. Furthermore, the legislation includes a one-time transition tax on accumulated foreign earnings and profits.

We continue to evaluate the accounting impacts of the legislation, assemble and analyze the required information, and await additional guidance from the U.S. Treasury Department, the IRS, or other standard-setting bodies. Additionally, we continue to analyze other information and regulatory guidance. See Note 16 for further details on the impacts of U.S. tax reform.

At December 31, 2019, we had a valuation allowance of \$140 against our deferred income tax assets. This valuation allowance is made up of a \$59 valuation allowance against all of our net U.S. federal and state deferred income tax assets, as well as a valuation allowance of \$81 against a portion of our net foreign deferred income tax assets, primarily in the Netherlands.

At December 31, 2018, we had a valuation allowance of \$547 against our deferred income tax assets. This valuation allowance is made up of a \$377 valuation allowance against all of our net U.S. federal and state deferred income tax assets, as well as a valuation allowance of \$145 against a portion of our net foreign deferred income tax assets, primarily in Germany and the Netherlands.

The valuation allowances require an assessment of both negative and positive evidence, such as operating results during the most recent three-year period. This evidence is given more weight than our expectations of future profitability, which are inherently uncertain.

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The Company considered all available evidence, both positive and negative, in assessing the need for a valuation allowance for deferred tax assets. The Company evaluated four possible sources of taxable income when assessing the realization of deferred tax assets:

- Taxable income in prior carryback years;
- Future reversals of existing taxable temporary differences;
- Tax planning strategies; and
- Future taxable income exclusive of reversing temporary differences and carryforwards.

For 2019, previous and current losses in the U.S. and in certain foreign operations for recent periods continue to provide sufficient negative evidence requiring a valuation allowance against the net federal, state, and certain foreign deferred tax assets.

Uncertainty in income taxes is recognized in the financial statements in accordance with the applicable accounting guidance. The guidance prescribes a recognition threshold and measurement attribute for the financial statement recognition and measurement of tax positions taken or expected to be taken in its tax return. We also apply the guidance relating to de-recognition, classification, interest and penalties, accounting in interim periods, disclosure and transition.

The calculation of our income tax liabilities involves dealing with uncertainties in the application of complex domestic and foreign income tax regulations. Unrecognized tax benefits are generated when there are differences between tax positions taken in a tax return and amounts recognized in the Consolidated Financial Statements. Tax benefits are recognized in the Consolidated Financial Statements when it is more likely than not that a tax position will be sustained upon examination. Tax benefits are measured as the largest amount of benefit that is greater than 50% likely to be realized upon settlement. To the extent we prevail in matters for which liabilities have been established, or are required to pay amounts in excess of our liabilities, our effective income tax rate in a given period could be materially impacted. An unfavorable income tax settlement may require the use of cash and result in an increase in our effective income tax rate in the year it is resolved. A favorable income tax settlement would be recognized as a reduction in the effective income tax rate in the year of resolution. At December 31, 2019 and December 31, 2018, we recorded unrecognized tax benefits and related interest and penalties of \$186 and \$145, respectively.

Pensions and Non-Pension Postretirement Benefit Plans

The amounts that we recognize in our financial statements for pension benefit obligations are determined by actuarial valuations. Inherent in these valuations are certain assumptions, the more significant of which are:

- The weighted average rate used for discounting the liability;
- The weighted average expected long-term rate of return on pension plan assets;
- The method used to determine market-related value of pension plan assets;
- The weighted average rate of future salary increases; and
- The anticipated mortality rate tables.

The discount rate reflects the rate at which pensions could be effectively settled. When selecting a discount rate, our actuaries provide us with a cash flow model that uses the yields of high-grade corporate bonds with maturities consistent with our anticipated cash flow projections. Our pension and OPEB liabilities and related service and interest cost are calculated using a split-rate interest discounting methodology, whereby expected future cash flows related to these liabilities are discounted using multiple interest rates on a forward curve that correspond to the timing of the expected cash flows.

The expected long-term rate of return on plan assets is determined based on the various plans' current and projected asset mix. To determine the expected overall long-term rate of return on assets, we take into account the rates on long-term debt investments that are held in the portfolio, as well as expected trends in the equity markets, for plans including equity securities.

The market-related value of pension plan assets is determined based on the nature of the investment. Equity and fixed income securities are primarily in pooled asset and mutual funds and are valued based on underlying net asset value multiplied by the number of shares held. The underlying asset values are based on observable inputs and quoted market prices. Cash equivalents represent investments in a collective short term investment fund, which is a cash sweep for uninvested cash that earns interest monthly. For these investments, book value is assumed to equal fair value due to the short duration of the investment term. Investments in commingled funds with exposure to a variety of hedge fund strategies, which are not publicly traded and have ongoing redemption restrictions, are measured at net asset value per share as a practical expedient for fair value, which is derived from the underlying asset values in these funds, only some of which represent observable inputs and quoted market prices.

The rate of increase in future compensation levels is determined based on salary and wage trends in the chemical and other similar industries, as well as our specific compensation targets.

The mortality tables that are used represent the most commonly used mortality projections for each particular country, and reflect projected mortality improvements.

We believe the current assumptions used to estimate plan obligations and pension expense are appropriate in the current economic environment. However, as economic conditions change, we may change some of our assumptions, which could have a material impact on our financial condition and results of operations.

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The following table presents the sensitivity of our projected pension benefit obligation ("PBO"), accumulated benefit obligation ("ABO"), deficit ("Deficit") and 2019 pension expense to the following changes in key assumptions:

	Increase / (Decrease) at December 31, 2019		Increase / (Decrease)
	PBO	ABO	2019 Expense
Assumption:			
Increase in discount rate of 0.5%	\$ (85)	\$ (79)	\$ 15
Decrease in discount rate of 0.5%	74	34	(16)
Increase in estimated return on assets of 1.0%	N/A	N/A	(7)
Decrease in estimated return on assets of 1.0%	N/A	N/A	7

Impairment of Long-Lived Assets, Goodwill and Other Intangible Assets

Goodwill

Our reporting units include epoxy, phenolic specialty resins, oilfield, versatics and forest products. Our reporting units are generally one level below our operating segments for which discrete financial information is available and reviewed by segment management. However, components of an operating segment can be aggregated as one reporting unit if the components have similar economic characteristics. We perform an annual assessment of qualitative factors to determine whether the existence of any events or circumstances leads to a determination that it is more likely than not that the fair value of a reporting unit is less than the carrying amount of the reporting unit's net assets. If, after assessing all events and circumstances, we determine it is more likely than not that the fair value of a reporting unit is less than the carrying amount of the reporting unit's net assets, we use a probability weighted market and income approach to estimate the fair value of the reporting unit. Our market approach is a comparable analysis technique commonly used in the investment banking and private equity industries based on the EBITDA multiple technique. Under this technique, estimated fair value is the result of a market based EBITDA multiple that is applied to an appropriate historical EBITDA amount, adjusted for the additional fair value that would be assigned by a market participant obtaining control over the reporting unit. Our income approach is a discounted cash flow model. The discounted cash flow model requires management to project revenues, operating expenses, working capital investment, taxes, capital spending and cash flows over a multi-year period, as well as determine the weighted average cost of capital to be used as a discount rate. Applying this discount rate to the multi-year projections provides an estimate of fair value for the reporting unit. If the carrying value of the reporting unit exceeds the estimated fair value, an impairment charge is recorded for the difference.

In 2017, due to the Company lowering its forecast of estimated earnings and cash flows for its oilfield business from those previously projected and indefinitely idling a manufacturing facility within its oilfield business, and due to the slower than previously assumed recovery in the oil and gas market, the estimated fair value of the Company's oilfield reporting unit was less than the carrying value of the net assets of the reporting unit. In estimating the fair value of the oilfield reporting unit, the Company relied solely on a discounted cash flow model income approach. This was due to the Company's belief that the reporting unit's EBITDA, a key input under the market approach, was not representative and consistent with the reporting unit's historical performance and long-term outlook and, therefore, was not consistent with assumptions that a market participant would use in determining the fair value of the reporting unit. To measure the amount of the goodwill impairment, the Company allocated the estimated fair value of the reporting unit to the reporting unit's assets and liabilities. As a result of this allocation, the Company estimated that the implied fair value of the oilfield reporting unit's goodwill was \$0. As such, the entire oilfield reporting unit's goodwill balance of \$13 was impaired during the third quarter of 2017, and the Company recognized a goodwill impairment charge of \$13 in its Epoxy, Phenolic and Coating Resins segment, which is included in "Asset impairments" in the Consolidated Statements of Operations. Significant unobservable inputs in the discounted cash flow analysis included projected long-term future cash flows, projected growth rates and discount rates associated with this reporting unit. Future projected long-term cash flows and growth rates were derived from models based upon forecasts prepared by the Company's management. These projected cash flows were discounted using a rate of 13.5%.

As of October 1, 2019 and 2018, the estimated fair value of each of our reporting units containing goodwill were deemed to be in excess of the carrying amount of assets and liabilities assigned to each unit. The step up of fixed and intangible asset values during fresh start accounting resulted in an increase of the carrying amounts of net assets for the Company's reporting units that have goodwill, thereby reducing the amount of headroom between the fair value and carrying value of these reporting units. As a result, future unfavorable changes to business results and/or discounted cash flows for these reporting units are more likely to result in asset impairments.

Other Intangible Assets

We review our amortizable intangible assets for impairment when events or changes in circumstances indicate the carrying value may not be recoverable. Factors that may be a change in circumstances, indicating that the carrying value of our amortizable intangible assets may not be recoverable, include goodwill impairment, idling of a plant and a reduction to the estimated useful life. We may in the future be required to record a significant charge in our consolidated financial statements during the period in which any impairment of our amortizable intangible assets is determined, negatively affecting our results of operations.

Long-Lived Assets

As events warrant, we evaluate the recoverability of long-lived assets, other than goodwill and other indefinite-lived intangibles, by assessing whether the carrying value can be recovered over their remaining useful lives through the expected future undiscounted operating cash flows of the underlying business. Impairment indicators include, but are not limited to, a significant decrease in the market price of a long-lived asset; a significant adverse change in the manner in which the asset is being used or in its physical condition; a significant adverse change in legal factors or the business climate that could affect the value of a long-lived asset; an accumulation of costs significantly in excess of the amount originally expected for the acquisition or construction of a long-lived asset; current period operating or cash flow losses combined with a history of operating or cash flow losses associated with the use of the asset; or a current expectation that it is more likely than not that a long-lived asset will be sold or otherwise disposed of significantly before the end of its previously estimated useful life. As a result, future decisions to change our manufacturing process, exit certain businesses, reduce excess capacity, temporarily idle facilities and close facilities could result in material impairment charges. Long-lived assets are grouped together at the lowest level for which identifiable cash flows are largely independent of cash flows of other groups of long-lived assets. Any impairment loss that may be required is determined by comparing the carrying value of the assets to their estimated fair value. We do not have any indefinite-lived intangible assets, other than goodwill.

Recently Issued Accounting Standards

See Note 2 in Item 8 of Part II of this Annual Report on Form 10-K for a detailed description of recently issued accounting pronouncements.

ITEM 7A - QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We are exposed to market risk, including changes in currency exchange rates, interest rates and certain commodity prices. To manage the volatility related to these exposures we use various financial instruments, including some derivatives, to help us hedge our foreign currency exchange risk and interest rate risk. We also use raw material purchasing contracts and pricing contracts with our customers to help mitigate commodity price risks. These contracts generally do not contain minimum purchase requirements.

We do not use derivative instruments for trading or speculative purposes. We manage counterparty credit risk by entering into derivative instruments only with financial institutions with investment-grade ratings.

Foreign Exchange Risk

Our international operations accounted for 56% of our sales in both 2019 and 2018, respectively. As a result, we have significant exposure to foreign exchange risk on transactions that can potentially be denominated in many foreign currencies. These transactions include foreign currency denominated imports and exports of raw materials and finished goods (both intercompany and third party) and loan repayments. The functional currency of our operating subsidiaries is the related local currency.

We reduce foreign currency cash flow exposure from exchange rate fluctuations where economically feasible by hedging firmly committed foreign currency transactions. Our use of forward contracts is designed to protect our cash flows against unfavorable movements in exchange rates, to the extent of the amount that is under contract. We do not attempt to hedge foreign currency exposure in a manner that would entirely eliminate the effect of changes in foreign currency exchange rates on net income and cash flow. We do not speculate in foreign currency nor do we hedge the foreign currency translation of our international businesses to the U.S. dollar for purposes of consolidating our financial results, or other foreign currency net asset or liability positions.

We are party to various foreign exchange rate swaps in Brazil in order to reduce the foreign currency risk associated with certain assets and liabilities of our Brazilian subsidiary that are denominated in U.S. dollars. The counter-parties to the foreign exchange rate swap agreements are financial institutions with investment grade ratings. We do not apply hedge accounting to these derivative instruments.

Our foreign exchange risk is also mitigated because we operate in many foreign countries, which reduces the concentration of risk in any one currency. In addition, our foreign operations have limited imports and exports, which reduces the potential impact of foreign currency exchange rate fluctuations.

A 5% strengthening of the U.S. dollar against the primary currencies in which we conduct our non-U.S. operations in 2019 would generate an approximate \$94 negative impact to our estimated net sales. Conversely, a 5% weakening of the U.S. dollar against the same currencies would benefit our estimated net sales by an equal amount.

Interest Rate Risk

We have exposure to interest rate risk through our variable rate borrowing activities. As a result of our emergence from Chapter 11, the interest rates of approximately 30% of our outstanding debt are fixed. Assuming the amount of our variable debt remains the same, an increase of 1% in the interest rates on our variable rate debt would increase our 2020 estimated debt service requirements by approximately \$13.

On October 10, 2019, we executed an interest rate swap agreement to hedge interest rate variability caused by quarterly changes in cash flow due to associated changes in LIBOR under the Company's Senior Secured Term Loan. In this arrangement, we receive a variable 3-month LIBOR and pay fixed interest rate swaps, effective January 1, 2020 and expiring January 1, 2025, and we have designated \$300 of our variable rate Senior Secured Term Loan as the notional amount for the future interest rate payments. As a result of this transaction 46% of our outstanding debt will be fixed.

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On October 22, 2019, the Company executed an interest rate cap derivative instrument for a premium amount of less than \$1. The objective of this instrument is to partially eliminate the variability of cash flows in future interest payments for a notional amount of \$375 of its variable rate Senior Secured Term Loan when 3-month LIBOR is above 2.50%. This transaction becomes effective January 1, 2020 and expires January 1, 2023. This transaction further mitigates the impact of future interest rate increases.

Following is a summary of our outstanding debt as of December 31, 2019 and 2018 (see Note 8 in Item 8 of Part II of this Annual Report on Form 10-K for additional information on our debt). The fair value of our publicly held debt is based on the price at which the bonds are traded or quoted at December 31, 2019 and 2018. All other debt fair values are based on other similar financial instruments, or based upon interest rates that are currently available to us for the issuance of debt with similar terms and maturities.

Year	2019			2018		
	Debt Maturities	Weighted Average Interest Rate	Fair Value	Debt Maturities	Weighted Average Interest Rate	Fair Value
2019				\$ 3,716	8.2%	\$ 2,646
2020	\$ 70	5.8%	\$ 71	49	6.7%	49
2021	55	5.9%	54	11	10.1%	11
2022	32	5.8%	32	24	10.1%	24
2023	16	5.9%	15	8	10.1%	8
2024	8	5.8%	8	1	10.1%	1
2025 and beyond	1,615	5.8%	1,635	6	10.0%	6
	<u>\$ 1,796</u>		<u>\$ 1,815</u>	<u>\$ 3,815</u>		<u>\$ 2,745</u>

Our cash equivalent investments and short-term investments are made in instruments that meet the credit quality standards that are established in our investment policies, which also limits the exposure to any one investment. At December 31, 2019 and 2018, we had \$74 and \$31, respectively, invested at average rates of 2.1% and 4.1%, respectively, primarily in interest-bearing money-market investments. Due to the short maturity of our cash equivalents, the carrying value of these investments approximates fair value. Our short-term investments are recorded at cost which approximates fair value. Our interest rate risk is not significant; a 1% increase or decrease in interest rates on invested cash would not have had a material effect on our net income or cash flows for the years ended December 31, 2019 and 2018.

Commodity Risk

We are exposed to price risks on raw material purchases, most significantly with phenol, methanol, urea, acetone, propylene and chlorine. For our commodity raw materials, we have purchase contracts that have periodic price adjustment provisions. Commitments with certain suppliers, including our phenol and urea suppliers, provide up to 100% of our estimated requirements but also provide us with the flexibility to purchase a certain portion of our needs in the spot market, when it is favorable to us. We rely on long-term agreements with key suppliers for most of our raw materials. The loss of a key source of supply or a delay in shipments could have an adverse effect on our business. Should any of our suppliers fail to deliver or should any key long-term supply contracts be cancelled, we would be forced to purchase raw materials in the open market, and no assurances can be given that we would be able to make these purchases or make them at prices that would allow us to remain competitive. Our largest supplier provided approximately 14% of our raw material purchases in 2019, and we could incur significant time and expense if we had to replace this supplier. In addition, several feedstocks at various facilities are transported through a pipeline from one supplier. If we were unable to receive these feedstocks through these pipeline arrangements, we may not be able to obtain them from other suppliers at competitive prices or in a timely manner. See the discussion about the risk factor on raw materials in Item 1A of Part I of this Annual Report on Form 10-K.

Natural gas is essential in our manufacturing processes, and its cost can vary widely and unpredictably. To help control our natural gas costs, we hedge a portion of our natural gas purchases for North America by entering into futures contracts for natural gas. These contracts are settled for cash each month based on the closing market price on the last day that the contract trades on the New York Mercantile Exchange. We also enter into fixed price forward contracts for the purchase of electricity at certain of our manufacturing plants to offset the risk associated with increases in the prices of the underlying commodities.

We recognize gains and losses on these contracts each month as gas and electricity is used. Our future commitments are marked-to-market on a quarterly basis. We have not applied hedge accounting to these contracts.

Our commodity risk is moderated through our selected use of customer contracts with selling price provisions that are indexed to publicly available indices for the relevant commodity raw materials.

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ITEM 8 - FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

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**HEXION INC.
CONSOLIDATED BALANCE SHEETS**

	Successor	Predecessor
(In millions, except share data)	December 31, 2019	December 31, 2018
Assets		
Current assets:		
Cash and cash equivalents (including restricted cash of \$4 and \$15, respectively)	\$ 254	\$ 128
Accounts receivable (net of allowance for doubtful accounts of \$3 and \$16, respectively)	365	412
Inventories:		
Finished and in-process goods	232	240
Raw materials and supplies	100	94
Other current assets	51	57
Total current assets	1,002	931
Investments in unconsolidated entities	17	19
Deferred income taxes (see Note 16)	6	—
Other long-term assets	55	34
Property and equipment:		
Land	116	89
Buildings	172	285
Machinery and equipment	1,368	2,293
	1,656	2,667
Less accumulated depreciation	(78)	(1,826)
	1,578	841
Operating lease assets (see Note 11)	122	—
Goodwill (see Note 8)	178	109
Other intangible assets, net (see Note 8)	1,188	27
Total assets	\$ 4,146	\$ 1,961
Liabilities and Equity (Deficit)		
Current liabilities:		
Accounts payable	\$ 341	\$ 384
Debt payable within one year (see Note 10)	70	3,716
Interest payable	35	82
Income taxes payable	17	5
Accrued payroll and incentive compensation	48	52
Current portion of operating lease liabilities (see Note 11)	22	—
Other current liabilities	105	106
Total current liabilities	638	4,345
Long-term liabilities:		
Long-term debt (see Note 8)	1,715	99
Long-term pension and postretirement benefit obligations (see Note 13)	252	221
Deferred income taxes (see Note 16)	164	15
Operating lease liabilities (see Note 11)	86	—
Other long-term liabilities	216	195
Total liabilities	3,071	4,875
Commitments and contingencies (see Notes 10 and 12)		
Equity (Deficit)		
Common stock (Successor)—\$0.01 par value; 100 shares authorized, issued and outstanding December 31, 2019	—	—
Paid-in capital (Successor)	1,165	—
Common stock (Predecessor)—\$0.01 par value; 300,000,000 shares authorized, 170,605,906 issued and 82,556,847 outstanding at December 31, 2018	—	1
Paid-in capital (Predecessor)	—	526
Treasury stock (Predecessor), at cost—88,049,059 shares	—	(296)
Accumulated other comprehensive loss	(1)	(18)
Accumulated deficit	(89)	(3,125)
Total Hexion Inc. shareholders' equity (deficit)	1,075	(2,912)
Noncontrolling interest	—	(2)
Total equity (deficit)	1,075	(2,914)
Total liabilities and equity (deficit)	\$ 4,146	\$ 1,961

See Notes to Consolidated Financial Statements

**HEXION INC.
CONSOLIDATED STATEMENTS OF OPERATIONS**

(In millions)	Successor	Predecessor		
	July 2, 2019 through December 31, 2019	January 1, 2019 through July 1, 2019	Year Ended December 31,	
			2018	2017
Net sales	\$ 1,596	\$ 1,778	\$ 3,797	\$ 3,591
Cost of sales (exclusive of depreciation and amortization shown below, see Note 2)	1,349	1,462	3,127	2,979
Selling, general and administrative expense (see Note 2)	139	145	277	301
Depreciation and amortization (see Note 2)	110	52	117	129
Gain on dispositions (see Note 15)	—	—	(44)	—
Asset impairments (see Note 6)	—	—	28	13
Business realignment costs	24	15	29	52
Other operating expense, net	17	16	36	17
Operating (loss) income	(43)	88	227	100
Interest expense, net	55	89	365	329
Loss on extinguishment of debt	—	—	—	3
Other non-operating expense (income), net	1	(11)	(12)	(12)
Reorganization items, net (see Note 5)	—	(3,105)	—	—
(Loss) income before income tax and earnings from unconsolidated entities	(99)	3,115	(126)	(220)
Income tax (benefit) expense (see Note 16)	(9)	222	40	18
(Loss) income before earnings from unconsolidated entities	(90)	2,893	(166)	(238)
Earnings from unconsolidated entities, net of taxes	2	2	3	4
Net (loss) income	(88)	2,895	(163)	(234)
Net (income) loss attributable to noncontrolling interest	(1)	(1)	1	—
Net (loss) income attributable to Hexion Inc.	\$ (89)	\$ 2,894	\$ (162)	\$ (234)

See Notes to Consolidated Financial Statements

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**HEXION INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE (LOSS) INCOME**

(In millions)	Successor	Predecessor		
	July 2, 2019 through December 31, 2019	January 1, 2019 through July 1, 2019	Year Ended December 31,	
			2018	2017
Net (loss) income	\$ (88)	\$ 2,895	\$ (163)	\$ (234)
Other comprehensive (loss) income, net of tax:				
Foreign currency translation adjustments	(3)	(8)	(8)	33
Unrealized gain on cash flow hedge	2	—	—	—
Loss recognized from pension and postretirement benefits	—	—	(2)	(2)
Other comprehensive (loss) income	(1)	(8)	(10)	31
Comprehensive (loss) income	(89)	2,887	(173)	(203)
Comprehensive (income) loss attributable to noncontrolling interest	(1)	(1)	1	—
Comprehensive (loss) income attributable to Hexion Inc.	\$ (90)	\$ 2,886	\$ (172)	\$ (203)

See Notes to Consolidated Financial Statements

HEXION INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS

(In millions)	Successor	Predecessor		
	July 2, 2019 through December 31, 2019	January 1, 2019 through July 1, 2019	Year Ended December 31,	
			2018	2017
Cash flows provided by (used in) operating activities				
Net (loss) income	\$ (88)	\$ 2,895	\$ (163)	\$ (234)
Adjustments to reconcile net loss to net cash used in operating activities:				
Depreciation and amortization	110	52	113	115
Non-cash asset impairments and accelerated depreciation	—	—	32	27
Non-cash reorganization items, net	—	(3,293)	—	—
Non-cash impact of inventory step-up	29	—	—	—
Deferred tax (benefit) expense	(12)	156	12	(3)
Gain on dispositions (see Note 15)	—	—	(44)	—
Loss (gain) on sale of assets	6	3	6	(1)
Amortization of deferred financing fees	—	—	49	16
Loss on extinguishment of debt	—	—	—	3
Unrealized foreign currency (gains) losses	(1)	(7)	2	3
Non-cash stock based compensation expense	8	—	—	—
Unrealized losses (gains) on pension and postretirement benefit plan liabilities	5	—	(13)	(4)
Financing fees included in net loss	—	136	—	—
Other non-cash adjustments	(3)	(2)	(2)	(5)
Net change in assets and liabilities:				
Accounts receivable	136	(88)	24	(50)
Inventories	17	(19)	(31)	(10)
Accounts payable	(20)	(28)	(1)	19
Income taxes payable	(3)	18	8	9
Other assets, current and non-current	28	(7)	(15)	1
Other liabilities, current and non-current	12	11	—	(39)
Net cash provided by (used in) operating activities	224	(173)	(23)	(153)
Cash flows used in investing activities				
Capital expenditures	(58)	(43)	(90)	(117)
Capitalized interest	—	—	—	(1)
Proceeds from dispositions, net	—	—	49	—
Proceeds from sale of assets, net	—	1	1	8
Net cash used in investing activities	(58)	(42)	(40)	(110)
Cash flows (used in) provided by financing activities				
Net short-term debt (repayments) borrowings	(24)	(4)	10	21
Borrowings of long-term debt	118	2,313	540	1,429
Repayments of long-term debt	(130)	(2,261)	(468)	(1,251)
Proceeds from rights offering	—	300	—	—
Financing fees paid	(2)	(136)	—	—
Long-term debt and credit facility financing fees	—	—	(1)	(25)
Net cash (used in) provided by financing activities	(38)	212	81	174
Effect of exchange rates on cash and cash equivalents	1	—	(5)	8
Increase (decrease) in cash and cash equivalents	129	(3)	13	(81)
Cash, cash equivalents and restricted cash at beginning of period	125	128	115	196
Cash, cash equivalents and restricted cash at end of period	\$ 254	\$ 125	\$ 128	\$ 115
Supplemental disclosures of cash flow information				
Cash paid for:				
Interest, net	\$ 22	\$ 71	\$ 318	\$ 302
Income taxes, net of cash refunds	10	10	17	13
Reorganization items, net	—	188	—	—

See Notes to Consolidated Financial Statements

**HEXION INC.
CONSOLIDATED STATEMENTS OF EQUITY (DEFICIT)**

(In millions)	Common Stock	Paid-in Capital	Treasury Stock	Accumulated Other Comprehensive Loss	Accumulated (Deficit) Equity	Total Hexion Inc. (Deficit) Equity	Non- controlling Interest	Total Shareholder's (Deficit) Equity
Predecessor								
Balance at December 31, 2016	\$ 1	\$ 526	\$ (296)	\$ (39)	\$ (2,730)	\$ (2,538)	\$ (1)	\$ (2,539)
Net loss	—	—	—	—	(234)	(234)	—	(234)
Other comprehensive loss	—	—	—	31	—	31	—	31
Balance at December 31, 2017	1	526	(296)	(8)	(2,964)	(2,741)	(1)	(2,742)
Net loss	—	—	—	—	(162)	(162)	(1)	(163)
Other comprehensive income	—	—	—	(10)	—	(10)	—	(10)
Impact of change in accounting policy (ASC 606)	—	—	—	—	1	1	—	1
Balance at December 31, 2018	1	526	(296)	(18)	(3,125)	(2,912)	(2)	(2,914)
Net income	—	—	—	—	2,894	2,894	1	2,895
Other comprehensive loss	—	—	—	(8)	—	(8)	—	(8)
Elimination of Predecessor Equity	(1)	(526)	296	—	231	—	—	—
Elimination of Predecessor accumulated other comprehensive loss	—	—	—	26	—	26	—	26
Balance at July 1, 2019	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ (1)	\$ (1)
Issuance of Successor Company common stock	—	1,157	—	—	—	1,157	—	1,157
Successor								
Balance at July 2, 2019	\$ —	\$ 1,157	\$ —	\$ —	\$ —	\$ 1,157	\$ (1)	\$ 1,156
Net (loss) income	—	—	—	—	(89)	(89)	1	(88)
Stock-based compensation	—	8	—	—	—	8	—	8
Other comprehensive loss	—	—	—	(1)	—	(1)	—	(1)
Balance at December 31, 2019	\$ —	\$ 1,165	\$ —	\$ (1)	\$ (89)	\$ 1,075	\$ —	\$ 1,075

See Notes to Consolidated Financial Statements

HEXION INC.

Notes to Consolidated Financial Statements
(In millions, except share data)

1. Background and Basis of Presentation

Based in Columbus, Ohio, Hexion Inc. ("Hexion" or the "Company"), serves global industrial markets through a broad range of thermoset technologies, specialty products and technical support for customers in a diverse range of applications and industries. At December 31, 2019, the Company had 45 production and manufacturing facilities, with 21 located in the United States. The Company's business is organized based on the products offered and the markets served. At December 31, 2019, the Company had three reportable segments: Forest Products Resins; Epoxy, Phenolic and Coating Resins; and Corporate and Other.

As a result of the Company's reorganization and emergence from Chapter 11 (as defined in Note 3) on the morning of July 1, 2019 (the "Effective Date"), the Company's direct parent is Hexion Intermediate Holding 2, Inc. ("Hexion Intermediate"), a holding company and wholly owned subsidiary of Hexion Intermediate Holding 1, Inc., a holding company and wholly owned subsidiary of Hexion Holdings Corporation, the ultimate parent of Hexion ("Hexion Holdings"). Prior to its reorganization, the Company's parent was Hexion LLC, a holding company and wholly owned subsidiary of Hexion Holdings LLC (now known as Hexion TopCo, LLC or "TopCo"), the previous ultimate parent entity of Hexion, which was controlled by investment funds managed by affiliates of Apollo Management Holdings, L.P. (together with Apollo Global Management, Inc. and its subsidiaries, "Apollo"). On the Effective Date, the Company's existing common stock were cancelled and 100 new shares of common stock were issued at a par value of \$0.01 to the Company's new direct parent Hexion Intermediate in accordance with the Plan (as defined in Note 3) for more information.

The Company filed for Chapter 11 bankruptcy protection on April 1, 2019 (the "Petition Date") and as the Company previously disclosed, based on its financial condition and its projected operating results, the defaults under its debt agreements, and the risks and uncertainties surrounding its Chapter 11 proceedings (see Note 3), that there was substantial doubt as to the Company's ability to continue as a going concern as of the issuance of the Company's 2018 Annual Report on Form 10-K. After the Company's emergence from Chapter 11 on July 1, 2019, based on its new capital structure, liquidity position and projected operating results, the Company expects to continue as a going concern for the next twelve months. See Note 3 for more information.

Financial Reporting in Reorganization

Effective on the Petition Date, the Company applied Accounting Standard Codification, No. 852, "Reorganizations," ("ASC 852") which is applicable to companies under Chapter 11 bankruptcy protection. It requires the financial statements for periods subsequent to the Chapter 11 filing to distinguish transactions and events that are directly associated with the reorganization from the ongoing operations of the business. Expenses, realized gains and losses, and provisions for losses that are directly associated with reorganization proceedings must be reported separately as "Reorganization items, net" in the Consolidated Statements of Operations. In addition, the balance sheet must distinguish debtor pre-petition liabilities subject to compromise ("LSTC") from liabilities of non-filing entities, pre-petition liabilities that are not subject to compromise and post-petition liabilities in the accompanying Consolidated Balance Sheet. LSTC are pre-petition obligations that are not fully secured and have at least a possibility of not being repaid at the full claim amount. LSTC related to debt, its related interest payable and certain affiliate payables were settled in accordance with the Plan, as applicable, on or shortly after the Company emerged from Chapter 11 bankruptcy on July 1, 2019. As of July 1, 2019, all remaining liabilities subject to compromise were not impaired and remain on the Company's Consolidated Balance Sheets.

The Company's Consolidated Balance Sheets as of December 31, 2019 and 2018 included in this Annual Report on Form 10-K were prepared under the basis of accounting assuming that the Company will continue as a going concern, which contemplated continuity of operations, realization of assets and satisfaction of liabilities and commitments in the normal course of business.

Fresh Start Accounting

On the Effective Date, in accordance with ASC 852, the Company applied fresh start accounting to its financial statements as (i) the holders of existing voting shares of the Company prior to its emergence received less than 50% of the voting shares of the Company outstanding following its emergence from bankruptcy and (ii) the reorganization value of the Company's assets immediately prior to confirmation of the plan of reorganization was less than the post-petition liabilities and allowed claims. Fresh start accounting was applied to the Company's consolidated financial statements as of July 1, 2019, the date it emerged from bankruptcy, which resulted in a new basis of accounting and the Company became a new entity for financial reporting purposes. As a result, the Company allocated the reorganization value of the Company to its individual assets based on their estimated fair values. Reorganization value represents the fair value of the Company's assets before considering liabilities. The excess reorganization value over the fair value of identified tangible and intangible assets was reported as goodwill.

As a result of the application of fresh start accounting and the effects of the implementation of the Plan, the Consolidated Financial Statements after the Effective Date are not comparable with the Consolidated Financial Statements prior to that date. References to "Successor" or "Successor Company" relate to the financial position and results of operations of the Company after the Effective Date. References to "Predecessor" or "Predecessor Company" refer to the financial position and results of operations of the Company on or before the Effective Date. Refer to Note 4 for more information.

2. Summary of Significant Accounting Policies

Principles of Consolidation—The Consolidated Financial Statements include the accounts of the Company and its majority-owned subsidiaries in which minority shareholders hold no substantive participating rights. Intercompany accounts and transactions are eliminated in consolidation. The Company's share of the net earnings of 20% to 50% owned companies, which are accounted for under the equity method of accounting as the Company has the ability to exercise significant influence over operating and financial policies (but not control), are included in "Earnings from unconsolidated entities, net of taxes" in the Consolidated Statements of Operations. Investments in the other companies are carried at cost.

The Company has recorded a noncontrolling interest for the equity interests in consolidated subsidiaries that are not 100% owned.

The Company's unconsolidated investments accounted for under the equity method of accounting include the following as of December 31, 2019:

- 49.99% interest in Momentive UV Coatings (Shanghai) Co., Ltd, a joint venture that manufactures UV-curable coatings and adhesives in China;
- 50% ownership interest in Hexion Shchekinoazot Holding B.V., a joint venture that manufactures forest products resins in Russia;
- 49% ownership interest in Sanwei Hexion Company Limited, a joint venture that manufactures versatic acid derivatives in China;
- 50% ownership interest in Hexion Australia Pty Ltd, a joint venture which provides urea formaldehyde resins and other products to industrial customers in western Australia; and
- 50% ownership interest in MicroBlend Columbia S.A.S, a joint venture that distributes custom point-of-sale paint mixing systems and paint bases to consumer retail stores in Latin America.

Foreign Currency Translations and Transactions—Assets and liabilities of foreign affiliates are translated at the exchange rates in effect at the balance sheet date. Income, expenses and cash flows are translated at average exchange rates during the year. The Company recognized transaction losses of \$5, \$8, \$30 and \$4 for the period July 2, 2019 through December 31, 2019, January 1, 2019 through July 1, 2019 and the years ended December 31, 2018 and 2017, respectively, which are included as a component of "Net (loss) income." In addition, gains or losses related to the Company's intercompany loans payable and receivable denominated in a foreign currency other than the subsidiary's functional currency that are deemed to be permanently invested are remeasured to cumulative translation and recorded in "Accumulated other comprehensive loss" in the Consolidated Balance Sheets. The effect of translation is included in "Accumulated other comprehensive loss."

Use of Estimates—The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America ("U.S. GAAP") requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and also the disclosure of contingent assets and liabilities at the date of the financial statements. In addition, it requires management to make estimates and assumptions that affect the reported amounts of revenues and expenses during the reporting period. The most significant estimates that are included in the financial statements are environmental remediation liabilities, legal liabilities, deferred tax assets and liabilities and related valuation allowances, income tax accruals, pension and postretirement assets and liabilities, reserves for uncollectible accounts receivable, general insurance liabilities, asset impairments, fair values of assets acquired and liabilities assumed in business acquisitions, and valuations associated with fresh start accounting. Actual results could differ from these estimates.

Cash and Cash Equivalents—The Company considers all highly liquid investments that are purchased with an original maturity of three months or less to be cash equivalents. At December 31, 2019 and 2018, the Company had interest-bearing time deposits and other cash equivalent investments of \$74 and \$31, respectively. The Company's restricted cash balances of \$4 and \$15 as of December 31, 2019 and 2018, respectively represent deposits to secure certain bank guarantees issued to third parties to guarantee potential obligations of the Company primarily related to the completion of tax audits. These balances will remain restricted as long as the underlying exposures exist and are included in the Consolidated Balance Sheets as a component of "Cash and cash equivalents."

Allowance for Doubtful Accounts—The allowance for doubtful accounts is estimated using factors such as customer credit ratings and past collection history. Receivables are charged against the allowance for doubtful accounts when it is probable that the receivable will not be collected.

Inventories—Inventories are stated at lower of cost or net realizable value using the first-in, first-out method. Costs include direct material, direct labor and applicable manufacturing overheads, which are based on normal production capacity. Abnormal manufacturing costs are recognized as period costs and fixed manufacturing overheads are allocated based on normal production capacity.

Deferred Expenses—Deferred debt financing costs are included in "Long-term debt" in the Consolidated Balance Sheets, with the exception of deferred financing costs related to revolving line of credit arrangements, which are included in "Other long-term assets" in the Consolidated Balance Sheets. These costs are amortized over the life of the related debt or credit facility using the effective interest method. Upon extinguishment of any debt, the related debt issuance costs are written off.

During the year ended December 31, 2019, in connection with the application of fresh start accounting, any existing debt issuance costs were included in "Reorganization items, net" in the Consolidated Statements of Operations and there were no deferred debt financing costs included in "Long-term debt" in the Consolidated Balance Sheets as of December 31, 2019.

During the year ended December 31, 2018, the Company wrote off unamortized deferred debt financing costs of \$29 included in "Long-term debt" and \$4 included in "Other long-term assets" as a result of the Company's substantial doubt about its ability to continue as a going concern for the next twelve months (see Note 1) and the resulting reclassification of all outstanding debt related to the ABL Facility and the Senior Secured Notes and debentures to "Debt payable within one year" in the Consolidated Balance Sheets (see Note 10). These write-offs are included in "Interest expense, net" in the Consolidated Statements of Operations.

Property and Equipment—Land, buildings and machinery and equipment are stated at cost less accumulated depreciation. Depreciation is recorded on a straight-line basis over the estimated useful lives of properties (the average estimated useful lives for buildings and machinery and equipment were 9 to 39 years and 1 to 20 years, respectively at December 31, 2019 and 20 years and 15 years, respectively at December 31, 2018). Assets under capital leases are amortized over the lesser of their useful life or the lease term. Major renewals and betterments are capitalized. Maintenance, repairs and minor renewals are expensed as incurred. When property and equipment is retired or disposed of, the asset and related depreciation are removed from the accounts and any gain or loss is reflected in operating income. The Company capitalizes interest costs that are incurred during the construction of property and equipment. Property and equipment was recorded at its estimated fair value in connection with the application of fresh start accounting, resulting in the remeasurement of accumulated depreciation to zero as of July 1, 2019 (see Note 4). Depreciation expense was \$82, \$49, \$103 and \$103 for the periods July 2, 2019 through December 31, 2019, January 1, 2019 through July 1, 2019 and for the years ended December 31, 2018 and 2017, respectively. Additionally, for the years ended December 31, 2018 and 2017, \$4, and \$14, respectively, of accelerated depreciation was recorded as a result of shortening the estimated useful lives of certain long-lived assets related to planned facility rationalizations. Lastly, for the periods July 2, 2019 through December 31, 2019, January 1, 2019 through July 1, 2019 and for the years ended December 31, 2018 and 2017, "Capitalized expenditures" in the Consolidated Statements of Cash Flows were decreased by \$12, increased by \$7, increased by \$5 and increased by \$2, respectively, to reflect the change in invoiced but unpaid capital expenditures at each respective year-end as a non-cash investing activity.

Capitalized Software—The Company capitalizes certain costs, such as software coding, installation and testing, that are incurred to purchase or create and implement computer software for internal use. Amortization is recorded on the straight-line basis over the estimated useful lives, which range from 1 to 5 years.

Goodwill and Intangibles—The excess of purchase price over net tangible and identifiable intangible assets of businesses acquired is carried as "Goodwill" in the Consolidated Balance Sheets. Separately identifiable intangible assets that are used in the operations of the business (e.g., patents and technology, tradenames, customer lists and contracts) are recorded at cost (fair value at the time of acquisition) and reported as "Other intangible assets, net" in the Consolidated Balance Sheets. Costs to renew or extend the term of identifiable intangible assets are expensed as incurred. The Company does not amortize goodwill. Intangible assets with determinable lives are amortized on a straight-line basis over the legal or economic life of the assets, which range from 15 to 25 years (see Note 4 and Note 8).

As a result of the application of fresh start accounting the Company established \$178 of Successor goodwill and \$1,219 of Successor intangibles upon emergence. Refer to Note 4 for additional information.

Impairment—The Company reviews property and equipment and all amortizable intangible assets for impairment whenever events or changes in circumstances indicate that the carrying amount of these assets may not be recoverable. Recoverability is based on estimated undiscounted cash flows or other relevant observable measures. The Company tests goodwill for impairment annually, or when events or changes in circumstances indicate impairment may exist, by comparing the estimated fair value of each reporting unit with goodwill to its carrying value to determine if there is an indication that a potential impairment may exist.

Long-Lived Assets and Amortizable Intangible Assets

There were no long-lived asset impairments recorded during the successor period July 2, 2019 through December 31, 2019 or the predecessor period January 1, 2019 through July 1, 2019. During the year ended December 31, 2018, the Company recorded long-lived asset impairments of \$28, which are included in "Asset impairments" in the Consolidated Statements of Operations (see Note 6). There were no long-lived asset impairments recorded during the year ended December 31, 2017.

Goodwill

The Company performs an annual assessment of qualitative factors to determine whether the existence of any events or circumstances leads to a determination that it is more likely than not that the fair value of a reporting unit is less than the carrying amount of the reporting unit's net assets. If, after assessing all events and circumstances, the Company determines it is more likely than not that the fair value of a reporting unit is less than the carrying amount of the reporting unit's net assets, the Company uses a probability weighted market and income approach to estimate the fair value of the reporting unit. The Company's market approach is a comparable analysis technique commonly used in the investment banking and private equity industries based on the EBITDA (earnings before interest, income taxes, depreciation and amortization) multiple technique. Under this technique, estimated fair value is the result of a market-based EBITDA multiple that is applied to an appropriate historical EBITDA amount, adjusted for the additional fair value that would be assigned by a market participant obtaining control over the reporting unit. The Company's income approach is a discounted cash flow model. If the carrying value of the reporting unit exceeds the estimated fair value, an impairment charge is recorded for the difference.

In 2017, the Company lowered its forecast of estimated earnings and cash flows for its oilfield business from those previously projected, and indefinitely idled a manufacturing facility within its oilfield business. This was due to the slower than previously assumed recovery in the oil and gas market. As of September 30, 2017, the estimated fair value of the Company's oilfield reporting unit was less than the carrying value of the net assets of the reporting unit. In estimating the fair value of the oilfield reporting unit, the Company relied solely on a discounted cash flow model income approach. This was due to the Company's belief that the reporting unit's EBITDA, a key input under the market approach, was not representative and consistent with the reporting unit's historical performance and long-term outlook and, therefore, was not consistent with assumptions that a market participant would use in determining the fair value of the reporting unit. When the fair value of the reporting unit was determined, an impairment charge was recognized for the amount by which the carrying amount of oilfield's net assets exceeded its fair value. As such, the entire oilfield reporting unit's goodwill balance of \$13 was impaired during the third quarter of 2017, and the Company recognized a goodwill impairment charge of \$13 in its Epoxy, Phenolic and Coating Resins segment, which is included in "Asset impairments" in the Consolidated Statements of Operations. Significant unobservable inputs in the discounted cash flow analysis included projected long-term future cash flows, projected growth rates and discount rates associated with this reporting unit. Future projected long-term cash flows and growth rates were derived from models based upon forecasts prepared by the Company's management. These projected cash flows were discounted using a rate of 13.5%.

As of October 1, 2019 and 2018, the estimated fair value of each of the Company's remaining reporting units was deemed to be in excess of the carrying amount of assets (including goodwill) and liabilities assigned to each reporting unit. The step up of fixed and intangible asset values during fresh start accounting resulted in an increase of the carrying amounts of net assets for the Company's reporting units that have goodwill, thereby reducing the amount of headroom between the fair value and carrying value of these reporting units. As a result, future unfavorable changes to business results and/or discounted cash flows for these reporting units are more likely to result in asset impairments.

General Insurance—The Company is generally insured for losses and liabilities for workers' compensation, physical damage to property, business interruption and comprehensive general, product and vehicle liability under high-deductible insurance policies. The Company records losses when they are probable and reasonably estimable and amortizes insurance premiums over the life of the respective insurance policies.

Legal Claims and Costs—The Company accrues for legal claims and costs in the period in which a claim is made or an event becomes known, if the amounts are probable and reasonably estimable. Each claim is assigned a range of potential liability and the most likely amount is accrued. If there is no amount in the range of potential liability that is most likely, the low end of the range is accrued. The amount accrued includes all costs associated with the claim, including settlements, assessments, judgments and fines. Legal fees are expensed as incurred (see Note 12).

Environmental Matters—Accruals for environmental matters are recorded when it is probable that a liability has been incurred and the amount of the liability can be reasonably estimated. Environmental accruals are reviewed on a quarterly basis and as events and developments warrant (see Note 12).

Asset Retirement Obligations—Asset retirement obligations are initially recorded at their estimated net present values in the period in which the obligation occurs, with a corresponding increase to the related long-lived asset. Over time, the liability is accreted to its settlement value and the capitalized cost is depreciated over the useful life of the related asset. When the liability is settled, a gain or loss is recognized for any difference between the settlement amount and the liability that was recorded.

Revenue Recognition—The Company follows the principles-based five step model to recognize revenue upon the transfer of promised goods or services to customers and in an amount that reflects the consideration for which the entity expects to be entitled in exchange for those goods or services. Revenue, net of estimated allowances and returns, is recognized when the Company has completed its performance obligations under a contract and control of the product is transferred to the customer. Substantially all revenue is recognized at the time shipment is made or upon delivery as risk and title to the product transfer to the customer. Sales, value add, and other taxes that are collected concurrently with revenue-producing activities are excluded from revenue. Contract terms for certain transactions, including sales made on a consignment basis, result in the transfer of control of the finished product to the customer prior to the point at which the Company has the right to invoice for the product. In these cases, timing of revenue recognition will differ from the timing of invoicing to customers and will result in the Company recording a contract asset. The Company adopted ASU 2014-09 as of January 1, 2018 utilizing a modified retrospective approach. A contract asset balance of \$9 and \$11 is recorded within "Other current assets" at December 31, 2019 and December 31, 2018, respectively, in the Consolidated Balance Sheet. Refer to Note 18 for additional discussion of the Company's net sales by reportable segment disaggregated by geographic region.

Shipping and Handling—Freight costs that are billed to customers are included in "Net sales" in the Consolidated Statements of Operations. Shipping costs are incurred to move the Company's products from production and storage facilities to the customer. Handling costs are incurred from the point the product is removed from inventory until it is provided to the shipper and generally include costs to store, move and prepare the products for shipment. Revenue from shipping and handling services is recognized when control of the product is transferred to the customer. Shipping and handling costs are recorded in "Cost of sales" in the Consolidated Statements of Operations.

Turnaround Costs—The Company periodically performs procedures at its major production facilities to extend the useful life, increase output and efficiency and ensure the long-term reliability and safety of plant machinery ("turnaround" or "turnaround costs"). As a result of the application of fresh start accounting upon the Company's emergence from Chapter 11, the Successor Company adopted an accounting policy to capitalize certain turnaround costs and amortize on a straight-line basis over the estimated period until the next turnaround. Costs for routine repairs and maintenance are expensed as incurred. Capitalized turnaround costs were \$2 at December 31, 2019 and are included in "Machinery and equipment" in the Consolidated Balance Sheets.

Research and Development Costs—Funds are committed to research and development activities for technical improvement of products and processes that are expected to contribute to future earnings. We also provide customer service through our technical staff as part of our research and development program to discover new applications and processes. All costs associated with research and development and technical services are charged to expense as incurred. Research and development and technical service expense was \$25, \$25, \$53 and \$58 for July 2, 2019 through December 31, 2019, January 1, 2019 through July 1, 2019 and for the years ended December 31, 2018 and 2017, respectively, and is included in "Selling, general and administrative expense" in the Consolidated Statements of Operations.

Business Realignment Costs—The Company incurred "Business realignment costs" totaling \$24, \$15, \$29 and \$52 for July 2, 2019 through December 31, 2019, January 1, 2019 through July 1, 2019 and for the years ended December 31, 2018 and 2017, respectively. These costs primarily included costs related to in-process cost reduction programs and certain in-process and recently completed facility rationalizations.

Pension and Other Non-Pension Postretirement Benefit Liabilities—Pension and other non-pension postretirement benefit ("OPEB") assumptions are significant inputs to the actuarial models that measure pension and OPEB benefit obligations and related effects on operations. Two assumptions, discount rate and expected return on assets, are important elements of plan expense and asset/liability measurement. The Company evaluates these critical assumptions at least annually on a plan and country-specific basis. The Company periodically evaluates other assumptions involving demographic factors, such as retirement age, mortality and turnover, and updates them to reflect the Company's experience and expectations for the future. Actual results in any given year will often differ from actuarial assumptions because of economic and other factors.

Accumulated and projected benefit obligations are measured as the present value of future cash payments. The Company discounts these cash payments using a split-rate interest approach. This approach uses multiple interest rates from market-observed forward yield curves which correspond to the estimated timing of the related benefit payments. Lower discount rates increase present values and higher discount rates decrease present values.

To determine the expected long-term rate of return on pension plan assets, the Company considers current and expected asset allocations, as well as historical and expected returns on various categories of plan assets. In developing future return expectations for the principal benefit plans' assets, the Company evaluates general market trends as well as key elements of asset class returns such as expected earnings growth, yields and spreads across a number of potential scenarios.

Upon the Company's annual remeasurement of its pension and OPEB liabilities in the fourth quarter, or on an interim basis as triggering events warrant remeasurement, the Company immediately recognizes gains and losses as a mark-to-market ("MTM") gain or loss through earnings. As such, the Company's net periodic pension and OPEB expense consists of i) service cost, interest cost, expected return on plan assets, amortization of prior service cost/credits recognized on a quarterly basis and ii) MTM adjustments recognized annually in the fourth quarter upon remeasurement of pension and OPEB liabilities or when triggering events warrant remeasurement.

The MTM adjustments were a loss of \$5, gain of \$13 and a gain of \$4 for the period July 2, 2019 through December 31, 2019, and for the years ended December 31, 2018 and 2017, respectively, and are recognized in "Other non-operating (income) expense, net" in the Consolidated Statements of Operations. A MTM loss of \$44 was recorded upon Emergence which was included within "Reorganization items, net" on the Consolidated Statement of Operations for the period January 1, 2019 through July 1, 2019.

Income Taxes—The Company recognizes deferred tax assets and liabilities for the expected future tax consequences of temporary differences between the financial statement carrying amounts and the tax bases of the assets and liabilities.

Deferred tax balances are adjusted to reflect tax rates, based on current tax laws, which will be in effect in the years in which temporary differences are expected to reverse. Deferred tax assets are reduced by a valuation allowance when, in the opinion of management, it is more likely than not that some portion or all of the deferred tax assets will not be realized (see Note 16).

Unrecognized tax benefits are generated when there are differences between tax positions taken in a tax return and amounts recognized in the consolidated financial statements. Tax benefits are recognized in the consolidated financial statements when it is more likely than not that a tax position will be sustained upon examination. Tax benefits are measured as the largest amount of benefit that is greater than 50% likely of being realized upon settlement. The Company classifies interest and penalties as a component of tax expense.

The Company monitors changes in tax laws and reflects the impact of tax law changes in the period of enactment. See Note 16 for additional information on how the Company recorded the impacts of the U.S. tax reform.

Derivative Financial Instruments and Hedging Activities—Periodically, the Company is a party to forward exchange contracts, foreign exchange rate swaps, interest rate swaps, natural gas futures and electricity forward contracts to reduce its cash flow exposure to changes in interest rates and natural gas and electricity prices. The Company does not hold or issue derivative financial instruments for trading purposes. All derivatives, whether designated as hedging relationships or not, are recorded on our balance sheet at fair value. For fair value and cash flow hedges qualifying for hedge accounting, the Company formally documents at inception the relationship between hedging instruments and hedged items, the risk management objective, strategy and the evaluation of effectiveness for the hedge transaction. If the derivative is designated as a cash flow hedge, changes in the fair value of the derivative are recorded in accumulated other comprehensive income, to the extent effective, and will be recognized in the Consolidated Statement of Operations when settled. The effectiveness of a cash flow hedging relationship is established at the inception of the hedge, and after inception the Company performs effectiveness assessments at least every three months. For a derivative that does not qualify or has not been designated as a hedge, changes in fair value are recognized in earnings.

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Stock-Based Compensation—All stock-based compensation activity relates to shares issued by Hexion Holdings, the ultimate parent of the Company. Stock-based compensation cost is measured at the grant date based on the fair value of the award which is amortized as expense over the requisite service period or derived service period on a graded-vesting basis. The expense is recorded net of forfeitures upon occurrence (see Note 14).

Transfers of Financial Assets—The Company executes factoring and sales agreements with respect to its trade accounts receivable to support its working capital requirements. The Company accounts for these transactions as either sales-type or financing-type transfers of financial assets based on the terms and conditions of each agreement. For the portion of the sales price that is deferred in a reserve account and subsequently collected, the Company's policy is to classify the cash in-flows as cash flows from operating activities as the predominant source of the cash flows pertains to the Company's trade accounts receivable. The remaining portion of the sales price not deferred is recognized as cash flows from operating activities. When the Company retains the servicing rights on the transfers of accounts receivable, it measures these rights at fair value, if material.

Concentrations of Credit Risk—Financial instruments that potentially subject the Company to concentrations of credit risk are primarily temporary investments and accounts receivable. The Company places its temporary investments with high quality institutions and, by policy, limits the amount of credit exposure to any one institution. Concentrations of credit risk for accounts receivable are limited due to the large number of customers in the Company's customer base and their dispersion across many different industries and geographies. The Company generally does not require collateral or other security to support customer receivables.

Concentrations of Supplier Risk—The Company relies on long-term agreements with key suppliers for most of its raw materials. The loss of a key source of supply or a delay in shipments could have an adverse effect on its business. Should any of the suppliers fail to deliver or should any of the key long-term supply contracts be canceled, the Company would be forced to purchase raw materials at current market prices. The Company's largest supplier provides approximately 14% of raw material purchases. In addition, several of the feedstocks at various facilities are transported through a pipeline from one supplier.

Subsequent Events—The Company has evaluated events and transactions subsequent to December 31, 2019 through the date of issuance of its Consolidated Financial Statements.

Income Statement Presentation—As a result of the application of fresh start accounting upon the Company's emergence from Chapter 11, the Company elected to change its income statement presentation of depreciation and amortization expense beginning in the Successor period July 2, 2019 through December 31, 2019 and all periods thereafter. As a result, "Depreciation and amortization" has been added as a line item in the Consolidated Statements of Operations and "Cost of sales" and "Selling, general and administrative expense" will now exclude all depreciation and amortization expense. In addition, the Company will no longer present "Gross profit" as a subtotal caption. For comparability purposes, this presentation change will be applied to all comparable periods presented in this Annual Report on Form 10-K and all future filings.

The effects of the income statement presentation change on the Predecessor Company's previously reported audited Consolidated Statements of Operations are presented below. As noted above, a component of this presentation change is removal of the "Gross profit" subtotal.

Unaudited Condensed Consolidated Statements of Operations for the period from January 1, 2019 to July 1, 2019:

	Previous Presentation Method	Effect of Presentation Change	As Reported
Cost of sales	\$ 1,507	\$ (45)	\$ 1,462
Selling, general and administrative expense	152	(7)	145
Depreciation and amortization	—	52	52

Consolidated Statements of Operations for the year ended December 31, 2018:

	As Previously Reported	Effect of Presentation Change	As Reported
Cost of sales	\$ 3,226	\$ (99)	\$ 3,127
Selling, general and administrative expense	295	(18)	277
Depreciation and amortization	—	117	117

Consolidated Statements of Operations for the year ended December 31, 2017:

	As Previously Reported	Effect of Presentation Change	As Reported
Cost of sales	\$ 3,088	\$ (109)	\$ 2,979
Selling, general and administrative expense	321	(20)	301
Depreciation and amortization	—	129	129

Reclassifications—Certain prior period balances have been reclassified to conform with current presentations.

Standard Guarantees / Indemnifications—In the ordinary course of business, the Company enters into a number of agreements that contain standard guarantees and indemnities where the Company may indemnify another party for, among other things, breaches of representations and warranties. These guarantees or indemnifications are granted under various agreements, including those governing (i) purchases and sales of assets or businesses, (ii) leases of real property, (iii) licenses of intellectual property, (iv) long-term supply agreements, (v) employee benefits services agreements and (vi) agreements with public authorities on subsidies for designated research and development projects. These guarantees or indemnifications are for the benefit of the (i) buyers in sale agreements and sellers in purchase agreements, (ii) landlords or lessors in lease contracts, (iii) licensors or licensees in license agreements, (iv) vendors or customers in long-term supply agreements, (v) service providers in employee benefits services agreements and (vi) governments or agencies subsidizing research or development. In addition, the Company guarantees some of the payables of its subsidiaries to purchase raw materials in the ordinary course of business.

These parties may also be indemnified against any third party claim resulting from the transaction that is contemplated in the underlying agreement. Additionally, in connection with the sale of assets and the divestiture of businesses, the Company may agree to indemnify the buyer for liabilities related to the pre-closing operations of the assets or businesses sold. Indemnities for pre-closing operations generally include tax liabilities, environmental liabilities and employee benefit liabilities that are not assumed by the buyer in the transaction.

Indemnities related to the pre-closing operations of sold assets normally do not represent additional liabilities to the Company, but simply serve to protect the buyer from potential liability associated with the Company's existing obligations at the time of sale. As with any liability, the Company has accrued for those pre-closing obligations that it considers to be probable and reasonably estimable. The amounts recorded at December 31, 2019 and 2018 are not material.

While some of these guarantees extend only for the duration of the underlying agreement, many survive the expiration of the term of the agreement or extend into perpetuity (unless they are subject to a legal statute of limitations). There are no specific limitations on the maximum potential amount of future payments that the Company could be required to make under its guarantees, nor is the Company able to estimate the maximum potential amount of future payments to be made under these guarantees because the triggering events are not predictable.

Our corporate charter also requires us to indemnify, to the extent allowed by New Jersey state corporate law, our directors and officers as well as directors and officers of our subsidiaries and other agents against certain liabilities and expenses incurred by them in carrying out their obligations.

Warranties—The Company does not make express warranties on its products, other than that they comply with the Company's specifications; therefore, the Company does not record a warranty liability. Adjustments for product quality claims are not material and are charged against net sales.

Recently Issued Accounting Standards

Newly Adopted Accounting Standards

In February 2016, the FASB issued Accounting Standards Board Update No. 2016-02: *Leases (Topic 842)* ("ASU 2016-02"). ASU 2016-02 supersedes the existing lease guidance in Topic 840. According to the new guidance, all leases, with limited scope exceptions, will be recorded on the balance sheet in the form of a liability to make lease payments (lease liability) and a right-of-use asset representing the right to use the underlying asset for the lease term. The guidance was effective for annual and interim periods beginning on or after December 15, 2018.

The Company adopted ASU 2016-02 using a modified retrospective adoption method at January 1, 2019. Under this method of adoption, there is no impact to the comparative Consolidated Statement of Operations and the Consolidated Balance Sheets. The Company also determined that there was no cumulative-effect adjustment to beginning retained earnings on the Consolidated Balance Sheet. The Company will continue to report periods prior to January 1, 2019 in its financial statements under prior guidance as outlined in Accounting Standards Codification Topic 840, "Leases". In addition, the Company elected the package of practical expedients permitted under the transition guidance within the new standard, which allowed the Company to carry forward its historical lease classification. The Company also elected the hindsight practical expedient to determine the lease term for existing leases. Adoption of the new standard resulted in the recording of right of use assets and offsetting lease liabilities of \$105 as of January 1, 2019.

In February 2018, the FASB issued Accounting Standards Board Update No. 2018-02: *Income Statement-Reporting Comprehensive Income (Topic 220)* ("ASU 2018-02"). ASU 2018-02 was issued in response to the United States tax reform legislation, the Tax Cuts and Jobs Act ("Tax Reform"), enacted in December 2017. The amendments in ASU 2018-02 allow a reclassification from accumulated other comprehensive income to retained earnings for stranded tax effects resulting from the new tax legislation. The guidance is effective for annual and interim periods beginning on or after December 15, 2018, and early adoption is permitted. The Company adopted ASU 2018-02 as of January 1, 2019 and it did not have a material impact on the financial statements.

In August 2017, the FASB issued Accounting Standards Board Update No. 2017-12: *Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities* ("ASU 2017-12"). The amendments in this ASU 2017-12 better align an entity's risk management activities and financial reporting for hedging relationships through changes to both the designation and measurement guidance for qualifying hedging relationships as well as the recognition and presentation of the effects of the hedging instrument and the hedged item in the financial statements to increase the understandability of the results of an entity's intended hedging strategies. The amendments in ASU 2017-12 also include certain targeted improvements to ease the application of current guidance related to the assessment of hedge effectiveness. The amendments in ASU 2017-12 are effective for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years. The Company adopted ASU 2017-12 as of January 1, 2019, and the initial adoption had no impact on the Company's financial statements.

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In October 2018, the FASB issued ASU 2018-16: Derivatives and Hedging (Topic 815): *Inclusion of the Secured Overnight Financing Rate (SOFR) Overnight Index Swap (OIS) Rate as a Benchmark Interest Rate for Hedge Accounting Purposes* ("ASU 2018-16"). ASU 2018-16 permits the use of the Overnight Index Swap ("OIS") based on the Secured Overnight Financing Rate ("SOFR") as a U.S. benchmark interest rate for hedge accounting purposes under Topic 815 in addition to the interest rates on direct Treasury obligations of the U.S. government ("UST"), the London Interbank Offered Rate ("LIBOR") swap rate, the OIS rate based on the Fed Funds Effective Rate, and the Securities Industry and Financial Markets Association ("SIFMA") Municipal Swap Rate. The amendments in this ASU 2018-16 update permit the OIS rate based on SOFR as a U.S. benchmark interest rate. Including the OIS rate based on SOFR as an eligible benchmark interest rate during the early stages of the marketplace transition will facilitate the LIBOR to SOFR transition and provide sufficient lead time for entities to prepare for changes to interest rate risk hedging strategies for both risk management and hedge accounting purposes. For entities that have not already adopted Update 2017-12, the amendments in this Update are required to be adopted concurrently with the amendments in ASU 2017-12. The Company has adopted ASU 2018-16 as of January 1, 2019 and it did not have a material impact on the financial statements.

Recently Issued Accounting Standards

In June 2016, the FASB issued ASU 2016-13: Financial Instruments - Credit Losses (Topic 820): *Measurement of Credit Losses on Financial Instruments*, ("ASU 2016-13"). The amendments in this update replace the incurred loss impairment methodology in current GAAP with a methodology that reflects expected credit losses and requires consideration of a broader range of reasonable and supportable information to inform credit loss estimates. New disclosures are also required with this standard. The standard is effective for annual and interim periods beginning after December 15, 2019. The Company will adopt ASU 2016-13 as of January 1, 2020 and the Company does not expect the adoption to have a material impact on the financial statements.

In August 2018, the FASB issued ASU 2018-15: Intangibles - Goodwill and Other - Internal-Use Software (Subtopic 350-40): *Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That is a Service Contract* ("ASU 2018-15"). ASU 2018-15 aligns the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software. The standard is effective for annual and interim periods beginning after December 15, 2019. The Company will adopt ASU 2016-13 as of January 1, 2020 and the Company does not expect the adoption to have a material impact on the financial statements.

3. Emergence from Chapter 11 Bankruptcy

Bankruptcy Petitions and Emergence from Chapter 11

On the Petition Date, the Company, Hexion Holdings LLC, Hexion LLC and certain of the Company's subsidiaries (collectively, the "Debtors") filed voluntary petitions (the "Bankruptcy Petitions") for reorganization under Chapter 11 ("Chapter 11") of the U.S. Bankruptcy Code (the "Bankruptcy Code") in the United States Bankruptcy Court for the District of Delaware, (the "Bankruptcy Court"). The Chapter 11 proceedings were jointly administered under the caption *In re Hexion TopCo, LLC, No. 19-10684* (the "Chapter 11 Cases"). The Debtors continued to operate their businesses as "debtors-in-possession" under the jurisdiction of the Bankruptcy Court and in accordance with the applicable provisions of the Bankruptcy Code and orders of the Bankruptcy Court.

On June 25, 2019, the Court entered an order (the "Confirmation Order") confirming the Second Amended Joint Chapter 11 Plan of Reorganization of Hexion Holdings LLC and its Debtor Affiliates under Chapter 11 (the "Plan"). On the morning of July 1, 2019, in accordance with the terms of the Plan and the Confirmation Order, the Plan became effective and the Debtors emerged from bankruptcy (the "Emergence").

Debtor-in-Possession Financing

DIP Term Loan Facility

In connection with the filing of the Bankruptcy Petitions, on April 3, 2019, the Company entered into a New York law-governed senior secured term loan agreement (the "DIP Term Loan Facility"), among Hexion LLC ("Holdings"), the Company, Hexion International Holdings B.V. (the "Dutch Borrower"), which was amended on April 17, 2019, the lenders party thereto and JPMorgan Chase Bank, N.A. ("JPMorgan"), as administrative agent and collateral agent (the "Term Loan Agent"). The proceeds of the DIP Term Loan Facility were loaned by the Dutch Borrower to the Company pursuant to an intercompany loan agreement (the "Intercompany Loan Agreement") and were used in part to repay in full the outstanding obligations under the Company's existing asset-based revolving credit agreement ABL Facility (the "Predecessor ABL Facility"). As of June 30, 2019, the Company had \$350 borrowings outstanding under DIP Term Loan Facility. The Company's remaining obligations under the DIP Term Loan Facility were repaid in full and the DIP Term Loan Facility was terminated upon consummation of the Plan by the Company on July 1, 2019.

DIP ABL Facility

In connection with the filing of the Bankruptcy Petitions, on April 3, 2019, Holdings, the Company and certain of its subsidiaries (collectively, the "Borrowers"), the lenders party thereto, JPMorgan, as administrative agent, and JPMorgan, as collateral agent (the "DIP ABL Collateral Agent" and together with the DIP Term Loan Facility, the "Credit Facilities"), entered into an amended and restated senior secured debtor-in-possession asset-based revolving credit agreement, which was further amended on May 10, 2019 (the "DIP ABL Facility"), which amended and restated the Company's Predecessor ABL Facility among Holdings, the Company, the Borrowers, the lenders party thereto, JPMorgan, as administrative agent, and JPMorgan, as collateral agent. As of June 30, 2019, the Company had no outstanding borrowings under the DIP ABL Facility and the DIP ABL Facility was terminated upon consummation of the Plan by the Company on July 1, 2019.

Restructuring Support Agreement

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On April 1, 2019, the Debtors entered into a Restructuring Support Agreement (the "Support Agreement") with equityholders that beneficially owned more than a majority of the Company's outstanding equity (the "Consenting Sponsors") and creditors that held more than a majority of the aggregate outstanding principal amount of each of the Company's 6.625% Notes and 10.00% Notes, (the "1L Notes"), 13.750% 1.5 lien notes due 2022 (the "1.5L Notes"), 9.00% second lien notes due 2020 (the "2L Notes"), 9.20% Debentures due 2021 and/or 7.875% Debentures due 2023 issued by Borden, Inc. (the "Unsecured Notes") (the "Consenting Creditors" and, together with the Consenting Sponsors, the "Consenting Parties"). The Support Agreement incorporated the economic terms regarding a restructuring of the Debtors agreed to by the parties reflected in the Support Agreement. The restructuring transactions were effectuated through the Plan.

Equity Backstop Agreement and Rights Offering

On April 25, 2019, the Debtors entered into the Equity Backstop Commitment Agreement, as subsequently amended (the "Equity Backstop"), among the Debtors and the equity backstop parties party thereto (the "Equity Backstop Parties"). The Equity Backstop provides that upon the satisfaction of certain terms and conditions, including the confirmation of the Plan, the Company will have the option to require the Equity Backstop Parties to backstop the common stock of the reorganized Company (the "New Common Stock") that is not otherwise purchased in connection with the \$300 rights offerings for New Common Stock of Hexion Holdings (the "Rights Offering") to be made in connection with the Plan (the "Unsubscribed Shares") on a several, and not joint and several, basis. In consideration for their commitment to purchase the Unsubscribed Shares, the Equity Backstop Parties will be paid a Premium of 8% of the Rights Offering Amount (the "Equity Backstop Premium"), which premium was earned in full upon entry of the Equity Backstop Approval Order and which is payable either in Cash or in New Common Equity at the option of each Equity Backstop Party. Pursuant to the terms of the Equity Backstop, the Equity Backstop Premium was deemed earned, nonrefundable and non-avoidable upon entry of the approval order by the Court. The Company incurred \$24 for the Equity Backstop Premium, which is included in "Reorganization items, net" in the Consolidated Statements of Operations. The Company paid the Equity Backstop Premium on the Effective Date in accordance with the Plan.

Debt Backstop Agreement

On April 25, 2019, the Debtors entered into the Debt Backstop Commitment Agreement, as subsequently amended (the "Debt Backstop"), among the Debtors and the debt backstop parties party thereto (the "Debt Backstop Parties"). The Debt Backstop provides that upon satisfaction of certain terms and conditions, including the confirmation of the Plan, the Debt Backstop Parties will backstop the New Long-Term Debt on a several, and not joint and several, basis of an amount equal to such Debt Backstop Party's commitment percentage, in exchange for (a) the Debt Backstop Premium of 3.375% of the backstop commitments thereunder payable either in Cash or in New Common Equity at the option of each Debt Backstop Party and (b) for certain Debt Backstop Parties, the Additional Debt Backstop Premium of 1.5% of the backstop commitments thereunder payable in Cash, both of which premiums (described in (a) and (b)) were earned in full upon entry of the Debt Backstop Approval Order. Pursuant to the terms of the Debt Backstop, the Backstop Commitment Premium was deemed earned, nonrefundable and non-avoidable upon entry of the approval order by the Court. The Company incurred \$80 for the Backstop Commitment Premium, which is included in "Reorganization items, net" in the Consolidated Statements of Operations. The Company paid the Debt Backstop Premium on the Effective Date in accordance with the Plan.

Pre-Petition Claims

On June 7, 2019, the Debtors filed schedules of assets and liabilities and statements of financial affairs with the Court, which were amended on June 14, 2019. Prior to the Company's emergence from Chapter 11 bankruptcy on the Effective Date, all pre-petition amounts were classified as "Liabilities subject to compromise" in the Consolidated Balance Sheets as of June 30, 2019 and have either been settled or reinstated pursuant to the terms of the Plan. See Note 4 for more information.

The Debt Instruments provide that as a result of the Bankruptcy Petitions the principal and interest due thereunder shall be immediately due and payable. Any efforts to enforce such payment obligations under the Debt Instruments are automatically stayed as a result of the Bankruptcy Petitions and the creditors' rights of enforcement in respect of the Debt Instruments are subject to the applicable provisions of the Bankruptcy Code. Upon Emergence on July 1, 2019, these automatic stay provisions are no longer in effect.

Emergence from Chapter 11 Bankruptcy

On July 1, 2019, the Plan became effective and the Debtors emerged from the Chapter 11 proceedings.

On or following the Effective Date, and pursuant to the terms of the Plan, the following occurred:

- The restructuring of the Debtors' pre-petition funded debt obligations with the proceeds of \$1,658 in new long-term debt ("New Long-term Debt") (see Note 10);
- A \$300 Rights Offering for new common equity of Hexion Holdings;
- A percentage of the Rights Offering was issued in the form of warrants ("New Warrants"), these warrants represented 15% of the Rights Offering which are exercisable for shares of Common Stock, issued by Hexion Holdings under the Plan, and referred to as New Warrants under the Plan (together with New Common Stock, "Registrable Securities");
- Certain of the Debtors entered into the \$350 ABL Facility (the "ABL Facility") (see Note 10);
- General unsecured claims being paid in full or otherwise continuing unimpaired;
- Holders of claims with respect to the 1L Notes received their pro rata share of (a) cash in the amount of \$1.450 billion (less the sum of adequate protection payments paid on account of the 1L Notes during the Chapter 11 cases), (b) 72.5% of new common equity of Hexion Holdings ("New Common Equity") (subject to the Agreed Dilution), and (c) 72.5% of the rights to purchase additional New Common Equity pursuant to the Rights Offering. The dilution of the New Common Equity ("the Agreed Dilution") resulted from the Rights Offering and the Management Incentive Plan, as defined in the Plan. 10% of the fully-diluted equity of Hexion Holdings is to be reserved for grant to key members of management and independent, non-employee members of the Board of Directors, (see Note 14 for further details on the Management Incentive Plan);
- Holders of claims with respect to the 1.5L Notes, 2L Notes, and Unsecured Notes received their pro rata share of (a) 27.5% of the New Common Equity (subject to the Agreed Dilution) and (b) 27.5% of the rights to purchase additional New Common Equity pursuant to the Rights Offering;
- Holders of equity interests (i.e., any class of equity securities) in TopCo received no distributions and all such Equity Interests being cancelled;
- Reorganized Hexion issuing a \$2.5 settlement note to the Consenting Sponsors; and
- Appointment of a new board of directors.

Cancellation of Prior Common Stock

In accordance with the Plan, each share of the Predecessor Company's common stock outstanding prior to the Effective Date, including treasury stock, was canceled. Furthermore, all of the Company's equity award agreements under prior incentive plans, and the awards granted pursuant thereto, were extinguished, canceled and discharged and have no further force or effect after the Effective Date. On the Effective Date, 100 new shares of common stock were issued at a par value of \$0.01 to the Company's new direct parent Hexion Intermediate in accordance with the Plan.

Issuance of New Common Stock

On the Effective Date, all previously issued and outstanding equity interests in TopCo were cancelled. Upon effectiveness of the Plan, Hexion Holdings issued 58,410,731 shares of a new class of common stock, par value \$0.01 per share ("New Common Stock"), pursuant to the Rights Offering. The shares of New Common Stock were exempt from registration under the Securities Act of 1933, as amended (the "Securities Act"), pursuant to Section 1145 of the Bankruptcy Code, which generally exempts from such registration requirements the issuance of securities under a plan of reorganization.

New Warrant Agreement

In addition, Hexion Holdings entered into a warrant agreement (the "Warrant Agreement") and upon effectiveness of the Plan, Hexion Holdings issued 10,307,778 New Warrants as a part of the Rights Offering on the Effective Date. The New Warrants represented 15% of the Rights Offering which are exercisable to purchase shares of New Common Stock. These New Warrants may be exercised, at any time on or after the initial exercise date for exercise price per share of the New Common Stock of \$0.01. The Warrant Agreement contains customary anti-dilution adjustments in the event of any stock split, reverse stock split, reclassification, stock dividend or other distributions.

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The holder or group of holders (the "Attribution Parties") of New Warrants shall be permitted to exercise these New Warrants, at any time, in part or in whole, in amounts sufficient for the holder and Attribution Parties to maintain in the aggregate no less than the beneficial ownership limitation of 9.9% of the fully diluted shares outstanding. Fully diluted shares outstanding is calculated as (x) the aggregate number of shares of New Common Stock issued and outstanding plus (y) the aggregate number of shares of common stock issuable upon the conversion of any other issued and outstanding securities or rights convertible into, or exchangeable for (in each case, directly or indirectly), common stock (excluding, for the avoidance of doubt, any unexercised warrants or options to purchase common stock).

The New Warrants do not entitle the holder or group of holders of the New Warrants to any voting rights, dividends or other rights as a stockholder of the Company prior to exercise of the held New Warrants. If any shares of common stock are listed on a trading market, Hexion Holdings shall use its reasonable best efforts to cause the New Warrants shares issued upon exercise of these New Warrants to also be listed on such trading market, in accordance with the Warrant Agreement.

Registration Rights Agreement

On the Effective Date, Hexion Holdings entered into a registration rights agreement with certain of its stockholders (the "Registration Rights Agreement").

Under the Registration Rights Agreement, upon delivery of a written notice by one or more stockholders holding, individually or in the aggregate, at least a majority of the outstanding Registrable Securities and New Warrants, voting together (as if such New Warrants had been exercised), Hexion Holdings is required to file a registration statement and effect an initial public offering and listing of its common stock, so long as the total offering size is at least \$100 (a "Qualified IPO").

Hexion Holdings is also required to file a registration statement at any time following 180 days after the closing of a Qualified IPO upon the delivery of a written notice by one or more stockholders proposing to sell, individually or in the aggregate, at least \$50 of Registrable Securities. In addition, under the Registration Rights Agreement, Hexion Holdings is required to file a shelf registration statement as soon as practicable following the closing of a Qualified IPO to register the resale, on a delayed or continuous basis, of all Registrable Securities that have been timely designated for inclusion by the holders (specified in the Registration Rights Agreement). Any individual holder or holders of our outstanding common stock party thereto can demand up to four "shelf takedowns" in any 12-month period which may be conducted in underwritten offerings so long as the total offering size is at least \$50. Furthermore, each stockholder party to the Registration Rights Agreement has unlimited piggyback registration rights with respect to underwritten offerings, subject to certain exceptions and limitations.

The foregoing registration rights are subject to certain cutback provisions and customary suspension/blackout provisions. Hexion Holdings has agreed to pay all registration expenses under the Registration Rights Agreement.

Generally, "Registrable Securities" under the Registration Rights Agreement includes New Common Equity issued under the Plan, except that "Registrable Securities" does not include securities that have been sold under an effective registration statement or Rule 144 under the Securities Act.

4. Fresh Start Accounting

Upon emergence from bankruptcy, the Company applied fresh start accounting, in accordance with ASC 852, to its financial statements because (i) the holders of existing voting shares of the Predecessor Company prior to its emergence received less than 50% of the voting shares of the Successor Company outstanding following its emergence from bankruptcy and (ii) the reorganization value of the Company's assets immediately prior to confirmation of the plan of reorganization was less than the post-petition liabilities and allowed claims. Fresh start accounting was applied to the Company's consolidated financial statements upon Emergence.

Under the principles of fresh start accounting, a new reporting entity was created, and, as a result, the Company allocated the reorganization value of the Company to its individual assets based on their estimated fair values in conformity with ASC 805, "Business Combinations". Reorganization value represents the fair value of the Successor Company's assets before considering liabilities. The excess reorganization value over the fair value of identified tangible and intangible assets was reported as goodwill. As a result of the application of fresh start accounting and the effects of the implementation of the Plan of Reorganization, the consolidated financial statements after the Effective Date are not comparable with the consolidated financial statements as of or prior to that date.

Reorganization Value

As set forth in the Plan of Reorganization and the Disclosure Statement filed with the Bankruptcy Court, the enterprise value of the Successor Company was estimated to be between \$2,900 and \$3,300 as of the Effective Date. Based on the estimates and assumptions discussed below, the Company estimated the enterprise value to be \$3,100 for financial reporting purposes, which is the mid-point of the range of enterprise value per the Plan of Reorganization.

The Company estimated the enterprise value of the Successor Company utilizing three valuation methods: a comparable public company analysis, a selected precedent transactions analysis, and a discounted cash flow ("DCF") method. The comparable public company analysis is based on the enterprise values of selected publicly traded diversified chemical companies with operating and financial characteristics comparable to the Company. Under this methodology, certain financial multiples that measure financial performance and value are calculated for each selected company and then applied to imply an estimated enterprise value of the Company.

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The selected precedent transaction analysis is based on the implied enterprise values of companies and assets involved in publicly disclosed merger and acquisition transactions which the targets had operating and financial characteristics comparable to certain respects of the Company. Under this methodology, a multiple is derived using the enterprise value of each such target, calculated as the consideration paid and the net debt assumed in the merger or acquisition transaction relative to a financial metric, in this case, EBITDA (earnings before interest, income taxes, depreciation and amortization) for the Company, for the last twelve month period which financial results have been publicly announced. Utilizing these multiples a reference range was created to imply an estimated enterprise value range.

The DCF analysis is a forward-looking enterprise valuation methodology that estimates fair value by calculating the present value of expected future cash flows to be generated plus a present value of the estimated terminal value. The Company established a five year estimate of future cash flows based on the financial projections and assumptions utilized in the Company's disclosure statement, which were derived from earnings forecasts and assumptions regarding growth and margin projections. A terminal value was included, and was calculated using the constant growth method based on the projected cash flows of the final year of the forecast period. While the Company considers such estimates and assumptions reasonable, they are inherently subject to significant business, economic and competitive uncertainties, many of which are beyond the Company's control and, therefore, may not be realized. Changes in these estimates and assumptions may have a significant effect on the determination of the Company's enterprise value. The assumptions used in the calculations for the DCF analysis included projected revenue, cost and cash flows representing the Company's best estimates at the time the analysis was prepared. The DCF analysis has various complex considerations and judgments, including the discount rate and all of the other projections, etc. Due to the unobservable inputs to the valuation, the fair value would be considered Level 3 in the fair value hierarchy.

The estimated enterprise value is not necessarily indicative of the actual value and the financial results; changes in the economy or the financial markets could result in a different enterprise value. The calculated enterprise value relies on all three of the methodologies listed above collectively. The actual value of the business is subject to certain uncertainties and contingencies that are difficult to predict and will fluctuate with changes in various factors affecting the financial conditions and prospects of such a business.

The discount rate for each reporting unit was estimated based on an after-tax weighted average cost of capital ("WACC") reflecting the rate of return that would be expected by a market participant and ranged between approximately 11% and 19%. The WACC also takes into consideration a company-specific risk premium, reflecting the risk associated with the overall uncertainty of the financial projections used to estimate future cash flows.

The fair value of debt obligations represents \$97 of debt payable within one year and \$1,733 of long-term debt. The fair value of long-term debt was determined based on a market approach utilizing current market yields and was estimated to be approximately 100% of par value.

The fair value of pension liabilities of \$239 was determined based upon assumptions related to discount rates and expected return on assets, as well as certain other assumptions related to various demographic factors.

The following table reconciles the enterprise value to the estimated reorganization value as of the Effective Date:

Enterprise value	\$	3,100
Plus: Total cash		125
Plus: Fair value of non-debt and non-pension liabilities		
Current liabilities		540
Long-term liabilities		527
Total non-debt and non-pension liabilities		1,067
Reorganization value of Successor assets	\$	4,292

The fair value of non-debt and non-pension liabilities represents the total liabilities, less debt payable within one year, long-term debt and pension obligations, of the Successor Company as of the Effective Date.

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Condensed Consolidated Statement of Financial Position

The following balance sheet illustrates the impacts of the implementation of the Plan and the application of fresh start accounting, which results in the opening balance sheet of the Successor Company.

As of July 1, 2019 (in millions, except share data)	Predecessor Company	Reorganization Adjustments ^(a)	Fresh Start Adjustments ^(q)	Successor Company
Assets				
Current assets:				
Cash and cash equivalents (including restricted cash of \$15)	\$ 96	\$ 29	(b) \$ —	\$ 125
Accounts receivable (net of allowance for doubtful accounts of \$16 and \$0, respectively)	499	—	6 (r)	505
Inventories:				
Finished and in-process goods	242	—	29 (s)	271
Raw materials and supplies	109	—	—	109
Other current assets	69	2 (c)	—	71
Total current assets	1,015	31	35	1,081
Investment in unconsolidated entities	20	—	(3) (t)	17
Deferred tax assets	—	12 (d)	(4) (u)	8
Other long-term assets	42	4 (e)	2 (v)	48
Property and equipment:				
Land	90	—	23 (w)	113
Buildings	287	—	(119) (w)	168
Machinery and equipment	2,320	—	(994) (w)	1,326
	2,697	—	(1,090)	1,607
Less accumulated depreciation	(1,870)	—	1,870 (w)	—
	827	—	780	1,607
Operating lease assets	95	—	39 (x)	134
Goodwill	108	—	70 (y)	178
Other intangible assets, net	24	—	1,195 (z)	1,219
Total assets	\$ 2,131	\$ 47	\$ 2,114	\$ 4,292
Liabilities and Deficit				
Current liabilities:				
Accounts payable	\$ 293	\$ 56	(a) \$ —	\$ 349
Debt payable within one year	438	(343) (f)	2 (aa)	97
Interest payable	7	(5) (g)	—	2
Income taxes payable	6	11 (h)	—	17
Accrued payroll and incentive compensation	38	—	—	38
Current portion of operating lease liabilities	21	—	7 (x)	28
Financing fees payable	104	(104) (i)	—	—
Other current liabilities	106	5 (j)	—	111
Total current liabilities	1,013	(380)	9	642
Long-term liabilities:				
Liabilities subject to compromise	3,672	(3,672) (k)	—	—
Long-term debt	90	1,622 (l)	21 (aa)	1,733
Long-term pension and post employment benefit obligations	184	33 (a)	44 (ab)	261
Deferred income taxes	15	1 (m)	163 (ac)	179
Operating lease liabilities	74	—	17 (x)	91
Other long-term liabilities	164	72 (n)	(6) (r)	230
Total liabilities	5,212	(2,324)	248	3,136
Equity (Deficit)				
Common stock (Successor)	—	— (o)	—	—
Paid-in capital (Successor)	—	1,157 (o)	—	1,157
Common stock (Predecessor)	1	(1) (p)	—	—
Paid-in capital (Predecessor)	526	(526) (p)	—	—
Treasury stock (Predecessor), at cost—88,049,059 shares at December 31, 2018	(296)	296 (p)	—	—
Accumulated other comprehensive loss	(26)	—	26 (ad)	—
Accumulated deficit	(3,285)	1,445 (p)	1,840 (ad)	—
Total Hexion Inc. equity (deficit)	(3,080)	2,371	1,866	1,157
Noncontrolling interest	(1)	—	—	(1)

Total equity (deficit)	<u>(3,081)</u>	<u>2,371</u>	(o)	<u>1,866</u>	<u>1,156</u>
Total liabilities and equity (deficit)	<u>\$ 2,131</u>	<u>\$ 47</u>		<u>\$ 2,114</u>	<u>\$ 4,292</u>

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Reorganization Adjustments

- (a) The reorganization adjustments column reflects adjustments related to the consummation of the Plan, including the settlement of liabilities subject to compromise and related payments, other distributions of cash, issuance of new shares of common stock and the cancellation of the common equity of the Predecessor Company, as discussed in Note 3.

The following is a calculation of the total pre-tax gain on the settlement of the liabilities subject to compromise:

Liabilities subject to compromise ("LSTC") (see (k) below)	\$	3,672
Repayment of 1st Lien Notes		(1,383)
Liabilities reinstated at emergence:		
Accounts payable		(56)
Pension and other post employment benefit obligations		(33)
Other current liabilities		(19)
Other long-term liabilities		(32)
Total liabilities reinstated at emergence		(140)
Fair value of equity issued in exchange for debt:		
Fair value of equity		(1,156)
Less: Proceeds from Rights Offering		300
Total fair value of equity issued in exchange for debt		(856)
Gain on settlement of LSTC	\$	1,293

- (b) Reflects the net cash received as of the Effective Date from implementation of the Plan:

Sources:		
Proceeds from the Rights Offerings	\$	300
Proceeds from the Senior Notes		450
Proceeds from the Senior Secured Term Loan		1,196
Release of utility deposit		1
Total sources		1,947
Uses:		
Repayment of 1st Lien Notes		(1,383)
Repayment of DIP Term Loan Facility		(350)
Repayment of DIP Term Loan interest		(5)
Debt and Equity Backstop premiums		(104)
Financing fees		(19)
Success fees at emergence		(31)
Other professional fees		(26)
Total uses		(1,918)
Net cash received	\$	29

- (c) Represents \$3 of excess professional fees due to the Company offset by \$1 for the settlement of certain amounts owed during reorganization.
- (d) Reflects the adjustment to release the valuation allowance on deferred tax assets for certain non-U.S. subsidiaries which management believes more likely than not will be realized as a result of reorganization.
- (e) Reflects the adjustments to capitalize the ABL Facility financing fees incurred upon Emergence.
- (f) Reflects the adjustments made on the Effective Date to repay \$350 in outstanding DIP Term Loans and to incur \$7 for the current portion of the new Senior Secured Term Loan (see Note 10).
- (g) On the Effective Date, the Company repaid \$5 of accrued unpaid interest on the DIP Term Loan Facility.
- (h) Reflects the adjustment to record income taxes payable as a result of reorganization.
- (i) On the Effective Date, the Company paid \$24 of Equity Backstop premiums to the parties participating in the Rights Offering and \$80 of Debt Backstop premiums. See Note 3 for more information.

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- (j) Represents \$19 of other current liabilities that were reclassified from "Liabilities subject to compromise" and \$12 of other current liabilities incurred as a result of emergence offset by \$26 of professional fees paid at emergence.
- (k) Liabilities subject to compromise represent unsecured liabilities incurred prior to the Petition Date. As a result of the Bankruptcy Petitions, actions to enforce or otherwise effect payment of pre-petition liabilities were generally stayed. These liabilities represent the amounts which have been allowed on known claims which were resolved through the Chapter 11 process, and have been approved by the Court as a result of the Confirmation Order.

The following table summarizes pre-petition liabilities that are classified as "Liabilities subject to compromise" in the unaudited Condensed Consolidated Balance Sheets:

	June 30, 2019
Debt	\$ 3,420
Interest payable	99
Accounts payable	56
Environmental reserve	43
Pension and other post employment benefit obligations	33
Dividends payable to parent	13
Other	8
Total	\$ 3,672

- (l) Represents the issuance of the new Senior Term Loan due 2026 of \$1,208 and the new Senior Secured Notes due 2027 of \$450 offset by \$12 of debt discounts and \$17 of debt issuance costs of which \$7 is classified as "Debt due within one year" on the Condensed Consolidated Balance Sheets. The term loan and notes were recorded at estimated fair value, which was determined based on a market approach utilizing current yield.
- (m) Represents deferred tax activity associated with Emergence.
- (n) Reflects the adjustments made to reclassify \$32 of other long-term liabilities from "Liabilities subject to compromise" and to record \$40 of tax liability as a result of Emergence.
- (o) The following table reconciles the enterprise value to the estimated fair value of the Successor equity as of the Emergence Date:

Enterprise value	\$ 3,100
Plus: Total cash	125
Less: Fair value of new debt	(1,646)
Less: Fair value of remaining debt obligations	(184)
Less: Pension obligations	(239)
Fair value of equity	1,156
Plus: Fair value of noncontrolling interest	1
Fair value of Successor paid-in capital	\$ 1,157

At the Effective Date, 100 shares of Common Stock of Hexion Inc. held by new direct parent Hexion Intermediate were issued and outstanding at a par value of \$0.01 per share.

- (p) Reflects the cumulative impact of the reorganization adjustments discussed above:

Gain on settlement of LSTC	\$ 1,293
Success and other fees recognized at emergence	(39)
Net gain on reorganization adjustments ⁽¹⁾	1,254
Tax impact on reorganization adjustments	(40)
Cancellation of Predecessor common stock	1
Cancellation of Predecessor additional paid-in capital	526
Cancellation of Predecessor treasury stock	(296)
Net impact to Accumulated Deficit	\$ 1,445

(1) The net gain on reorganization adjustments has been included in "Reorganization items, net" in the Condensed Consolidated Statements of Operations.

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Fresh Start Adjustments

- (q) The Fresh Start Adjustments column reflects adjustments required to record the assets and liabilities of the Company at fair value, including the elimination of the accumulated deficit and accumulated other comprehensive (loss) of the Predecessor Company.
- (r) Reflects the adjustments made to Predecessor deferred revenue in situations where it has been determined the Successor Company has no remaining legal performance obligation related to the arrangement that give rise to the deferred revenue for the Predecessor Company.
- (s) Reflects the adjustment made to record finished goods inventory at its estimated fair value, which was determined based on the current acquisition cost, including disposal and holding period costs and a reasonable profit margin less costs to sell.
- (t) Reflects the adjustments made to record the Predecessor Company's investments in unconsolidated subsidiaries at fair value utilizing a cost approach method.
- (u) Reflects the deferred tax asset impact of the fresh start adjustments, resulting primarily from the book adjustment made to foreign property, plant, and equipment and intangibles that increased the future taxable temporary differences recorded.
- (v) Reflects the adjustments required to record the Predecessor Company's long-term assets at fair value.
- (w) Reflects the adjustments made to record property, plant and equipment at its estimated fair value and eliminate Predecessor accumulated depreciation. Depreciable lives were also revised to reflect the remaining estimated useful lives of the related property, plant and equipment, which range from 1 to 39 years. Fair value was determined as follows:
- The market, sales comparison or trended cost approach was utilized to estimate fair value for land and buildings. This approach relies upon recent sales, offerings of similar assets or a specific inflationary adjustment to original purchase price to arrive at a probable selling price.
 - The cost approach was utilized to estimate fair value for machinery and equipment. This approach considers the amount required to construct or purchase a new asset of equal utility at current market prices, with adjustments in value for physical deterioration and functional and economic obsolescence. Physical deterioration is an adjustment made in the cost approach to reflect the real operating age of an asset with regard to wear and tear, decay and deterioration that is not prevented by maintenance. Functional obsolescence is an adjustment made to reflect the loss in value or usefulness of an asset caused by inefficiencies or inadequacies of the asset, as compared to a more efficient or less costly replacement asset with newer technology. Economic obsolescence is an adjustment made to reflect the loss in value or usefulness of an asset due to factors external to the asset, such as the economics of the industry, reduced demand, increased competition or similar factors.

Depreciable lives were revised to reflect the remaining estimated useful lives as follows (in years):

Buildings	9 to 39 years
Machinery and equipment	1 to 20 years

- (x) Reflects \$25 of adjustments made to bring the right-of-use operating leased assets and their associated liabilities to fair value utilizing an average discount rate of approximately 6% and to record favorable leasehold interests of \$14, which were valued using a rental analysis approach based on (i) fair market rent was determined based on rates for facilities comparable to the Company's properties, (ii) discount rates ranging from 8.0% to 12.0%, which were based on the after-tax WACC; and (iii) market rental growth rates ranging from 0.0% to 5.0%.
- (y) Reflects the adjustments made to record the elimination of the Predecessor goodwill balance of \$108 and to record the Successor goodwill of \$178, which represents the reorganization value of assets in excess of amounts allocated to identified tangible and intangible assets.
- (z) Reflects the adjustments made to eliminate the Predecessor Company's other intangible assets of \$24 and to record \$1,219 in estimated fair value of Successor other intangible assets. Fair value was comprised of the following:
- Customer related intangible assets of \$968 were valued using the multi-period excess earnings income approach based on the following significant assumptions:
 - i. Forecasted net sales and profit margins attributable to the current customer base through the applicable economic useful life;
 - ii. Attrition rates ranging from 0.5% to 5.0%;
 - iii. Discount rates ranging from 13.0% to 17.5%, which were based on the after-tax WACC; and
 - iv. Economic lives of 20 to 25 years.
 - Trademarks of \$141 were valued using the relief from royalty income approach based on the following significant assumptions:
 - i. Forecasted net sales attributable to the trademarks through the applicable economic useful life;
 - ii. Royalty rates ranging from 0.2% to 2.0% of expected net sales determined with regard to comparable market transactions and profitability analysis;
 - iii. Discount rates ranging from 11.0% to 16.5%, which were based on the after-tax weighted average cost of capital ("WACC"); and
 - iv. Economic lives ranging from 15 to 20 years.

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- Technology based intangible assets of \$110 were valued used the relief from royalty income approach based on the following significant assumptions:
 - i. Forecasted net sales attributable to the respective technologies through the applicable economic useful life;
 - ii. Royalty rates ranging from 0.5% to 2.25% of expected net sales determined with regard to expected cash flows of respective technologies and the overall importance of respective technologies to product offering
 - iii. Discount rates ranging from 11.0% to 16.5%, which were based on the after-tax WACC; and
 - iv. Economic lives of 15 years.

(aa) Reflects the adjustments made to bring various sale-leaseback financing arrangements to fair value and to revalue debt obligations.

(ab) Reflects the remeasurement of the Predecessor Company's pension liabilities. The increase in pension liabilities was driven by reductions in discount rates and changes in other actuarial assumptions as of the Effective Date, primarily impacting our unfunded German pension plans.

(ac) Represents the deferred tax liability impact of the fresh start adjustments, resulting primarily from the book adjustment made to foreign property, plant, and equipment and intangibles that increased the future taxable temporary differences recorded.

(ad) Reflects the cumulative impact of the fresh start accounting adjustments discussed above and the elimination of the Predecessor Company's accumulated other comprehensive income:

Establishment of Successor goodwill	\$	178
Elimination of Predecessor goodwill		(108)
Establishment of Successor other intangible assets		1,219
Elimination of Predecessor other intangible assets		(24)
Inventory fair value adjustments		29
Property, plant and equipment fair value adjustment		780
Pension liability fair value adjustment		(44)
Other assets and liabilities fair value adjustment		3
Elimination of Predecessor Company accumulated other comprehensive income		(26)
Net gain on fresh start adjustments ⁽¹⁾		2,007
Tax impact on fresh start adjustments		(167)
Net impact on accumulated deficit	\$	1,840

(1) The net gain on fresh start adjustments has been included in "Reorganization items, net" in the Condensed Statements of Operations.

5. Reorganization Items, Net

Incremental costs incurred directly as a result of the Bankruptcy Petitions, gains on the settlement of liabilities under the Plan and the net impact of fresh start accounting adjustments are classified as "Reorganization items, net" in the Consolidated Statements of Operations. The following table summarizes reorganization items:

	Successor	Predecessor
	July 2, 2019 through December 31, 2019	January 1, 2019 through July 1, 2019
Net gain on reorganization adjustments (see Note 4)	\$ —	\$ (1,254)
Net gain on fresh start adjustments (see Note 4)	—	(2,007)
Financing fees	—	104
Professional fees	—	39
DIP ABL Facility fees	—	13
Total	\$ —	\$ (3,105)

6. Restructuring and Business Realignment

Restructuring Activities

In November 2017, the Company initiated new restructuring actions with the intent to optimize its cost structure. As of December 31, 2019, \$26 of one-time cash costs have been incurred for these restructuring activities, consisting primarily of workforce reduction costs, and no additional costs are expected to be incurred related to the 2017 programs. All costs for these restructuring activities were incurred in the predecessor period.

The following table summarizes restructuring information by reporting segment:

	Epoxy, Phenolic and Coating Resins	Forest Products Resins	Corporate and Other	Total
Total restructuring costs incurred through December 31, 2019	\$ 14	\$ 8	\$ 4	\$ 26
Predecessor				
Accrued liability at December 31, 2017	\$ 11	\$ 3	\$ 3	\$ 17
Restructuring charges	1	3	1	5
Payments	(10)	(4)	(2)	(16)
Accrued liability at December 31, 2018	\$ 2	\$ 2	\$ 2	\$ 6
Restructuring charges	1	—	—	1
Payments	(2)	(1)	(1)	(4)
Accrued liability at July 1, 2019	\$ 1	\$ 1	\$ 1	\$ 3
Successor				
Accrued liability at July 2, 2019	\$ 1	\$ 1	\$ 1	\$ 3
Restructuring charges	—	—	—	—
Payments	—	—	(1)	(1)
Accrued liability at December 31, 2019	\$ 1	\$ 1	\$ —	\$ 2

Oilfield

During the first quarter of 2018, the Company indefinitely idled an oilfield manufacturing facility within its Epoxy, Phenolic and Coating Resins segment, and production was shifted to another facility within the oilfield manufacturing group. This represented a triggering event resulting in an impairment evaluation of the fixed and intangible assets within the U.S. oilfield asset group. As a result, an asset impairment of \$20 was recorded in the first quarter of 2018 related to the fixed assets at the idled manufacturing facility. In addition, the remaining U.S. oilfield asset group was evaluated for impairment utilizing a discounted cash flow approach, resulting in an additional impairment of \$5 that was recorded during the first quarter of 2018 related to an existing customer relationship intangible asset. Overall, the Company incurred \$25 of total impairment related to these assets, which is included in "Asset impairments" in the Consolidated Statements of Operations for the year ended December 31, 2018.

During the third quarter of 2017, the Company indefinitely idled an oilfield manufacturing facility within its Epoxy, Phenolic and Coating Resins segment, and production was ceased at this facility. As a result, the estimated useful lives of certain long-lived assets related to this facility were shortened, and consequently, the Company incurred \$14 of accelerated depreciation related to these assets, which is included in "Cost of sales" in the Consolidated Statements of Operations.

7. Related Party Transactions

Transactions with Apollo

As of the Company's emergence from bankruptcy on July 1, 2019, Apollo is no longer a related party to the Company. The disclosures below are through July 1, 2019 and only reflect the time period when Apollo was a related party.

Management Consulting Agreement

The Company was party to a Management Consulting Agreement with Apollo (the "Management Consulting Agreement") pursuant to which the Company received certain structuring and advisory services from Apollo and its affiliates. Apollo was entitled to an annual fee equal to the greater of \$3 or 2% of the Company's Adjusted EBITDA. Apollo elected to waive charges of any portion of the annual management fee due in excess of \$3 for the calendar years 2018 and 2017.

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During the years ended December 31, 2018 and 2017, the Company recognized expense under the Management Consulting Agreement of \$3. This amount is included in "Other operating expense, net" in the Company's Consolidated Statements of Operations. In conjunction with the Company's Chapter 11 proceedings and the Support Agreement filed on April 1, 2019, Apollo agreed to waive its annual management fee for 2019. In connection with the Company's emergence from Chapter 11, the Management Consulting Agreement was terminated pursuant to the Confirmation Order, as of the Effective Date.

Support Agreement

Pursuant to the Support Agreement, Apollo received a \$2.5 senior unsecured note maturing on March 31, 2020, payable upon the earlier of the maturity date or an initial public offering or listing on NYSE or NASDAQ. This note was paid in full in December 2019.

Purchases and Sales of Products and Services with Apollo Affiliates

The Company sells products to various Apollo affiliates. These sales were \$1, \$2 and \$4 for the period January 1, 2019 through July 1, 2019, years ended December 31, 2018 and 2017, respectively. Accounts receivable from these affiliates were less than \$1 at December 31, 2018. There were no purchases for the period January 1, 2019 through July 1, 2019 and for the years ended December 31, 2018 and 2017. The Company had no accounts payable to these affiliates at December 31, 2018.

Transactions with MPM

As of May 15, 2019, MPM was no longer under the common control of Apollo and, accordingly, is no longer a related party to the Company.

Shared Services Agreement

On October 1, 2010, the Company entered into a shared services agreement with Momentive Performance Materials Inc. ("MPM") (which, from October 1, 2010 through October 24, 2014, was a subsidiary of Hexion Holdings), as amended in October 2014 (the "Shared Services Agreement"). Under this agreement, the Company provided to MPM, and MPM provided to the Company, certain services, including, but not limited to, executive and senior management, administrative support, human resources, information technology support, accounting, finance, legal and procurement services. The Shared Services Agreement established certain criteria upon which the costs of such services are allocated between the Company and MPM.

On February 11, 2019, MPM provided notice of its intention to terminate the Shared Services Agreement, effective March 14, 2019. The termination triggers a period of up to 14 months during which time the parties will work together to facilitate an orderly transition of services provided under the Shared Services Agreement.

Pursuant to the Shared Services Agreement, the below table summarizes the transactions between the Company and MPM:

		Predecessor		
		January 1, 2019 through July 1, 2019	Year Ended December 31,	
			2018	2017
Total cost pool - Hexion ⁽¹⁾⁽²⁾		\$ 15	\$ 28	\$ 48
Total cost pool - MPM ⁽¹⁾⁽²⁾		14	21	38
(1)	Included in the cost pools during the period January 1, 2019 through July 1, 2019 and years ended December 31, 2018, and 2017, were net billings from Hexion to MPM of \$11, \$14, and \$26, respectively, to bring the percentage of total net incurred costs for shared services under the Shared Services Agreement to the applicable agreed upon allocation. The allocation percentages for Hexion and MPM, respectively, were 52% and 48% for the period January 1, 2019 through July 1, 2019, 57% and 43% in 2018 and 56% and 44% in 2017. The scope of services and allocation percentages are reviewed by the Steering Committee pursuant to the terms of the Shared Services Agreement. The Company had accounts receivable from MPM of \$2 at December 31, 2018.			
(2)	Shared Service Agreements transactions with MPM reported above are through May 15, 2019 and only reflect the time period when MPM was a related party.			

Sales and Purchases of Products and Services with MPM

The Company also sells products to, and purchases products from, MPM. During each of the years ended December 31, 2018, and 2017, the Company sold less than \$1 of products to MPM. There were no products sold during the period January 1, 2019 through July 1, 2019. During the period January 1, 2019 through July 1, 2019 and for the years ended December 31, 2018, and 2017, the Company earned \$1 from MPM as compensation for acting as distributor of products. The Company had \$3 of accounts payable to MPM at December 31, 2018. Refer to the below table for the summary of the purchases of products with MPM:

		Predecessor		
		January 1, 2019 through July 1, 2019	Year ended December 31,	
			2018	2017
Purchases from MPM ⁽¹⁾		\$ 10	\$ 32	\$ 24
(1)	Purchases from MPM are through May 15, 2019 and only reflect the time period when MPM was a related party			

Other Transactions and Arrangements

The Company sells products and provides services to, and purchases products from, its other joint ventures which are accounted for under the equity method of accounting. Refer to the below table for a summary of the sales and purchases with the Company and its joint ventures which are recorded under the equity method of accounting:

	Successor		Predecessor		
	July 2, 2019 through December 31, 2019		January 1, 2019 through July 1, 2019	Year ended December 31,	
				2018	2017
Sales to joint ventures	\$	2	\$	2	\$ 9 \$ 17
Purchases from joint ventures		2		2	6 14

	Successor		Predecessor	
	December 31, 2019		December 31, 2018	
Accounts receivable from joint ventures	\$	1	\$	2
Accounts payable to joint ventures		<1		<1

In addition to the joint ventures disclosed above, the Company had a loan receivable of \$7 at both December 31, 2019 and 2018, respectively, from its unconsolidated forest products joint venture in Russia.

8. Goodwill and Intangible Assets

In connection with the Company's emergence from Chapter 11 and application of fresh start accounting, the excess of reorganization value over the fair value of identified tangible and intangible assets of \$178 was recorded as goodwill as of July 1, 2019. The Company's gross carrying amount and accumulated impairments of goodwill consist of the following as of December 31, 2019 and 2018:

	Successor				Predecessor			
	2019				2018			
	Gross Carrying Amount	Accumulated Impairments	Accumulated Foreign Currency Translation	Net Book Value	Gross Carrying Amount	Accumulated Impairments	Accumulated Foreign Currency Translation	Net Book Value
Forest Products Resins	\$ 141	\$ —	\$ —	\$ 141	\$ 80	\$ —	\$ (12)	\$ 68
Epoxy, Phenolic and Coating Resins	37	—	—	37	111	(70)	—	41
Total	\$ 178	\$ —	\$ —	\$ 178	\$ 191	\$ (70)	\$ (12)	\$ 109

The changes in the net carrying amount of goodwill by segment for the years ended December 31, 2019 and 2018 are as follows:

	Forest Products Resins	Epoxy, Phenolic and Coating Resins	Total
Predecessor			
Goodwill balance at December 31, 2017	\$ 71	\$ 42	\$ 113
Divestitures	(1)	—	(1)
Foreign currency translation	(2)	(1)	(3)
Goodwill balance at December 31, 2018	68	41	109
Foreign currency translation	(1)	—	(1)
Goodwill balance at June 30, 2019	67	41	108
Elimination of Predecessor Goodwill	(67)	(41)	(108)
Goodwill balance at July 1, 2019	\$ —	\$ —	\$ —
Recording of Successor Goodwill ⁽¹⁾	141	37	178
Successor			
Goodwill balance at July 2, 2019	\$ 141	\$ 37	\$ 178
Adjustments ⁽²⁾	—	—	—
Goodwill balance at December 31, 2019	\$ 141	\$ 37	\$ 178

(1) Recording of the Successor Company goodwill in accordance with the application of fresh start accounting. Refer to Note 4 for more details.

(2) There were no foreign currency adjustments nor impairments related to Successor Company goodwill for the period July 2, 2019 through December 31, 2019.

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The Company's intangible assets with identifiable useful lives consist of the following as of December 31, 2019 and 2018:

	Gross Carrying Amount	Accumulated Impairments	Accumulated Amortization ⁽¹⁾	Net Book Value
Successor	2019			
Customer relationships	\$ 968	\$ —	\$ (23)	\$ 945
Trademarks	141	—	(4)	137
Technology	110	—	(4)	106
Total	\$ 1,219	\$ —	\$ (31)	\$ 1,188
Predecessor	2018			
Patents and technology	\$ 112	\$ —	\$ (100)	\$ 12
Customer lists and contracts	109	(22)	(83)	4
Other	25	—	(14)	11
Total	\$ 246	\$ (22)	\$ (197)	\$ 27

(1) The impact of foreign currency translation on intangible assets is included in accumulated amortization in the table above.

On July 1, 2019, as part of the application of fresh start accounting, the Company's existing intangible assets were eliminated and new intangible assets were established at their estimated fair value as of July 1, 2019. New intangible assets were established for customer relationships, trademarks, and technology. See Note 4 for more information.

In 2018, as a result of the indefinite idling of an oilfield manufacturing facility with the Epoxy, Phenolic and Coating Resins segment, the remaining U.S. oilfield asset group was evaluated for impairment utilizing a discounted cash flow approach, resulting in an additional impairment of \$5 that was recorded during the first quarter of 2018 related to an existing customer relationship intangible asset, which is included in "Asset impairments" in the Consolidated Statements of Operations for the year ended December 31, 2018.

Total intangible amortization expense for the periods July 2, 2019 through December 31, 2019, January 1, 2019 through July 1, 2019 and the years ended December 31, 2018 and 2017 was \$28, \$3, \$10 and \$12, respectively.

Estimated annual intangible amortization expense for 2020 through 2024 is as follows:

2020	\$ 60
2021	60
2022	60
2023	60
2024	60

9. Fair Value

Fair value is the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Fair value measurement provisions establish a fair value hierarchy which requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. This guidance describes three levels of inputs that may be used to measure fair value:

- **Level 1:** Inputs are quoted prices (unadjusted) for identical assets or liabilities in active markets.
- **Level 2:** Pricing inputs are other than quoted prices in active markets included in Level 1, which are either directly or indirectly observable as of the reported date.
- **Level 3:** Unobservable inputs that are supported by little or no market activity and are developed based on the best information available in the circumstances. For example, inputs derived through extrapolation or interpolation that cannot be corroborated by observable market data.

Recurring Fair Value Measurements

As of December 31, 2019, the Company had derivative liabilities related to foreign exchange, electricity and natural gas contracts of less than \$1, which were measured using Level 2 inputs, and consist of derivative instruments transacted primarily in over-the-counter markets. There were no transfers between Level 1, Level 2 or Level 3 measurements during the Successor period July 2, 2019 through December 31, 2019, the Predecessor period January 1, 2019 through July 1, 2019 and for the year ended December 31, 2018.

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The Company calculates the fair value of its Level 2 derivative liabilities using standard pricing models with market-based inputs, adjusted for nonperformance risk. When its financial instruments are in a liability position, the Company evaluates its credit risk as a component of fair value. At December 31, 2019 and 2018, no adjustment was made by the Company to reduce its derivative liabilities for nonperformance risk.

When its financial instruments are in an asset position, the Company is exposed to credit loss in the event of nonperformance by other parties to these contracts and evaluates their credit risk as a component of fair value.

Forward Contract

On June 26, 2019, the Predecessor Company entered into a foreign exchange forward contract (the "FX Contract") to manage the foreign currency risk associated with the Euro denominated tranche of the new Term Loan Facility in an aggregate notional amount of €425M, in connection with the completion of the Plan on July 1, 2019 (see Note 10). The FX Contract committed the counterparty to exchange Euro denominated currency for U.S. dollar currency on July 1, 2019, the funding date of the Term Loan Facility. At the funding date, the FX Contract was settled for a loss of less than \$1 within the Company's Consolidated Statement of Operations.

Interest Rate Swap

On October 10, 2019, the Company executed an interest rate swap syndication agreement with Credit Suisse International where Hexion receives a variable 3-month LIBOR, and pays fixed interest rate swaps, beginning January 1, 2020 through January 1, 2025 (the "Hedge") for a total notional amount of \$300. The purpose of this arrangement is to hedge the variability caused by quarterly changes in cash flow due to associated changes in LIBOR for \$300 of the total \$725 of the Company's variable rate Senior Secured Term Loan denominated in USD. The Company has evaluated this transaction and designated this derivative instrument as a cash flow hedge for hedge accounting under Accounting Standard Codification, No. 815, "Derivatives and hedging," ("ASC 815"). Hedge accounting under ASC 815 required the Company to formally document at inception the relationship between the hedging instrument and the hedged item, the risk management objective, strategy and the evaluation of effectiveness of the hedged transaction. For the Hedge, the Company will record changes in the fair value of the derivative in other comprehensive income ("OCI") and will subsequently reclassify gains and losses from these changes in fair value from OCI to Consolidated Statement of Operations in the same period that the hedged transaction affects net income and in the same Consolidated Statement of Operations category as the hedged item, "Interest expense, net". During the Successor period July 2, 2019 through December 31, 2019, the Company recorded an unrealized gain from the change in the fair value of the derivative of \$2 which is included in "Unrealized gain on cash flow hedge" within OCI.

Interest Rate Cap

On October 22, 2019, the Company executed an interest rate cap derivative instrument for a premium amount of less than \$1. The objective of this instrument is to partially eliminate the variability of cash flows in future interest payments for a notional amount of \$375 of its variable rate Senior Secured Term Loan when 3-month LIBOR is above 2.50%, beginning January 1, 2020 through January 1, 2023. This instrument is a derivative under ASC 815 that does not qualify for hedge accounting and as a result, changes in fair value will be recognized within earnings in the Consolidated Statement of Operations throughout the term of the instrument. For the year ended December 31, 2019, the Company recognized a gain of less than \$1 which is included in "Other operating expense, net" on the Consolidated Statement of Operations.

Non-derivative Financial Instruments

The following table summarizes the carrying amount and fair value of the Company's non-derivative financial instruments:

Successor	Carrying Amount	Fair Value			
		Level 1	Level 2	Level 3	Total
December 31, 2019					
Debt	\$ 1,785	\$ —	\$ 1,751	\$ 64	\$ 1,815
Predecessor					
December 31, 2018					
Debt	\$ 3,815	\$ —	\$ 2,679	\$ 66	\$ 2,745

Fair values of debt classified as Level 2 are determined based on other similar financial instruments, or based upon interest rates that are currently available to the Company for the issuance of debt with similar terms and maturities. Level 3 amounts represent capital leases whose fair value is determined through the use of present value and specific contract terms. The carrying amounts of cash and cash equivalents, short term investments, accounts receivable, accounts payable and other accrued liabilities are considered reasonable estimates of their fair values due to the short-term maturity of these financial instruments.

10. Debt Obligations

Debt outstanding at December 31, 2019 and 2018 is as follows:

	Successor		Predecessor	
	December 31, 2019		December 31, 2018	
	Long-Term	Due Within One Year	Long-Term	Due Within One Year
Senior Secured Credit Facility:				
ABL Facility (Predecessor)	\$ —	\$ —	\$ —	\$ 137
ABL Facility (Successor)	—	—	—	—
Senior Secured Term Loan - USD due 2026 (includes \$7 of unamortized debt discount at December 31, 2019)	708	7	—	—
Senior Secured Term Loan - EUR due 2026 (includes \$4 of unamortized debt discount at December 31, 2019)	473	—	—	—
Senior Notes:				
7.875% Senior Notes due 2027	450	—	—	—
Senior Secured Notes:				
6.625% First-Priority Senior Secured Notes due 2020	—	—	—	1,550
10.00% First-Priority Senior Secured Notes due 2020	—	—	—	315
10.375% First-Priority Secured Notes due 2022	—	—	—	560
13.75% Senior Secured Notes due 2022	—	—	—	225
9.00% Second-Priority Senior Secured Notes due 2020	—	—	—	574
Debentures:				
9.2% debentures due 2021	—	—	—	74
7.875% debentures due 2023	—	—	—	189
Other Borrowings:				
Australia Facility due 2021 at 3.9% and 4.8% at December 31, 2019 and 2018, respectively	27	4	30	4
Brazilian bank loans at 9.2% and 10.0% at December 31, 2019 and 2018, respectively	7	34	12	41
Lease obligations ⁽¹⁾	50	14	56	10
Other at 5.0% and 5.3% at December 31, 2019 and 2018, respectively	—	11	1	37
Total	\$ 1,715	\$ 70	\$ 99	\$ 3,716

(1) Lease obligations include finance leases and sale leaseback financing arrangements. Amounts reflected for December 31, 2018 represent capital lease obligations and sale leaseback financing arrangements as recorded under ASC 840.

In consummation of the Plan, on July 1, 2019, the 1L Note holders received their pro rata share of (a) cash in the amount of \$1.450 billion (less the sum of adequate protection payments paid on account of the 1L Notes during the Chapter 11 cases), (b) 72.5% of new common equity of Hexion Holdings ("New Common Equity") (subject to the Agreed Dilution), and (c) 72.5% of the rights to purchase additional New Common Equity pursuant to the Rights Offering.

Additionally, the owners of the 1.5L Notes, 2L Notes, and Unsecured Notes received their pro rata share of (a) 27.5% of the New Common Equity (subject to the Agreed Dilution) and (b) 27.5% of the rights to purchase additional New Common Equity pursuant to the Rights Offering. See Note 3 for more information.

As discussed in Note1, there was substantial doubt as to the Company's ability to continue as a going concern as of December 31, 2018. The Bankruptcy Petitions constituted an event of default that accelerated the Company's obligations under its Predecessor ABL Facility and 1L Notes, the 1.5L Notes, the 2L Notes, and the Unsecured Notes. As such, all outstanding debt as of December 31, 2018 related to these debt instruments were classified as "Debt payable within one year" in the audited Consolidated Balance Sheets and related footnote disclosures. As of December 31, 2019, the Company expects to continue as a going concern for the next twelve months and therefore all of the outstanding debt is classified in accordance with its contractual maturities.

In connection with the filing of the Bankruptcy Petitions, on April 3, 2019, as described in Note3 the proceeds of the DIP Term Loan Facility were used in part to repay in full the outstanding obligations under the Company's existing asset-based revolving credit agreement ABL Facility.

Successor Credit Facilities and Senior Notes

ABL Facility

On July 1, 2019, in connection with the Emergence, the Company, Hexion Canada Inc., a Canadian corporation (the "Canadian ABL Borrower"), Hexion B.V., a company organized under the laws of The Netherlands (the "Dutch ABL Borrower"), Hexion GmbH, a company organized under the laws of Germany (the "German ABL Borrower"), Hexion UK Limited, a corporation organized under the laws of England and Wales (the "U.K. ABL Borrower") and, together with the Company, the Canadian ABL Borrower, the Dutch ABL Borrower and the German ABL Borrower, the "ABL Borrowers") entered into a senior secured ABL Facility with the lenders and other parties thereto and JPMorgan Chase Bank, N.A., as administrative agent and collateral agent, in an aggregate principal amount of \$350, under which the ABL Borrowers may borrow funds from time to time and up to \$150 amount of which is available through a subfacility in the form of letters of credit, in each case subject to a borrowing base, as further described below. In addition, the Company may request one or more incremental facilities in an aggregate amount equal to the greater of (i) \$100 and (ii) the excess of the borrowing base over \$350.

The ABL Facility will mature and the commitments thereunder will terminate on July 1, 2024 and bears interest based on an adjusted LIBOR rate, EURIBOR or an alternate base rate (depending on the currency of the borrowing), in each case plus an applicable initial margin of 1.50% or, in the case of the alternate base rate, 0.50%, which margin may increase or decrease depending on the average availability under the ABL Facility.

The borrowing base is, at any time of determination, an amount (net of reserves) equal to the sum of:

- in the case of the borrowing base for the Company's U.S., U.K., Dutch and Canadian subsidiaries, 85% of the amount of eligible receivables (or 90% of the amount of "investment grade" eligible receivables) (including trade receivables), plus
- in the case of the borrowing base for the Company's U.S., U.K., Dutch and Canadian subsidiaries, the lesser of (i) 70% of the amount of eligible inventory and (ii) 85% of the net orderly liquidation value of eligible inventory, plus
- in the case of the borrowing base for the Company's U.K., Dutch, Canadian and German subsidiaries, the lesser of (i) the sum of (a) 80% of the amount of eligible machinery and equipment appraised on a net orderly liquidation basis and (b) 75% of the appraised fair market value of eligible real property of the loan parties in Canada, England and Wales, the Netherlands and Germany and (ii) the lesser of (x) 20% of the total commitments and (y) 20% of the borrowing base of the borrowers without giving effect to the additional borrowing base from the eligible machinery and equipment and eligible real property, plus
- in the case of the borrowing base for the Company's U.S. and Canadian subsidiaries, 100% of unrestricted cash, in each case held in an account subject to the springing control of the agent; provided, that the cash component of the borrowing base shall not constitute more than the lesser of (x) 15.0% of the total commitments and (y) 15.0% of the borrowing base of the borrowers (calculated prior to giving effect to such limitation).

The borrowing base of the U.K., Dutch and German subsidiaries may not exceed the greater of 50% of the total commitments and 50% of the borrowing base of the ABL Borrowers. On the closing date of the ABL Facility, as adjusted for the consummation of the Plan and related transactions, the borrowing base reflecting various required reserves was determined to be approximately \$350.

In addition to paying interest on outstanding principal under the ABL Facility, the Company is required to pay a commitment fee to the lenders in respect of the unutilized commitments thereunder at a rate equal to 0.50% or 0.375% per annum depending on the average utilization of the commitments. The Company also pays a customary letter of credit fee, including a fronting fee of 0.125% per annum of the daily average stated amount of each outstanding letter of credit, and customary agency fees.

Outstanding loans under the ABL Facility may be voluntarily repaid at any time without premium or penalty, other than customary "breakage" costs with respect to eurocurrency loans.

The obligations of the Company under the ABL Facility are unconditionally guaranteed by the Company's direct parent, Hexion Intermediate, and each of the Company's existing and future wholly-owned material U.S. subsidiaries, which the Company refers to as the "U.S. ABL Guarantors." In addition, all obligations of the foreign subsidiary borrowers under the ABL Facility are guaranteed by the U.S. ABL Guarantors and certain other direct and indirect wholly-owned foreign subsidiaries, which the Company refers to collectively as the "Foreign ABL Guarantors" and, together with the U.S. ABL Guarantors, the "ABL Guarantors."

In addition, the ABL Facility requires the Company to maintain a minimum fixed charge coverage ratio at any time when the excess availability is less than the greater of (x) \$30 and (y) 10.0% of the lesser of (i) the borrowing base at such time and (ii) the aggregate amount of ABL Facility commitments at such time. In that event, the Company must satisfy a minimum fixed charge coverage ratio of 1.0 to 1.0. The Company was in compliance with all ABL Facility provisions as of December 31, 2019.

New Senior Secured Term Loan Facility

Additionally, in connection with the completion of the Plan, on July 1, 2019, the Company and Hexion International Cooperatief U.A., a company organized under the laws of the Netherlands (the "Dutch Term Loan Borrower" and, together with the Company, the "Term Loan Borrowers"), entered into a senior secured term loan facility with the lenders party thereto and JPMorgan Chase Bank, N.A., as administrative agent and collateral agent (the "Term Loan Facility"), which consists of (i) a USD denominated tranche in an aggregate principal amount of \$725 ("Senior Secured Term Loan - USD") borrowed by the Company and (ii) a EUR denominated tranche in an aggregate principal amount of €425 ("Senior Secured Term Loan - EUR") borrowed by the Dutch Term Loan Borrower. In addition, the Company may request one or more incremental facilities in an aggregate amount up to the sum of \$425 and amounts that may be incurred pursuant to certain leverage and coverage ratios.

The Term Loan Facility will mature on July 1, 2026 and bears interest based on (i) in the case of the USD tranche, at the Company's option, an adjusted LIBOR rate or an alternate base rate, in each case plus an applicable margin equal to 3.50% or, in the case of the alternate base rate, 2.50% and (ii) in the case of the EUR tranche, EURIBOR plus an applicable margin equal to 4.00%. As of December 31, 2019, the effective interest for the Company's Term Loan Facility on the USD tranche and EUR tranche was 5.82% and 4.00%, respectively.

The obligations of the Company under the Term Loan Facility are unconditionally guaranteed by Hexion Intermediate and each of the Company's existing and future wholly owned material U.S. subsidiaries, which subsidiaries the Company refers to collectively as "U.S. Term Guarantors". In addition, all obligations of the Dutch Term Loan Borrower under the Term Loan Facility are guaranteed by Hexion Intermediate, the Company, the U.S. Term Guarantors and certain other direct and indirect wholly-owned foreign subsidiaries, which foreign subsidiaries the Company collectively refers to as the "Foreign Term Guarantors" (together with the U.S. Term Guarantors, the "Subsidiary Term Guarantors" and, together with Hexion Intermediate, the "Term Guarantors").

The Credit Facilities contain among other provisions, restrictive covenants regarding indebtedness, payments and distributions, mergers and acquisitions, asset sales, affiliate transactions, capital expenditures and the maintenance of certain financial ratios. Events of default include the failure to pay principal and interest when due, a material breach of representation or warranty, covenant defaults, events of bankruptcy and a change of control. The Credit Facilities also contain certain other customary affirmative covenants and events of default. If the Company fails to perform its obligations under these and other covenants, the Credit Facilities could be terminated and any outstanding borrowings, together with accrued interest, under the Credit Facilities could be declared immediately due and payable. There were no covenant violations or events of default as of December 31, 2019.

Indenture and 7.875% Senior Notes due 2027

The Company entered into an indenture, dated as of July 1, 2019 (the "Indenture"), among the Company, the subsidiary guarantors party thereto and Wilmington Trust, National Association, as trustee, and issued \$450 aggregate principal amount of 7.875% Senior Notes due 2027 (the "Senior Notes") thereunder. The Senior Notes are guaranteed on a senior basis by the Company's existing domestic subsidiaries that guarantee its obligations under its Credit Facilities (as defined below) (the "Guarantors") on a full and unconditional basis. The following is a brief description of the material provisions of the Indenture and the Senior Notes.

The Senior Notes will mature on July 15, 2027. Interest on the Senior Notes will accrue at the rate of 7.875% per annum and will be payable semiannually in arrears on January 15 and July 15, commencing on January 15, 2020.

Optional Redemption. At any time prior to July 15, 2022, the Company may redeem the Senior Notes, in whole or in part, at a price equal to 100% of the principal amount of the Senior Notes redeemed, plus an applicable "make-whole" premium and accrued and unpaid interest, if any, to the redemption date.

In addition, at any time prior to July 15, 2022, the Company may redeem up to 40% of the aggregate principal amount of the Senior Notes at a redemption price of 107.875% of the principal amount thereof, plus accrued and unpaid interest, if any, to the redemption date, with the net cash proceeds of certain equity offerings; provided that at least 50% of the aggregate principal amount of the Senior Notes originally issued under the Indenture remains outstanding immediately after the occurrence of such redemption (excluding Notes held by the Company and its subsidiaries); and provided, further, that such redemption occurs within 90 days of the date of the closing of such equity offering.

On and after July 15, 2022, the Company may redeem all or a part of the Senior Notes at the redemption prices (expressed as percentages of principal amount) set forth below plus accrued and unpaid interest, if any, thereon, to the applicable redemption date, if redeemed during the twelve-month period beginning on July 15 of the years indicated below:

<u>Year</u>	<u>Percentage</u>
2022	103.94%
2023	101.97%
2024 and thereafter	100.00%

Change of Control. If a change of control (as defined in the Indenture) occurs, holders of the Senior Notes will have the right to require the Company to repurchase all or any part of their Senior Notes at a purchase price equal to 101% of the aggregate principal amount of the Senior Notes repurchased, plus accrued and unpaid interest, if any, to the repurchase date.

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Certain Covenants. The Indenture governing the Senior Notes contains, among other provisions, restrictive covenants regarding indebtedness, payments and distributions, mergers and acquisitions, asset sales, affiliate transactions, capital expenditures and the maintenance of certain financial ratios. At such time as (1) the Senior Notes have an investment grade rating from both of Moody's Investors Service, Inc. and Standard and Poor's Ratings Services and (2) no default has occurred and is continuing under the Indenture, certain of these and other covenants will be suspended and cease to be in effect.

Events of Default. The Indenture also provides for certain customary events of default, including, among others, nonpayment of principal or interest, failure to pay final judgments in excess of a specified threshold, failure of a guarantee to remain in effect, bankruptcy and insolvency events, and cross acceleration, which would permit the principal, premium, if any, interest and other monetary obligations on all the then outstanding Senior Notes to be declared due and payable immediately.

Intercreditor Agreement

On July 1, 2019, in connection with the Emergence, JPMorgan Chase Bank, N.A., as collateral agent under each of the Credit Facilities, and the Company and certain of its subsidiaries entered into an ABL Intercreditor Agreement that, among other things, sets forth the relative lien priorities of the secured parties under the Credit Facilities on the collateral shared by the ABL Facility and the Term Loan Facility.

Predecessor ABL Facility

In December 2016, the Company entered into an amended and restated ABL Facility (the "Predecessor ABL Facility"). Availability under the Predecessor ABL Facility was \$350, subject to a borrowing base based on a specified percentage of eligible accounts receivable and inventory. The Predecessor ABL Facility included certain international property plant and equipment as collateral up to \$70. The borrowers under the Predecessor ABL Facility included the Company and Hexion Canada Inc., Hexion B.V., Hexion UK Limited, Borden Chemical UK Limited and Hexion GmbH, each a wholly owned subsidiary of the Company.

The Predecessor ABL Facility bore interest at a floating rate based on, at the Company's option, an adjusted LIBOR rate plus an initial applicable margin of 2.25% or an alternate base rate plus an initial applicable margin of 1.25%. As of December 31, 2018, the applicable margin for LIBOR rate loans was 2.25% and for alternate base rate loans was 1.25%. In addition to paying interest on outstanding principal under the ABL Facility, the Company was required to pay a commitment fee to the lenders in respect of the unutilized commitments at an initial rate equal to 0.50% per annum, subject to adjustment depending on the usage. The ABL Facility did not have any financial maintenance covenants, other than a fixed charge coverage ratio of 1.0 to 1.0 that only applies if availability under the ABL Facility is less than the greater of (a) \$35 and (b) 12.5% of the lesser of the borrowing base and the total ABL Facility commitments at such time. The fixed charge coverage ratio under the credit agreement governing the ABL Facility is generally defined as the ratio for the most recent four consecutive fiscal quarters of (a) Adjusted EBITDA minus non-financed capital expenditures and cash taxes to (b) debt service plus cash interest expense plus certain restricted payments, each measured for the four most recent quarters in which financial statements have been delivered. The Predecessor ABL Facility is secured by, among other things, first-priority liens on most of the inventory and accounts receivable and related assets of the Company, its domestic subsidiaries and certain of its foreign subsidiaries (the "Predecessor ABL Priority Collateral"), and by second-priority liens on certain collateral that generally includes most of the Company's, its domestic subsidiaries' and certain of its foreign subsidiaries' assets other than the Predecessor ABL Priority Collateral, in each case subject to certain exceptions and permitted liens. Available borrowings under the ABL Facility were \$165 as of December 31, 2018.

Predecessor Notes and Debentures

	Origination Date	Interest Payable	Principal Amount	Maturity Date
6.625% First-Priority Senior Secured Notes	March 2012	6.625%	\$450	April 2020
6.625% First-Priority Senior Secured Notes	January 2013	6.625%	\$1,100	April 2020
10.00% First-Priority Senior Secured Notes	April 2015	10.00%	\$315	April 2020
10.375% First-Priority Senior Secured Notes	February 2017	10.375%	\$560	February 2022
13.75% Senior Secured Notes	February 2017	13.75%	\$225	February 2022
9.00% Second-Priority Senior Secured Notes	November 2010	9.00%	\$574	November 2020
9.20% debentures	March 1991	9.20%	\$74	March 2021
7.875% debentures	May 1993	7.875%	\$189	February 2023

The First-Priority Senior Secured Notes were secured by first-priority liens on collateral that generally included most of the Company's and its domestic subsidiaries' assets other than inventory and accounts receivable and related assets (the "Predecessor Notes Priority Collateral"), and by second-priority liens on the domestic portion of the Predecessor ABL Priority Collateral, in each case subject to certain exceptions and permitted liens. The Second-Priority Senior Notes were secured by second-priority liens on collateral that was substantially the same as the First-Priority Senior Secured Notes.

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Other Borrowings

The Company's Australian Term Loan Facility has a variable interest rate equal to the 90 day Australian or New Zealand Bank Bill Rates plus an applicable margin. The agreement also provides access to a \$7 revolving credit facility of which there were \$1 outstanding borrowings at December 31, 2019 and no outstanding borrowings at December 31, 2018. In February 2018, the Company extended its Australian Term Loan Facility through January 2021.

The Brazilian bank loans represent various bank loans, primarily for working capital purposes and to finance the construction of manufacturing facilities.

The Company's other debt obligations represent various international credit facilities in China, Colombia and Korea to fund working capital needs and capital expenditures. While these facilities are primarily unsecured, portions of the lines are collateralized by equipment and cash and short term investments at December 31, 2019.

The Company's lease obligations classified as debt on the Consolidated Balance Sheets include finance leases and sale leaseback financing arrangements, which range from one to fifteen year terms for equipment, pipeline, land and buildings. Amounts reflected for December 31, 2018 represent capital lease obligations and sale leaseback financing arrangements as recorded under ASC 840.

Scheduled Maturities

Aggregate maturities of debt, excluding amortization of debt discounts, at December 31, 2019 for the Company are as follows:

Year	Debt
2020	\$ 73
2021	57
2022	33
2023	16
2024	8
2025 and thereafter	1,615
Total minimum payments	1,802
Less: Amount representing interest	(6)
Present value of minimum payments	\$ 1,796

11. Leases

The Company leases certain buildings, warehouses, rail cars, land and operating equipment under both operating and finance leases expiring on various dates through 2044. Leases with an initial term of 12 months or less are not recorded on the balance sheet and the Company recognizes lease expense for these leases on a straight-line basis over the lease term. For lease agreements entered into or reassessed after the adoption of Topic 842, the Company combines lease and non-lease components.

The Company determines if a contract is a lease at the inception of the arrangement. The Company reviews all options to extend, terminate, or purchase its right of use assets at the inception of the lease and accounts for these options when they are reasonably certain of being exercised. Nearly all of the Company's lease contracts do not provide a readily determinable implicit rate. For these contracts, the Company estimates the incremental borrowing rate to discount the lease payments based on information available at lease commencement.

Lease Costs

The table below summarizes the lease costs for the for the Successor period July 2, 2019 through December 31, 2019 and the Predecessor period January 1, 2019 through July 1, 2019:

	Classification	Successor July 2, 2019 through December 31, 2019	Predecessor January 1, 2019 through July 1, 2019
Operating lease expense	Operating (loss) income	\$ 19	\$ 18
Short-term lease expense	Operating (loss) income	2	5
Amortization expense	Operating (loss) income	1	1
Interest expense from financing leases	Interest expense, net	<1	<1
Variable lease expense	Operating (loss) income	3	2

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Balance Sheet Classification

The table below presents the lease-related assets and liabilities recorded on the Consolidated Balance Sheet:

Successor		December 31, 2019 ⁽¹⁾
	Classification	
Assets:		
Operating ⁽¹⁾	Operating lease assets	\$ 122
Finance ⁽²⁾	Machinery and Equipment	10
Total leased assets		\$ 132
Liabilities:		
<i>Current</i>		
Operating	Current portion of operating lease liabilities	\$ 22
Finance	Debt payable within one year	4
<i>Noncurrent</i>		
Operating	Operating lease liabilities	86
Finance	Long-term debt	3
Total leased liabilities		\$ 115

(1) Operating lease assets include \$14 of favorable leasehold interests as of December 31, 2019.

(2) Finance lease assets are recorded net of accumulated amortization for the Successor Period of \$1 as of December 31, 2019.

Other Lease Information

Cash paid for operating leases approximated operating lease expense and non-cash right-of-use asset amortization for the Successor period July 2, 2019 through December 31, 2019 and the Predecessor period January 1, 2019 through July 1, 2019. The table below presents other cash consideration detail for the Successor period July 2, 2019 through December 31, 2019 and the Predecessor period January 1, 2019 through July 1, 2019:

	Successor July 2, 2019 through December 31, 2019	Predecessor January 1, 2019 through July 1, 2019
Cash paid for finance leases	\$ 2	\$ 2
Right-of-use assets obtained in exchange for operating lease	2	1
Right-of-use assets obtained in exchange for finance lease obligations	—	3

The tables below present supplemental information related to leases as of December 31, 2019:

Successor	December 31, 2019
Weighted-average remaining lease term (years)	
Operating leases	10.4
Finance leases	1.7
Weighted-average discount rate	
Operating leases	5.75%
Finance leases	10.00%

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The table below reconciles the undiscounted cash flows for each of the first five years and the total of the remaining years to the finance lease liabilities and operating lease liabilities recorded on the Successor Company's Consolidated Balance Sheet as of December 31, 2019:

Year	Minimum Rentals Under Operating Leases	Minimum Payments Under Finance Leases ⁽¹⁾
2020	\$ 28	\$ 3
2021	21	3
2022	14	—
2023	11	—
2024	4	—
2025 and thereafter	66	2
Total lease payments	\$ 144	\$ 8
Less: Amount representing interest	(36)	(1)
Present value of lease liabilities	\$ 108	\$ 7

(1) Amounts exclude sale leaseback financing arrangements which are not considered leases under Topic 842.

Disclosures related to periods prior to adoption of ASU 2016-02

The Company adopted ASU 2016-02 using a retrospective adoption method at January 1, 2019. See Note 2 for more information. The following is the minimum lease commitments under the previous lease guidance (ASC 840) as of December 31, 2018, as disclosed in the Predecessor Company's most recent Annual Report on Form 10-K.

Predecessor

Year	Minimum Rentals Under Operating Leases	Minimum Payments Under Capital Leases
2019	\$ 33	\$ 15
2020	24	20
2021	20	13
2022	13	26
2023	10	9
2024 and thereafter	61	1
Total minimum payments	\$ 161	84
Less: Amount representing interest		(18)
Present value of minimum payments		\$ 66

12. Commitments and Contingencies

Environmental Matters

The Company's operations involve the use, handling, processing, storage, transportation and disposal of hazardous materials. The Company is subject to extensive environmental regulation at the federal, state and local levels as well as foreign laws and regulations, and is therefore exposed to the risk of claims for environmental remediation or restoration. In addition, violations of environmental laws or permits may result in restrictions being imposed on operating activities, substantial fines, penalties, damages or other costs, any of which could have a material adverse effect on the Company's business, financial condition, results of operations or cash flows.

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The following table summarizes all probable environmental remediation, indemnification and restoration liabilities, including related legal expenses, at December 31, 2019 and 2018:

Site Description	Liability		Range of Reasonably Possible Costs as of December 31, 2019	
	Successor	Predecessor	Low	High
	December 31, 2019	December 31, 2018		
Geismar, LA	\$ 12	\$ 13	\$ 9	\$ 22
Superfund and offsite landfills – allocated share:				
Less than 1%	3	3	2	6
Equal to or greater than 1%	6	5	5	14
Currently-owned	8	6	4	14
Formerly-owned:				
Remediation	21	22	18	40
Monitoring only	1	1	1	1
Total	\$ 51	\$ 50	\$ 39	\$ 97

These amounts include estimates for unasserted claims that the Company believes are probable of loss and reasonably estimable. The estimate of the range of reasonably possible costs is less certain than the estimates upon which the liabilities are based. To establish the upper end of a range, assumptions less favorable to the Company among the range of reasonably possible outcomes were used. As with any estimate, if facts or circumstances change, the final outcome could differ materially from these estimates. At December 31, 2019 and 2018, \$18 and \$11, respectively, has been included in “Other current liabilities” in the Consolidated Balance Sheets with the remaining amount included in “Other long-term liabilities.”

Following is a discussion of the Company’s environmental liabilities and the related assumptions at December 31, 2019:

Geismar, LA Site—The Company formerly owned a basic chemicals and polyvinyl chloride business that was taken public as Borden Chemicals and Plastics Operating Limited Partnership (“BCPOLP”) in 1987. The Company retained a 1% interest, the general partner interest and the liability for certain environmental matters after BCPOLP’s formation. Under a Settlement Agreement approved by the United States Bankruptcy Court for the District of Delaware among the Company, BCPOLP, the United States Environmental Protection Agency and the Louisiana Department of Environmental Quality, the Company agreed to perform certain of BCPOLP’s obligations for soil and groundwater contamination at BCPOLP’s Geismar, Louisiana site. The Company bears the sole responsibility for these obligations because there are no other potentially responsible parties (“PRP”) or third parties from whom the Company could seek reimbursement.

A groundwater pump and treat system to remove contaminants is operational, and natural attenuation studies are proceeding. If closure procedures and remediation systems prove to be inadequate, or if additional contamination is discovered, costs that would approach the higher end of the range of possible outcomes could result.

Due to the long-term nature of the project, the reliability of timing and the ability to estimate remediation payments, a portion of this liability was recorded at its net present value, assuming a 3% discount rate and a time period of 20 years. The range of possible outcomes is discounted in a similar manner. The undiscounted liability, which is expected to be paid over the next 20 years, is approximately \$16. Over the next five years, the Company expects to make ratable payments totaling \$5.

Superfund Sites and Offsite Landfills—The Company is currently involved in environmental remediation activities at a number of sites for which it has been notified that it is, or may be, a PRP under the United States Comprehensive Environmental Response, Compensation and Liability Act or similar state “superfund” laws. The Company anticipates approximately 50% of the estimated liability for these sites will be paid within the next five years, with the remainder over the next twenty-five years. The Company generally does not bear a significant level of responsibility for these sites, and as a result, has little control over the costs and timing of cash flows.

The Company’s ultimate liability will depend on many factors including its share of waste volume, the financial viability of other PRPs, the remediation methods and technology used, the amount of time necessary to accomplish remediation and the availability of insurance coverage. The range of possible outcomes takes into account the maturity of each project, resulting in a more narrow range as the project progresses. To estimate both its current reserves for environmental remediation at these sites and the possible range of additional costs, the Company has not assumed that it will bear the entire cost of remediation of every site to the exclusion of other known PRPs who may be jointly and severally liable. The Company has limited information to assess the viability of other PRPs and their probable contribution on a per site basis. The Company’s insurance provides very limited, if any, coverage for these environmental matters.

Sites Under Current Ownership—The Company is conducting environmental remediation at a number of locations that it currently owns, of which ten sites are no longer in operation. As the Company is performing a portion of the remediation on a voluntary basis, it has some control over the costs to be incurred and the timing of cash flows. The factors influencing the ultimate outcome include the methods of remediation elected, the conclusions and assessment of site studies remaining to be completed, and the time period required to complete the work. No other parties are responsible for remediation at these sites.

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Formerly-Owned Sites—The Company is conducting, or has been identified as a PRP in connection with, environmental remediation at a number of locations that it formerly owned and/or operated. Remediation costs at these former sites, such as those associated with our former phosphate mining and processing operations, could be material. The Company has accrued those costs for formerly-owned sites which are currently probable and reasonably estimable. One such site is the Coronet Industries, Inc. Superfund Alternative Site in Plant City, Florida. The Company signed a settlement agreement in 2016 with the current site owner and a past site owner, pursuant to which the Company paid \$10 for past remediation costs and accepted a 40% allocable share of specified future remediation costs at this site. The Company estimates its allocable share of future remediation costs to be approximately \$12. The final costs to the Company will depend on natural variations in remediation costs, including unforeseen circumstances, agency requests, new contaminants of concern and the ongoing financial viability of the other PRPs.

Monitoring Only Sites—The Company is responsible for a number of sites that require monitoring where no additional remediation is expected. The Company has established reserves for costs related to these sites. Payment of these liabilities is anticipated to occur over the next ten or more years. The ultimate cost to the Company will be influenced by fluctuations in projected monitoring periods or by findings that are different than anticipated.

Indemnifications—In connection with the acquisition of certain of the Company's operating businesses, the Company has been indemnified by the sellers against certain liabilities of the acquired businesses, including liabilities relating to both known and unknown environmental contamination arising prior to the date of the purchase. The indemnifications may be subject to certain exceptions and limitations, deductibles and indemnity caps. While it is reasonably possible that some costs could be incurred, except for those sites identified above, the Company has inadequate information to allow it to estimate a potential range of liability, if any.

Non-Environmental Legal Matters

The Company is involved in various legal proceedings in the ordinary course of business and had reserves of \$3 and \$2 at December 31, 2019 and 2018, respectively, for all non-environmental legal defense costs incurred and settlement costs that it believes are probable and estimable. At December 31, 2019 and 2018, \$2 has been included in "Other current liabilities" in the Consolidated Balance Sheets with the remaining amount included in "Other long-term liabilities."

Other Legal Matters—The Company is involved in various other product liability, commercial and employment litigation, personal injury, property damage and other legal proceedings in addition to those described above, including actions that allege harm caused by products the Company has allegedly made or used, containing silica, vinyl chloride monomer and asbestos. The Company believes it has adequate reserves and that it is not reasonably possible that a loss exceeding amounts already reserved would be material. Furthermore, the Company has insurance to cover claims of these types.

Other Commitments and Contingencies

The Company has entered into contractual agreements with third parties for the supply of site services, utilities, materials and facilities and for operation and maintenance services necessary to operate certain of the Company's facilities on a stand-alone basis. The duration of the contracts range from less than one year to 20 years, depending on the nature of services. These contracts may be terminated by either party under certain conditions as provided for in the respective agreements; generally, 90 days notice is required for short-term contracts and three years notice is required for longer-term contracts (generally those contracts in excess of five years). Contractual pricing generally includes a fixed and variable component.

In addition, the Company has entered into contractual agreements with third parties to purchase feedstocks or other services. The terms of these agreements vary from one to fifteen years and may be extended at the Company's request and are cancelable by either party as provided for in each agreement. Feedstock prices are based on market prices less negotiated volume discounts or cost input formulas. The Company is required to make minimum annual payments under these contracts as follows:

<u>Year</u>	<u>Minimum Annual Purchase Commitments</u>
2020	\$ 151
2021	109
2022	51
2023	38
2024	38
2025 and beyond	273
Total minimum payments	660
Less: Amount representing interest	(60)
Present value of minimum payments	\$ 600

13. Pension and Non-Pension Postretirement Benefit Plans

The Company sponsors defined benefit pension plans covering certain U.S. associates and certain non-U.S. associates primarily in Netherlands, Germany, Canada and Belgium. Benefits under these plans are generally based on eligible compensation and / or years of credited service. Retirement benefits in other foreign locations are primarily structured as defined contribution plans. During 2009, the Company implemented a change in its U.S. retirement benefits to shift to a defined contribution platform. Benefits under the defined benefit U.S. pension plan were frozen and the Company added an annual Company contribution to the U.S. defined contribution plan for eligible participants. Effective March 1, 2018, the Canadian pension plan was frozen to new entrants.

The Company also provides non-pension postretirement benefit plans to certain U.S. associates, to Canadian associates, to Brazilian associates and to certain associates in the Netherlands. The U.S. benefit primarily consists of a life insurance benefit for a grandfathered group of retirees, for which premiums are paid by the Company. Effective December 31, 2018, this life insurance benefit was transferred to a third party financial institution, which moved the liability from the Company to the third party. The Canadian plans provide retirees and their dependents with medical and life insurance benefits, which are supplemental benefits to the respective provincial healthcare plan in Canada. The Brazilian plan became effective in 2012 as a result of a change in certain regulations, and provides retirees that contributed towards coverage while actively employed with access to medical benefits, with the retiree being responsible for 100% of the premiums. In 2014, the plan was amended such that 100% of the premiums of active employees are paid by the Company. The Netherlands' plan provides a lump sum payment at retirement for grandfathered associates.

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The following table presents the change in benefit obligation, change in plan assets and components of funded status for the Company's defined benefit pension and non-pension postretirement benefit plans for the period July 2, 2019 through December 31, 2019, January 1, 2019 through July 1, 2019 and the year ended December 31, 2018:

	Pension Benefits					
	Successor		Predecessor			
	July 2, 2019 through December 31, 2019		January 1, 2019 through July 1, 2019		Year Ended December 31, 2018	
	U.S. Plans	Non-U.S. Plans	U.S. Plans	Non-U.S. Plans	U.S. Plans	Non-U.S. Plans
Change in Benefit Obligation						
Benefit obligation at beginning of period	\$ 228	\$ 678	\$ 216	\$ 583	\$ 238	\$ 636
Service cost	2	8	2	7	3	17
Interest cost	3	4	4	4	7	10
Actuarial losses (gains)	3	12	14	93	(12)	(38)
Foreign currency exchange rate changes	—	(8)	—	(3)	—	(32)
Benefits paid	(8)	(6)	(8)	(6)	(17)	(11)
Expenses paid from assets	(3)	—	—	—	(3)	—
Employee contributions	—	—	—	—	—	1
Benefit obligation at end of period	\$ 225	\$ 688	\$ 228	\$ 678	\$ 216	\$ 583
Change in Plan Assets						
Fair value of plan assets at beginning of period	\$ 196	\$ 470	\$ 185	\$ 404	\$ 213	\$ 412
Actual return on plan assets	10	9	19	60	(8)	(1)
Foreign currency exchange rate changes	—	(5)	—	(2)	—	(20)
Employer contributions	2	15	—	14	—	23
Benefits paid	(8)	(6)	(8)	(6)	(17)	(11)
Expenses paid from assets	(3)	—	—	—	(3)	—
Employee contributions	—	—	—	—	—	1
Fair value of plan assets at end of period	197	483	196	470	185	404
Funded status of the plan at end of period	\$ (28)	\$ (205)	\$ (32)	\$ (208)	\$ (31)	\$ (179)
Non-Pension Postretirement Benefits						
	Successor		Predecessor			
	July 2, 2019 through December 31, 2019		January 1, 2019 through July 1, 2019		Year Ended December 31, 2018	
	U.S. Plans	Non-U.S. Plans	U.S. Plans	Non-U.S. Plans	U.S. Plans	Non-U.S. Plans
	U.S. Plans	Non-U.S. Plans	U.S. Plans	Non-U.S. Plans	U.S. Plans	Non-U.S. Plans
Change in Benefit Obligation						
Benefit obligation at beginning of period	\$ —	\$ 17	\$ —	\$ 13	\$ 5	\$ 11
Interest cost	—	—	—	—	—	1
Actuarial (gains) losses	—	(4)	—	4	(1)	2
Foreign currency exchange rate changes	—	—	—	—	—	(1)
Plan settlements	—	—	—	—	(4)	—
Benefit obligation at end of period	\$ —	\$ 13	\$ —	\$ 17	\$ —	\$ 13
Change in Plan Assets						
Fair value of plan assets at beginning of period	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —
Employer contributions	—	—	—	—	5	—
Plan settlements	—	—	—	—	(5)	—
Fair value of plan assets at end of period	—	—	—	—	—	—
Funded status of the plan at end of period	\$ —	\$ (13)	\$ —	\$ (17)	\$ —	\$ (13)

		Pension Benefits					
		Successor		Predecessor			
		December 31, 2019		July 1, 2019		December 31, 2018	
		U.S. Plans	Non-U.S. Plans	U.S. Plans	Non-U.S. Plans	U.S. Plans	Non-U.S. Plans
Amounts recognized in the Consolidated Balance Sheets consists of:							
Noncurrent assets	\$	—	\$ 8	\$	— \$ 8	\$	— \$ —
Other current liabilities		—	(5)		— (6)		— (5)
Long-term pension and post employment benefit obligations		(28)	(208)		(32) (210)		(31) (174)
Accumulated other comprehensive loss		—	—		— —		— —
Net amounts recognized	\$	(28)	\$ (205)	\$	(32) \$ (208)	\$	(31) \$ (179)
Amounts recognized in Accumulated other comprehensive income consist of:							
Net prior service cost (benefit)	\$	—	\$ —	\$	— \$ —	\$	1 \$ (1)
Deferred income taxes		—	—		— —		(1) 1
Net amounts recognized	\$	—	\$ —	\$	— \$ —	\$	— \$ —
Accumulated benefit obligation	\$	225	\$ 648	\$	228 \$ 634	\$	216 \$ 548
Accumulated benefit obligation for funded plans		225	446		228 431		216 380
Pension plans with underfunded or non-funded accumulated benefit obligations:							
Aggregate projected benefit obligation	\$	225	\$ 224	\$	228 \$ 225	\$	216 \$ 187
Aggregate accumulated benefit obligation		225	216		228 217		216 181
Aggregate fair value of plan assets		197	13		196 13		185 12
Pension plans with projected benefit obligations in excess of plan assets:							
Aggregate projected benefit obligation	\$	225	\$ 287	\$	228 \$ 286	\$	216 \$ 584
Aggregate fair value of plan assets		197	74		196 71		185 403
		Non-Pension Postretirement Benefits					
		Successor		Predecessor			
		December 31, 2019		July 1, 2019		December 31, 2018	
		U.S. Plans	Non-U.S. Plans	U.S. Plans	Non-U.S. Plans	U.S. Plans	Non-U.S. Plans
Amounts recognized in the Consolidated Balance Sheets consists of:							
Noncurrent assets	\$	—	\$ —	\$	— \$ —	\$	— \$ —
Other current liabilities		—	(1)		— (1)		— (1)
Long-term pension and post employment benefit obligations		—	(12)		— (16)		— (12)
Accumulated other comprehensive loss		—	—		— —		(2) —
Net amounts recognized	\$	—	\$ (13)	\$	— \$ (17)	\$	(2) \$ (13)
Amounts recognized in Accumulated other comprehensive income consist of:							
Net prior service cost	\$	—	\$ —	\$	— \$ —	\$	— \$ 1
Deferred income taxes		—	—		— —		(2) (1)
Net amounts recognized	\$	—	\$ —	\$	— \$ —	\$	(2) \$ —

The foreign currency impact reflected in these rollforward tables are primarily for changes in the euro versus the U.S. dollar.

The Pension Protection Act of 2006 (the "2006 PPA") provides for minimum funding levels on U.S. plans, and plans not meeting the minimum funding requirement may be subject to certain restrictions.

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Following are the components of net pension and postretirement expense (benefit) recognized for the period July 2, 2019 through December 31, 2019, January 1, 2019 through July 1, 2019 and the years ended December 31, 2018 and 2017:

Pension Benefits				
U.S. Plans				
	Successor	Predecessor		
		January 1, 2019 through July 1, 2019	Year ended December 31,	
			2018	2017
Service cost	\$ 2	\$ 2	\$ 3	\$ 3
Interest cost on projected benefit obligation	3	4	7	7
Expected return on assets	(7)	(6)	(14)	(13)
Amortization of prior service cost	—	—	—	—
Unrealized actuarial loss (gain) ⁽¹⁾	—	1	11	(6)
Net (benefit) expense	\$ (2)	\$ 1	\$ 7	\$ (9)

Non-U.S. Plans				
	Successor	Predecessor		
		January 1, 2019 through July 1, 2019	Year ended December 31,	
			2018	2017
Service cost	\$ 8	\$ 7	\$ 17	\$ 16
Interest cost on projected benefit obligation	4	4	10	9
Expected return on assets	(6)	(6)	(13)	(11)
Amortization of prior service cost (benefit)	—	—	—	(1)
Unrealized actuarial loss (gain) ⁽¹⁾	9	39	(26)	1
Net expense (benefit)	\$ 15	\$ 44	\$ (12)	\$ 14

Non-Pension Postretirement Benefits				
U.S. Plans				
	Successor	Predecessor		
		January 1, 2019 through July 1, 2019	Year ended December 31,	
			2018	2017
Interest cost on projected benefit obligation	\$ —	\$ —	\$ —	\$ —
Amortization of prior service benefit	—	—	—	—
Unrealized actuarial loss (gain) ⁽¹⁾	—	—	—	(1)
Net (benefit) expense	\$ —	\$ —	\$ —	\$ (1)

Non-U.S. Plans				
	Successor	Predecessor		
		January 1, 2019 through July 1, 2019	Year ended December 31,	
			2018	2017
Interest cost on projected benefit obligation	\$ —	\$ —	\$ 1	\$ 1
Amortization of prior service benefit	—	—	—	—
Unrealized actuarial loss (gain) ⁽¹⁾	(4)	4	2	1
Net (benefit) expense	\$ (4)	\$ 4	\$ 3	\$ 2

(1) Upon the application of fresh start accounting, the Company's pension and other non-pension postretirement liabilities were remeasured as of July 1, 2019. As a result, for the period January 1, 2019 through July 1, 2019, total unrealized actuarial losses of \$44 were recorded to "Reorganization, net" in the Consolidated Statements of Operations.

Determination of actuarial assumptions

The Company's actuarial assumptions are determined based on the demographics of the population, target asset allocations for funded plans, regional economic trends, statutory requirements and other factors that could impact the benefit obligation and plan assets. For our European plans, most assumptions are set by country, as the plans within these countries have similar demographics, and are impacted by the same regional economic trends and statutory requirements.

The discount rates selected reflect the rate at which pension obligations could be effectively settled. The Company selects the discount rates based on cash flow models using the yields of high-grade corporate bonds or the local equivalent with maturities consistent with the Company's anticipated cash flow projections. The Company's pension and OPEB liabilities and related service and interest cost are calculated using a split-rate interest discounting methodology, whereby expected future cash flows related to these liabilities are discounted using multiple interest rates on a forward curve that correspond to the timing of the expected cash flows.

The expected rates of future compensation level increases are based on salary and wage trends in the chemical and other similar industries, as well as the Company's specific long-term compensation targets by country. Input is obtained from the Company's internal Human Resources group and from outside actuaries. These rates include components for wage rate inflation and merit increases.

The expected long-term rates of return on plan assets are determined based on the plans' current and projected asset mix. To determine the expected overall long-term rate of return on assets, the Company takes into account the rates on long-term debt investments held within the portfolio, as well as expected trends in the equity markets, for plans including equity securities. Peer data and historical returns are reviewed and the Company consults with its actuaries, as well as the Plan's investment advisors, to confirm that the Company's assumptions are reasonable.

The weighted average rates used to determine the benefit obligations were as follows for the period July 2, 2019 through December 31, 2019, January 1, 2019 through July 1, 2019 and the year ended December 31, 2018:

	Pension Benefits					
	Successor		Predecessor			
	July 2, 2019 through December 31, 2019		January 1, 2019 through July 1, 2019		Year Ended December 31, 2018	
	U.S. Plans	Non-U.S. Plans	U.S. Plans	Non-U.S. Plans	U.S. Plans	Non-U.S. Plans
Discount rate	3.1%	1.2%	3.3%	1.3%	4.1%	1.9%
Rate of increase in future compensation levels	—	3.4%	—	3.4%	—	2.3%

	Non-Pension Postretirement Benefits					
	Successor		Predecessor			
	July 2, 2019 through December 31, 2019		January 1, 2019 through July 1, 2019		Year Ended December 31, 2018	
	U.S. Plans ⁽¹⁾	Non-U.S. Plans	U.S. Plans ⁽¹⁾	Non-U.S. Plans	U.S. Plans	Non-U.S. Plans
Discount rate	—%	5.2%	—%	6.9%	4.1%	6.3%
Rate of increase in future compensation levels	—	—	—	—	—	—
The weighted average assumed health care cost trend rates are as follows:						
Health care cost trend rate assumed for next year	—%	5.7%	—%	6.2%	6.4%	6.2%
Rate to which the cost trend rate is assumed to decline (the ultimate trend rate)	—%	4.0%	—%	4.0%	4.5%	4.0%
Year that the rate reaches the ultimate trend rate	—	2040	—	2040	2029	2040

(1) As mentioned above as of December 31, 2018 the non-pension postretirement benefit plan offered to certain U.S. associates was transferred to a third party financial institution, which moved the liability from the Company to the third party.

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The weighted average rates used to determine net periodic pension expense (benefit) were as follows for the period July 2, 2019 through December 31, 2019, January 1, 2019 through July 1, 2019 and the years ended December 31, 2018 and 2017:

	Pension Benefits							
	U.S. Plans					Non-U.S. Plans		
	Successor	Predecessor			Successor	Predecessor		
	July 2, 2019 through December 31, 2019	January 1, 2019 through July 1, 2019	Year ended December 31,		July 2, 2019 through December 31, 2019	January 1, 2019 through July 1, 2019	Year ended December 31,	
			2018	2017			2018	2017
Discount rate	3.3%	4.1%	3.5%	3.9%	1.3%	1.9%	1.9%	1.9%
Rate of increase in future compensation levels	—	—	—	—	3.4%	2.3%	2.4%	2.4%
Expected long-term rate of return on plan assets	6.6%	6.6%	6.7%	6.7%	2.6%	3.1%	3.1%	2.9%

	Non-Pension Postretirement Benefits							
	U.S. Plans					Non-U.S. Plans		
	Successor ⁽¹⁾	Predecessor			Successor	Predecessor		
	July 2, 2019 through December 31, 2019	January 1, 2019 through July 1, 2019	Year ended December 31,		July 2, 2019 through December 31, 2019	January 1, 2019 through July 1, 2019	Year ended December 31,	
			2018	2017			2018	2017
Discount rate	—%	4.1%	3.2%	3.4%	6.9%	6.3%	5.3%	6.1%
Rate of increase in future compensation levels	—	—	—	—	—	—	—	—
Expected long-term rate of return on plan assets	—	—	—	—	—	—	—	—

(1) As mentioned above as of December 31, 2018 the non-pension postretirement benefit plan offered to certain U.S. associates was transferred to a third party financial institution, which moved the liability from the Company to the third party.

A one-percentage-point change in the assumed health care cost trend rates would change the projected benefit obligation for international non-pension postretirement benefits by approximately \$2 and service cost and interest cost by a negligible amount. The impact on U.S. plans is negligible.

Pension Investment Policies and Strategies

The Company's investment strategy for the assets of its North American defined benefit pension plans is to maximize the long-term return on plan assets using a mix of equities, fixed income and alternative investments with a prudent level of risk. Risk tolerance is established through careful consideration of plan liabilities, plan funded status and expected timing of future cash flow requirements. The investment portfolio contains a diversified blend of equity, fixed-income and alternative investments. For U.S. plans, equity investments are also diversified across U.S. and international stocks, as well as growth, value and small and large capitalization investments, while the Company's Canadian plan includes a blend of Canadian securities with U.S. and other foreign investments. The alternative investments are allocated in a diversified fund structure with exposure to a variety of hedge fund strategies. Investment risk and performance is measured and monitored on an ongoing basis through periodic investment portfolio reviews, annual liability measurements and periodic asset and liability studies. As plan funded status changes, adjustments to the diversified portfolio may be considered to reduce funded status volatility and better match the duration of plan liabilities.

The Company periodically reviews its target allocation of North American plan assets among the various asset classes. The targeted allocations are based on anticipated asset performance, discussions with investment professionals and on the projected timing of future benefit payments.

The Company observes local regulations and customs governing its European pension plans in determining asset allocations, which generally require a blended weight leaning toward more fixed income securities, including government bonds.

	Actual		
	2019	2018	Target 2019
Weighted average allocations of U.S. pension plan assets at December 31:			
Equity securities	35%	32%	35%
Debt securities	53%	55%	55%
Cash, short-term investments and other	12%	13%	10%
Total	100%	100%	100%
Weighted average allocations of non-U.S. pension plan assets at December 31:			
Equity securities	22%	19%	23%
Debt securities	75%	78%	77%
Cash, short-term investments and other	3%	3%	—%
Total	100%	100%	100%

Fair Value of Plan Assets

Fair value is the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Fair value measurement provisions establish a fair value hierarchy which requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. This guidance describes three levels of inputs that may be used to measure fair value:

- **Level 1:** Inputs are quoted prices (unadjusted) for identical assets or liabilities in active markets.
- **Level 2:** Pricing inputs are other than quoted prices in active markets included in Level 1, which are either directly or indirectly observable as of the reported date.
- **Level 3:** Unobservable inputs that are supported by little or no market activity and are developed based on the best information available in the circumstances. For example, inputs derived through extrapolation or interpolation that cannot be corroborated by observable market data.

Certain investments measured at net asset value ("NAV"), as a practical expedient for fair value, have been excluded from the fair value hierarchy.

The following table presents U.S. pension plan investments measured at fair value on a recurring basis as of December 31, 2019 and 2018:

	Fair Value Measurements Using							
	2019				2018			
	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Unobservable Inputs (Level 3)	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Unobservable Inputs (Level 3)	Total
Large cap equity funds ⁽¹⁾	\$ —	\$ 37	\$ —	\$ 37	\$ —	\$ 33	\$ —	\$ 33
Small/mid cap equity funds ⁽¹⁾	—	6	—	6	—	5	—	5
International equity funds ⁽¹⁾	—	27	—	27	—	22	—	22
Fixed income securities ⁽¹⁾	—	103	—	103	—	102	—	102
Cash equivalents ⁽²⁾	—	2	—	2	—	3	—	3
	\$ —	\$ 175	\$ —	\$ 175	\$ —	\$ 165	\$ —	\$ 165
Investments measured at fair value using net asset value as a practical expedient:								
Other funds ⁽³⁾				\$ 22				\$ 20
Total				\$ 197				\$ 185

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The following table presents non-U.S. pension plan investments measured at fair value on a recurring basis as of December 31, 2019 and 2018:

	Fair Value Measurements Using							
	2019				2018			
	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Unobserv- able Inputs (Level 3)	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Unobserv- able Inputs (Level 3)	Total
Pooled insurance products with fixed income guarantee (1)	\$ —	\$ 13	\$ —	\$ 13	\$ —	\$ 12	\$ —	\$ 12
Cash equivalents (2)	—	1	—	1	—	—	—	—
	\$ —	\$ 14	\$ —	\$ 14	\$ —	\$ 12	\$ —	\$ 12
Investments measured at fair value using net asset value as a practical expedient:								
Other international equity funds (3)				\$ 108				\$ 77
Other fixed income securities (3)				361				315
Total				\$ 483				\$ 404

(1) Level 2 equity and fixed income securities are primarily in pooled asset and mutual funds and are valued based on underlying net asset value multiplied by the number of shares held. The underlying asset values are based on observable inputs and quoted market prices.

(2) Cash equivalents represent investment in a collective short term investment fund, which is a cash sweep for uninvested cash that earns interest monthly. For these investments, book value is assumed to equal fair value due to the short duration of the investment term.

(3) Represents investments in commingled funds with exposure to a variety of hedge fund strategies, which are not publicly traded and have ongoing redemption restrictions. The Company's interest in these investments is measured at net asset value per share as a practical expedient for fair value, which is derived from the underlying asset values in these funds, only some of which represent observable inputs and quoted market prices.

Projections of Plan Contributions and Benefit Payments

The Company expects to make contributions totaling \$29 to its defined benefit pension plans in 2020.

Estimated future plan benefit payments as of December 31, 2019 are as follows:

Year	Pension Benefits		Non-Pension Postretirement Benefits	
	U.S. Plans	Non-U.S. Plans	U.S. Plans	Non-U.S. Plans
2020	\$ 18	\$ 14	\$ —	\$ 1
2021	18	13	—	—
2022	16	14	—	—
2023	16	15	—	—
2024	16	18	—	—
2025-2029	69	99	—	3

Defined Contribution Plans

The Company sponsors a number of defined contribution plans for its associates, primarily in the U.S., Canada, Europe and in the Asia-Pacific region. Full-time associates are generally eligible to participate immediately and may make pre-tax and after-tax contributions subject to plan and statutory limitations. For certain plans, the Company has the option to make contributions above the match provided in the plan based on financial performance.

As previously discussed, U.S. retirement income benefits are provided under the Company's defined contribution plan (the "401(k) Plan"). This plan allows eligible associates to make pre-tax contributions from 1% to 15% of eligible earnings for associates who meet the IRS definition of a highly compensated employee and up to 25% for all other associates up to the federal limits for qualified plans. Associates contributing to the 401(k) are eligible to receive matching contributions from the Company at 100% on contributions of up to 5% of eligible earnings. An additional matching contribution may be made if the Company achieves specified annual financial targets established at the beginning of each plan year. In addition, the Company makes an annual retirement contribution ranging from 3% to 7% of eligible compensation depending on years of benefit service. All associates who are actively employed on the last day of the year are eligible for the true-up match and annual retirement contribution, unless otherwise determined by collective bargaining agreements. Effective January 2, 2018, the 401(k) Plan added the option for eligible participants to make after-tax contributions to a Roth 401(k).

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The Company incurred expense for contributions under its defined contribution plans of \$6, \$7, \$17 and \$16 during the periods July 2, 2019 through December 31, 2019, January 1, 2019 through July 1, 2019 and the years ended December 31, 2018 and 2017, respectively.

Non-Qualified and Other Retirement Benefit Plans

The Company provides key executives in some locations with non-qualified benefit plans that provide participants with an opportunity to elect to defer compensation or to otherwise provide supplemental retirement benefits in cases where executives cannot fully participate in the defined benefit or defined contribution plans because of plan or local statutory limitations. Most of the Company's supplemental benefit plans are unfunded and benefits are paid from the general assets of the Company. The liabilities related to defined benefit supplemental benefits are included in the previously discussed defined benefit pension disclosures.

The Company maintains a non-qualified defined contribution plan (the "SERP") that provides annual employer credits to eligible U.S. associates of 5% of eligible compensation above the IRS limit for qualified plans. The Company can also make discretionary credits under the SERP; however, no participant contributions are permitted. The account credits are made annually to an unfunded phantom account, in the following calendar year. Certain executives also previously earned benefits under U.S. non-qualified executive supplemental plans that were frozen prior to 2010.

The Company's liability for these non-qualified benefit plans was \$5 and \$5 at December 31, 2019 and 2018, and is included in "Other long-term liabilities" in the Consolidated Balance Sheets.

The Company's German subsidiaries offer a government subsidized early retirement program to eligible associates called Altersteilzeit or ATZ Plans. The German government provides a subsidy in certain cases where the participant is replaced with a qualifying candidate. The Company had liabilities for these arrangements of \$2 and \$1 at December 31, 2019 and 2018, respectively. The Company incurred expense for these plans of less than \$1 for the periods July 2, 2019 through December 31, 2019, January 1, 2019 through July 1, 2019 and the years ended December 31, 2018 and 2017, respectively.

Also included in the Consolidated Balance Sheets at December 31, 2019 and 2018 are other post-employment benefit obligations relating to long-term disability and for liabilities relating to European jubilee benefit plans of \$4 and \$4, respectively.

14. Stock Based Compensation

Cancellation and Expiration of Outstanding Equity Awards

As of the Effective Date, in conjunction with the Company's emergence from Chapter 11, all outstanding unvested unit options and restricted deferred units of the Predecessor Company's parent company, TopCo, were canceled, effective immediately (See Note 3 for more information). There was no financial statement impact as a result of these cancellations.

Successor Company Stock Based Awards

The following is a summary of the new stock based compensation plans issued after Emergence and their related outstanding shares as of December 31, 2019:

Plan Name	Shares Outstanding	Plan Expiration	Vesting Terms/Status	Option Term	Number of Shares Authorized
Hexion Holdings Corporation 2019 Omnibus Incentive Plan		August 2029		10 years	7,635,389
Restricted Stock Units ("RSUs") and Performance Stock Units ("PSUs"):					
2019 Grant					
RSUs	1,034,100		Time-vest ratably over 3 years, but must be employed on July 1, 2022 in order to receive shares; Accelerated vesting upon change in control.		
PSUs	2,412,894		Performance based with market conditions: Step vest over 4 years based on a 20 consecutive trading-day volume weighted average price per share from \$20 to \$30 per share. PSUs that vest by June 30, 2022 will be settled in July 2022 and remaining PSUs that vest by June 30, 2023 will be settled in July 2023.		

Summary of Plans

On August 8, 2019, the Board of Directors of Hexion Holdings approved the Hexion Holdings Corporation 2019 Omnibus Incentive Plan (the "2019 Incentive Plan"), whereby Hexion Holdings is reserving shares of Class B Common Stock, par value \$0.01 per share, representing 10% of Hexion Holding's fully diluted equity as of the date of approval of the 2019 Incentive Plan, for issuance to employees, directors, and other key service providers in connection with stock options, restricted stock units, performance-based stock units and other equity-based awards (such as performance stock units) to be awarded from time to time as the Board determines. The restricted and performance stock units are deemed to be equivalent to one share of common stock of Hexion Holdings. The awards contain restrictions on transferability and other typical terms and conditions.

Restricted Stock Units

In September 2019, Hexion Holdings granted RSUs that time vest over three years with an aggregate grant date fair value of approximately \$16. The fair value was determined using the estimated aggregate fair value of equity per share on the grant date. Compensation cost is recognized equally over the 3 year service period. For certain retirement eligible associates, the stock-based compensation cost is accelerated according to the plan documents. Upon vesting, RSUs are settled in shares at the end of the three year vesting period. As of December 31, 2019, no RSUs have vested.

Performance Stock Units

In September 2019, Hexion Holdings granted PSUs with market conditions with an aggregate grant date fair value of approximately \$29. The fair value was estimated at the grant date using a Monte Carlo valuation method. The Monte Carlo valuation method requires the use of a range of assumptions that include the risk-free interest rates of 1.49% to 1.87% and expected volatility rates ranged from 39% to 60%. The expected life assumption is not used in the Monte Carlo valuation method, but the output of the model indicated a weighted-average expected life of 3.8 years. The PSUs step vest over four years upon the achievement of the pre-established goals by the end of the fourth year of the term. PSUs that vest by June 30, 2022 will be settled in shares in July 2022 and remaining PSUs that vest by June 30, 2023 will be settled in shares by July 2023. As of December 31, 2019, the market conditions have not been met and no PSUs have vested. Compensation cost will be recognized over 3.8 years and adjusted accordingly as vesting conditions are met. For certain retirement eligible associates, the recognition of stock-based compensation cost is accelerated according to the plan documents.

Financial Statement Impact

Although the 2019 Incentive Plan was issued by Hexion Holdings, the underlying share-based compensation cost represents compensation costs paid for by Hexion Holdings on Hexion's behalf, as a result of the employees' service to Hexion. The compensation costs for RSUs and PSUs are recorded over the requisite service period on a graded-vesting basis and over the derived service period, respectively.

Share-based compensation costs are recognized, net of actual forfeitures, over the requisite service period on a graded-vesting basis for RSUs. Stock-based compensation cost is recognized, net of forfeitures, over the requisite service period on a graded-vesting basis over the derived service period for PSUs. The Company adjusts compensation expense periodically for forfeitures. Stock based compensation costs are included in "Other non-cash adjustments" on the Consolidated Statements of Cash Flows.

The Company recognized \$8 share-based compensation costs for the period from July 2, 2019 through December 31, 2019 and there were no share-based compensation costs for the period from January 1, 2019 through July 1, 2019, and year ended December 31, 2018, respectively. For the year ended December 31, 2017 the Company recognized stock-based compensation costs of less than \$1. The amounts are included in "Selling, general and administrative expense" in the Consolidated Statements of Operations.

As of December 31, 2019 the Company has 1,034,100 shares of nonvested RSUs with a weighted average grant date fair value of \$15.37 per share and 2,412,894 shares of nonvested PSUs with a weighted average grant date fair value of \$11.97 per share. As of December 31, 2019 there were no restricted or performance share units forfeited.

15. Dispositions

ATG

On January 8, 2018, the Company completed the sale of its Additives Technology Group business ("ATG") to MÜNZING CHEMIE GmbH. ATG was previously included within the Company's Forest Products Resins segment and includes manufacturing sites located in Somersby, Australia and Sungai Petani, Malaysia. The ATG business produced a range of specialty chemical materials for the engineered wood, paper impregnation and laminating industries, including catalysts, release agents and wetting agents.

The Company received gross cash consideration for the ATG business in the amount of \$49, which was used for general corporate purposes. The Company recorded a gain on this disposition of \$44 which is included in "Gain on dispositions" in the Predecessor Company's Consolidated Statements of Operations for the year ended December 31, 2018.

16. Income Taxes

On December 22, 2017, the United States enacted tax reform legislation that included a broad range of business tax provisions, including but not limited to a reduction in the U.S. federal tax rate from 35% to 21% as well as provisions that limit or eliminate various deductions or credits. The legislation also causes U.S. expenses, such as interest, general administrative, and certain executive officer compensation expenses, to be taxed and imposes a new tax on U.S. cross-border payments.

The 2017 provision for income taxes included a provisional one-time charge of \$65 for the transition tax on accumulated foreign earnings and profits, which resulted in an associated one-time reduction estimated at \$185 in the Company's net operating loss carryforward. Upon filing the 2017 income tax return, the final transition tax calculated was \$64 and the related net operating loss utilized was \$181.

As a result of U.S. tax reform the Company recognized the earnings of non-U.S. operations in its 2017 U.S. consolidated income tax return under the transition tax. For the year ended December 31, 2017, the Company accrued the incremental tax expense expected to be incurred upon the repatriation of the previously taxed earnings.

During 2017, the Company recognized income tax expense of \$18, primarily as a result of income from certain foreign operations. Losses in the United States created a deferred income tax benefit which was completely offset by an increase to the valuation allowance. The Company incurred a provisional income tax expense of \$167 associated with revaluing its net U.S. deferred tax attributes to reflect the new U.S. corporate tax rate of 21%, as well as an additional \$65 provisional income tax expense associated with the estimated transition tax. The Company's valuation allowance was reduced by \$234 as a result of the impact Tax Reform had on reducing its net deferred tax assets.

Due to the previously enacted U.S. tax rate change, estimated balances as of December 31, 2017 represented timing differences, which changed when those estimates were finalized with the filing of the 2017 income tax return. The Company updated its provisional estimate of the transition tax and assessed the impact on its valuation allowance during 2018.

During 2018, the Company recognized income tax expense of \$40, primarily as a result of income from certain foreign operations. In the United States, as a result of Tax Reform, disallowed interest expense resulted in current year taxable income which utilized a net operating loss carryforward. The disallowed interest expense carryforward of \$283 generated a deferred tax asset. The decrease in the valuation allowance due to the net operating loss utilization was offset by an increase in the valuation allowance recorded on the interest expense carryforward deferred tax asset. Tax Reform also resulted in the inclusion of Global Intangible Low Tax Income ("GILTI") of \$21, which was fully offset by our net operating loss. This further reduced our valuation allowance.

Additionally, certain provisions of Tax Reform were not effective until 2018. During 2018, the Company evaluated and recorded the impact of these provisions in the financial statements and the Company has made its accounting policy elections with respect to these items. The Company elected to account for GILTI as a current period expense in the reporting period in which the tax is incurred.

During the Predecessor period January 1, 2019 through July 1, 2019, the Predecessor Company recorded income tax expense of \$40 for reorganization adjustments, primarily consisting of tax expense of \$50 for the gain recognized between fair value and tax basis (the gain in Predecessor Company will be substantially offset by the Predecessor Company's tax attributes, including net operating losses and previously disallowed interest expense). A tax benefit of \$10 was recorded for the removal of a valuation allowance for certain foreign jurisdictions. Pursuant to the Plan, the Successor Company is obligated to indemnify the Predecessor Company for any tax related liabilities. The Predecessor Company recorded income tax expense of \$222 in the Predecessor period, primarily related to the increase in deferred tax liabilities resulting from fresh start accounting.

The Predecessor Company's U.S. net operating loss carryforward of \$1,053 and certain state net operating loss carryforwards, along with other tax attributes, have been utilized or forfeited as a result of the taxable gain realized upon Emergence. Certain foreign net operating losses and other carryforwards of the Predecessor Company were forfeited upon Emergence.

Upon the Emergence, the Successor Company applied fresh start accounting (see Note 4 for more information regarding fresh start accounting) and therefore the deferred tax assets and liabilities were adjusted based on the revised U.S. GAAP financial statements. As a result of the step-up in U.S. GAAP basis in the Successor Company's foreign assets without a corresponding step-up in the tax basis of the foreign assets, the Successor Company's deferred tax liability increased. An Internal Revenue Code §338(h)(10) election is expected to be made to treat the Emergence as an asset sale for U.S. income tax purposes. As a result, the Emergence is expected to be treated as a deemed sale of assets of the Predecessor Company while the Successor Company receives a step-up in U.S. tax basis to fair value. The Successor Company anticipates electing bonus depreciation (as currently permitted under Tax Reform) on the stepped-up U.S. eligible fixed assets. The Successor Company also anticipates amortizing the stepped-up basis of intangibles over a 15-year period and the Successor Company's depreciation and amortization expense is expected to generate a U.S. net operating loss for the tax year ended December 31, 2019. The U.S. net operating loss will be carried forward indefinitely but will be subject to an 80% limitation on U.S. taxable income.

During the Successor period July 2, 2019 through December 31, 2019, the Successor Company recognized income tax benefit of \$9, primarily as a result of losses from certain foreign operations of which the deferred tax asset created is not offset by a valuation allowance. Losses in the United States created a deferred tax asset which was completely offset by an increase to the valuation allowance. The disallowed interest expense carryforward of \$34 generated a deferred tax asset which offset the decrease in the valuation allowance on the net operating loss deferred tax asset. The Successor Company anticipates a GILTI inclusion of \$15, which will be fully offset by our net operating loss and further reduces our valuation allowance. As previously discussed above, the Successor Company anticipates electing bonus depreciation.

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Income tax expense detail for the Company for the Successor period July 2, 2019 through December 31, 2019, and the Predecessor periods January 1, 2019 through July 1, 2019 and the years ended December 31, 2018 and 2017 is as follows:

	Successor	Predecessor		
	July 2, 2019 through December 31, 2019	January 1, 2019 through July 1, 2019	Year Ended December 31,	
			2018	2017
Current:				
Federal	\$ —	\$ 38	\$ —	\$ —
State and local	3	13	2	2
Foreign	—	14	26	19
Total current	3	65	28	21
Deferred:				
Federal	11	(1)	1	(5)
State and local	1	—	—	—
Foreign	(24)	158	11	2
Total deferred	(12)	157	12	(3)
Income tax (benefit) expense	\$ (9)	\$ 222	\$ 40	\$ 18

A reconciliation of the Company's combined differences between income taxes computed at the federal statutory tax rate of 21% and the provisions for income taxes for the Successor period July 2, 2019 through December 31, 2019, the Predecessor periods January 1, 2019 through July 1, 2019 and the year ended December 31, 2018 and the federal statutory tax rate of 35% and provision for income taxes for the year ended December 31, 2017 is as follows:

	Successor	Predecessor		
	July 2, 2019 through December 31, 2019	January 1, 2019 through July 1, 2019	Year Ended December 31,	
			2018	2017
Income tax (benefit) expense computed at federal statutory tax rate	\$ (21)	\$ 654	\$ (26)	\$ (77)
State tax (benefit) expense, net of federal benefit	(2)	10	1	—
Foreign tax rate (benefit) expense differential	(1)	2	9	(2)
Foreign source income (loss) subject to U.S. taxation	3	1	2	(45)
Non-deductible losses and other expenses	—	14	10	20
Increase (decrease) in the taxes due to changes in valuation allowance	20	(427)	25	(129)
Additional expense on foreign unrepatriated earnings	—	—	1	—
Additional expense for uncertain tax positions	1	46	18	5
Tax recognized in other comprehensive income	(1)	—	—	(3)
Changes in enacted tax laws and tax rates	—	—	—	167
Transition tax expense	—	—	—	65
Tax benefit for fresh start accounting and reorganization adjustments	—	(87)	—	—
Other (increase) decrease of deferred tax assets	(8)	9	—	17
Income tax (benefit) expense	\$ (9)	\$ 222	\$ 40	\$ 18

The domestic and foreign components of the Company's loss before income taxes for the Successor period July 2, 2019 through December 31, 2019, the Predecessor periods January 1, 2019 through July 1, 2019 and the years ended December 31, 2018 and 2017 is as follows:

	Successor	Predecessor		
	July 2, 2019 through December 31, 2019	January 1, 2019 through July 1, 2019	Year Ended December 31,	
			2018	2017
Domestic	\$ (44)	\$ 2,892	\$ (195)	\$ (143)
Foreign	(55)	223	69	(77)
Total	\$ (99)	\$ 3,115	\$ (126)	\$ (220)

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The tax effects of significant temporary differences, net operating losses, interest expense limitation, and credit carryforwards, which comprise the Company's deferred tax assets and liabilities at December 31, 2019 and 2018 are as follows:

	Successor	Predecessor
	2019	2018
Assets:		
Non-pension post-employment	\$ 4	\$ 5
Accrued and other expenses	100	56
Property, plant and equipment	4	4
Loss, expense, and credit carryforwards	165	488
Intangible assets	—	5
Pension and postretirement benefit liabilities	47	37
Gross deferred tax assets	320	595
Valuation allowance	(140)	(547)
Net deferred tax asset	180	48
Liabilities:		
Property, plant and equipment	(263)	(47)
Unrepatriated earnings of foreign subsidiaries	(10)	(10)
Intangible assets	(65)	(6)
Gross deferred tax liabilities	(338)	(63)
Net deferred tax liability	\$ (158)	\$ (15)

The following table summarizes the presentation of the Company's net deferred tax liability in the Consolidated Balance Sheets at December 31, 2019 and 2018:

	Successor	Predecessor
	2019	2018
Assets:		
Long-term deferred income taxes	\$ 6	\$ —
Liabilities:		
Long-term deferred income taxes	(164)	(15)
Net deferred tax liability	\$ (158)	\$ (15)

Hexion Holdings, and its direct subsidiary Hexion Intermediate Holding 1, Inc. and its direct subsidiary Hexion Intermediate Holding 2, Inc. (the "Eligible Subsidiaries") are not members of the registrant. Hexion Holdings and its Eligible Subsidiaries file a consolidated U.S. Federal income tax return. Therefore, the Company can utilize Hexion Holdings and its Eligible Subsidiaries' tax attributes or vice versa.

As of December 31, 2019, the Company had a \$140 valuation allowance against its net deferred tax assets that management believes, more likely than not, will not be realized. The Company's deferred tax assets include federal, state and foreign net operating loss carryforwards as well as an interest expense carryforward. The federal net operating loss carryforwards available are \$319, which excludes the cumulative income from Hexion Holdings and its Eligible Subsidiaries, as described above. The federal net operating loss will be carried forward indefinitely but will be subject to an 80% limitation on U.S. taxable income. The interest expense carryforward available is \$34. A valuation allowance has been recorded against these loss and expense carryforwards. The Company has provided a valuation allowance against its state deferred tax assets, primarily related to state net operating loss carryforwards of \$6. A valuation allowance of \$58 has been recorded against a portion of foreign net operating loss carryforwards, primarily in the Netherlands.

The Company continues to not assert indefinite reinvestment of undistributed earnings of its foreign subsidiaries outside of the United States. Accordingly, a related deferred tax liability of \$10 is recorded.

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The following table summarizes the changes in the valuation allowance for the Successor period July 2, 2019 through December 31, 2019, the Predecessor periods January 1, 2019 through July 1, 2019 and the years ended December 31, 2018 and 2017:

	Balance at Beginning of Period	Changes in Related Gross Deferred Tax Assets/Liabilities	Charge	Balance at End of Period
Valuation allowance on Deferred tax assets:				
Predecessor				
Year ended December 31, 2017	\$ 651	\$ —	\$ (129)	\$ 522
Year ended December 31, 2018	522	—	25	547
January 1, 2019 through July 1, 2019	547	—	(427)	120
Successor				
July 2, 2019 through December 31, 2019	120	—	20	140

For 2019, previous and current losses in the U.S. and in certain foreign operations for recent periods continue to provide sufficient negative evidence requiring a valuation allowance against the net federal, state, and certain foreign deferred tax assets.

Examination of Tax Returns

The Company conducts business globally and, as a result, certain of its subsidiaries file income tax returns in the U.S. federal jurisdiction and various state and foreign jurisdictions. In the normal course of business, the Company is subject to examinations by taxing authorities throughout the world, including major jurisdictions such as the United States, Brazil, Canada, China, Germany, Italy, Netherlands and the United Kingdom.

With minor exceptions, the Company's closed tax years for major jurisdictions are years prior to: 2015 for United States, 2012 for Brazil, 2010 for Canada, 2014 for China, 2015 for Germany, 2016 for Italy, 2010 for Netherlands and 2016 for the United Kingdom.

The Company continuously reviews issues that are raised from ongoing examinations and open tax years to evaluate the adequacy of its liabilities. As the various taxing authorities continue with their audit/examination process, the Company will adjust its reserves accordingly to reflect the current status and settlements.

Unrecognized Tax Benefits

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

	Successor	Predecessor	
	July 2, 2019 through December 31, 2019	January 1, 2019 through July 1, 2019	Year Ended December 31, 2018
Balance at beginning of period	\$ 133	\$ 94	\$ 80
Additions based on tax positions related to the current year	2	41	4
Additions for tax positions of prior years	—	5	16
Reductions for tax positions of prior years	(3)	(6)	(2)
Settlements	(4)	—	—
Foreign currency translation	2	(1)	(4)
Balance at end of period	\$ 130	\$ 133	\$ 94

During the period July 2, 2019 through December 31, 2019, the Successor Company decreased the amount of its unrecognized tax benefits, including its accrual for interest and penalties, by \$1, primarily as a result of decreases in the unrecognized tax benefit from negotiations with foreign jurisdictions, lapses of statute of limitations and settlements, offset by increases of unrecognized tax benefits for various intercompany transactions. During the periods July 2, 2019 through December 31, 2019, January 1, 2019 through July 1, 2019 and the years ended December 31, 2018 and 2017 the Company recognized approximately \$2, \$3, \$3 and \$5, respectively, in interest and penalties. The Company had approximately \$56, \$54, and \$51 accrued for the payment of interest and penalties at December 31, 2019, July 1, 2019, and December 31, 2018, respectively.

\$130 of unrecognized tax benefits, if recognized, would affect the effective tax rate; however, a portion of the unrecognized tax benefit would be in the form of a net operating loss carryforward, which would be subject to a full valuation allowance. The Company anticipates recognizing less than \$22 of the total amount of unrecognized tax benefits within the next 12 months as a result of lapses of statute of limitations, negotiations with foreign jurisdictions, settlements, and completion of audit examinations.

17. Summarized Financial Information of Unconsolidated Affiliates

Summarized financial information of the Company's unconsolidated affiliates, which are listed below, as of December 31, 2019 and 2018 and for the years ended December 31, 2019, 2018, and 2017 is as follows:

- Hexion Shchekinoazot Holding B.V.
- Momentive UV Coatings (Shanghai) Co., Ltd
- Sanwei Hexion Company Limited
- Hexion Australia Pty Ltd
- MicroBlend Columbia S.A.S

	Successor December 31, 2019	Predecessor December 31, 2018
Current assets	\$ 41	\$ 48
Non-current assets	7	15
Current liabilities	21	20
Non-current liabilities	12	11

	Successor July 2, 2019 through December 31, 2019	Predecessor January 1, 2019 through July 1, 2019	Year Ended December 31, 2018 2017	
Net sales	\$ 46	\$ 57	\$ 129	\$ 129
Gross profit	11	14	29	30
Pre-tax income	4	6	11	10
Net income	3	4	7	7

18. Segment and Geographic Information

The Company's business segments are based on the products that the Company offers and the markets that it serves. At December 31, 2019, the Company had three reportable segments: Forest Products Resins; Epoxy, Phenolic and Coating Resins; and Corporate and Other. A summary of the major products and items associated with the Company's reportable segments are as follows:

- **Forest Products Resins:** forest products resins and formaldehyde applications
- **Epoxy, Phenolic and Coating Resins:** epoxy specialty resins, phenolic encapsulated substrates, versatic acids and derivatives, basic epoxy resins and intermediates, phenolic specialty resins and molding compounds
- **Corporate and Other:** primarily corporate general and administrative expenses that are not allocated to the other segments, such as shared service and administrative functions, foreign exchange gains and losses and legacy company costs.

Subsequent event

Realignment of Reportable Segments in 2020

As part of the Company's continuing efforts to drive growth and greater operating efficiencies, in January 2020, the Company changed its reporting segments to align around its two growth platforms: adhesives; and coatings and composites which consist of the following businesses:

- **Adhesives:** these businesses focus on the global adhesives market. They include the Company's global wood adhesives business, including: forest products resin assets in North America, Latin America, Europe, Australia and New Zealand; global formaldehyde; and the global phenolic specialty resins business, which now also includes the oilfield technologies group.
- **Coatings and Composites:** these businesses focus on the global coatings and composites market. They include the Company's base and specialty epoxy resins and Versatic™ Acids and Derivatives businesses.

The Company modified its internal reporting processes and systems to accommodate the new structure and the change to segment reporting is effective starting in the first quarter of 2020. Corporate and Other will continue to be a reportable segment.

Reportable Segments

Following are net sales and Segment EBITDA (earnings before interest, income taxes, depreciation and amortization) by reportable segment. Segment EBITDA is defined as EBITDA adjusted for certain non-cash items and other income and expenses. Segment EBITDA is the primary performance measure used by the Company's senior management, the chief operating decision-maker and the board of directors to evaluate operating results and allocate capital resources among segments. Segment EBITDA is also the profitability measure used to set management and executive incentive compensation goals.

Net Sales⁽¹⁾:

	Successor July 2, 2019 through December 31, 2019	Predecessor	
		January 1, 2019 through July 1, 2019	Year Ended December 31, 2018 2017
Forest Products Resins	\$ 710	\$ 775	\$ 1,682 \$ 1,539
Epoxy, Phenolic and Coating Resins	886	1,003	2,115 2,052
Total	\$ 1,596	\$ 1,778	\$ 3,797 \$ 3,591

(1) Intersegment sales are not significant and, as such, are eliminated within the selling segment.

Segment EBITDA:

	Successor July 2, 2019 through December 31, 2019	Predecessor	
		January 1, 2019 through July 1, 2019	Year Ended December 31, 2018 2017
Forest Products Resins ⁽¹⁾	\$ 129	\$ 152	\$ 285 \$ 257
Epoxy, Phenolic and Coating Resins ⁽²⁾	75	111	226 174
Corporate and Other	(37)	(30)	(71) (66)
Total	\$ 167	\$ 233	\$ 440 \$ 365

(1) Included in the Forest Products Resins Segment EBITDA are "Earnings from unconsolidated entities, net of taxes" of \$1 for all the periods July 2, 2019 through December 31, 2019, January 1, 2019 through July 1, 2019 and the years ended December 31, 2018 and 2017, respectively.

(2) Included in the Epoxy, Phenolic and Coating Resins Segment EBITDA are "Earnings from unconsolidated entities, net of taxes" of \$1, \$1, \$2 and \$3 for the period July 2, 2019 through December 31, 2019, January 1, 2019 through July 1, 2019 and the years ended December 31, 2018 and 2017, respectively.

Depreciation and Amortization Expense:

	Successor July 2, 2019 through December 31, 2019	Predecessor	
		January 1, 2019 through July 1, 2019	Year Ended December 31, 2018 2017
Forest Products Resins ⁽¹⁾	\$ 51	\$ 20	\$ 44 \$ 40
Epoxy, Phenolic and Coating Resins ⁽²⁾	57	30	69 85
Corporate and Other	2	2	4 4
Total	\$ 110	\$ 52	\$ 117 \$ 129

(1) Includes accelerated depreciation of \$4 for the year ended December 31, 2018.

(2) Includes accelerated depreciation of \$14 for the year ended December 31, 2017.

Total Assets:

	Successor December 31, 2019	Predecessor December 31, 2018
Forest Products Resins	\$ 1,986	\$ 779
Epoxy, Phenolic and Coating Resins	1,733	1,031
Corporate and Other	427	151
Total	\$ 4,146	\$ 1,961

Capital Expenditures⁽¹⁾:

	Successor July 2, 2019 through December 31, 2019	Predecessor		
		January 1, 2019 through July 1, 2019	Year Ended December 31,	
			2018	2017
Forest Products Resins	\$ 20	\$ 12	\$ 31	\$ 40
Epoxy, Phenolic and Coating Resins	34	30	56	73
Corporate and Other	4	1	3	5
Total	\$ 58	\$ 43	\$ 90	\$ 118

(1) Includes capitalized interest costs that are incurred during the construction of property and equipment.

Reconciliation of Net Loss to Segment EBITDA:

	Successor July 2, 2019 through December 31, 2019	Predecessor		
		January 1, 2019 through July 1, 2019	Year Ended December 31,	
			2018	2017
Reconciliation:				
Net (loss) income attributable to Hexion Inc.	\$ (89)	\$ 2,894	\$ (162)	\$ (234)
Net (income) loss attributable to noncontrolling interest	(1)	(1)	1	—
Net (loss) income	(88)	2,895	(163)	(234)
Income tax (benefit) expense	(9)	222	40	18
Interest expense, net	55	89	365	329
Depreciation and amortization ⁽¹⁾	110	52	117	129
EBITDA	68	3,258	359	242
Adjustments to arrive at Segment EBITDA:				
Asset impairments and write-downs	\$ —	\$ —	\$ 32	\$ 13
Business realignment costs	24	15	29	52
Realized and unrealized foreign currency losses (gains)	5	(6)	27	3
Gain on dispositions	—	—	(44)	—
Loss on extinguishment of debt	—	—	—	3
Unrealized losses (gains) on pension and OPEB plan liabilities	5	—	(13)	(4)
Transaction costs	11	26	13	8
Reorganization items, net ⁽²⁾	—	(3,076)	—	—
Non-cash impact of inventory step-up ⁽³⁾	29	(29)	—	—
Other non-cash items ⁽⁴⁾	10	9	14	16
Other ⁽⁵⁾	15	36	23	32
Total adjustments	99	(3,025)	81	123
Segment EBITDA	\$ 167	\$ 233	\$ 440	\$ 365
Segment EBITDA:				
Forest Products Resins	\$ 129	\$ 152	\$ 285	\$ 257
Epoxy, Phenolic and Coating Resins	75	111	226	174
Corporate and Other	(37)	(30)	(71)	(66)
Total	\$ 167	\$ 233	\$ 440	\$ 365

- (1) For the years ended December 31, 2018 and 2017 accelerated depreciation of \$4 and \$14, respectively, has been included in "Depreciation and amortization."
- (2) Excludes the "Non-cash impact of inventory step-up" discussed below.
- (3) Represents \$29 of non-cash expense related to the step up of finished goods inventory on July 1, 2019 as part of fresh start accounting that was expensed in the successor period upon the sale of the inventory (see Note 4).
- (4) Primarily include expenses for retention programs, fixed asset disposals and share-based compensation costs.
- (5) Includes \$18 of Segment EBITDA impact related to deferred revenue that was accelerated on July 1, 2019 as part of Fresh Start accounting.

Adjustments to Arrive at Segment EBITDA

Not included in Segment EBITDA are certain non-cash items and other income and expenses.

Reorganization items, net for the Predecessor period from January 1, 2019 through July 1, 2019 represent incremental costs incurred directly as a result of the Company's Chapter 11 proceedings after the date of filing, gains on the settlement of liabilities under the Plan and the net impact of fresh start accounting adjustments. See Note 5 for more information.

For the Successor period from July 2, 2019 through December 31, 2019, transaction costs primarily included \$6 of certain professional fees and other expenses related to the Company's Chapter 11 proceedings incurred post-emergence, as well as certain professional fees related to strategic projects. For the Predecessor period from January 1, 2019 through July 1, 2019, transaction costs primarily included \$23 of certain professional fees and other expenses related to the Company's Chapter 11 proceedings incurred prior to the date of filing. For the years ended December 31, 2018 and 2017, transaction costs included certain professional fees related to strategic projects.

For the period July 2, 2019 through December 31, 2019, January 1, 2019 through July 1, 2019 and the year ended December 31, 2018, business realignment costs primarily included costs related to certain in-process facility rationalizations and cost reduction programs. Business realignment costs for 2017 primarily included costs related to the rationalization at our Norco, LA manufacturing facility and costs related to certain in-process cost reduction programs.

For the Successor period from July 2, 2019 through December 31, 2019, items classified as "Other" primarily included IT outage costs and expenses related to legacy liabilities. For the Predecessor period from January 1, 2019 through July 1, 2019 and for the years ended December 31, 2018 and 2017, items classified as "Other" primarily included management fees and expenses related to legacy liabilities.

Geographic Information

Net Sales⁽¹⁾:

	Successor	Predecessor		
	July 2, 2019 through December 31, 2019	January 1, 2019 through July 1, 2019	Year Ended December 31,	
			2018	2017
United States	\$ 703	\$ 789	\$ 1,662	\$ 1,513
Netherlands	231	298	628	595
Canada	155	155	365	344
China	121	121	230	270
Germany	87	91	201	198
Brazil	83	91	194	176
Other international	216	233	517	495
Total	\$ 1,596	\$ 1,778	\$ 3,797	\$ 3,591

(1) Sales are attributed to the country in which the individual business locations reside.

Following is revenue by reportable segment. Product sales within each reportable segment share economically similar risks. These risks include general economic and industrial conditions, competitive pricing pressures and the Company's ability to pass on fluctuations in raw material prices to its customers. A substantial number of the Company's raw material inputs are petroleum-based and their prices fluctuate with the price of oil. Due to differing regional industrial and economic conditions, the geographic distribution of revenue may impact the amount, timing and uncertainty of revenue and cash flows from contracts with customers.

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Following is net sales by reportable segment disaggregated by geographic region⁽¹⁾:

	Successor			Predecessor		
	July 2, 2019 through December 31, 2019			January 1, 2019 through July 1, 2019		
	Forest Products Resins	Epoxy, Phenolic and Coating Resins	Total	Forest Products Resins	Epoxy, Phenolic and Coating Resins	Total
North America	\$ 477	\$ 381	\$ 858	\$ 519	\$ 425	\$ 944
Europe	82	352	434	90	431	521
Asia Pacific	56	153	209	63	147	210
Latin America	95	—	95	103	—	103
Total	\$ 710	\$ 886	\$ 1,596	\$ 775	\$ 1,003	\$ 1,778

	Successor			Predecessor		
	Year Ended December 31, 2018			Year Ended December 31, 2017		
	Forest Products Resins	Epoxy, Phenolic and Coating Resins	Total	Forest Products Resins	Epoxy, Phenolic and Coating Resins	Total
North America	\$ 1,125	\$ 902	\$ 2,027	\$ 1,020	\$ 837	\$ 1,857
Europe	203	920	1,123	194	882	1,076
Asia Pacific	135	290	425	130	325	455
Latin America	219	3	222	195	8	203
Total	\$ 1,682	\$ 2,115	\$ 3,797	\$ 1,539	\$ 2,052	\$ 3,591

(1) Intersegment sales are not significant and, as such, are eliminated within the selling segment.

Long-Lived Assets:

	Successor	Predecessor
	December 31, 2019	December 31, 2018
United States	\$ 1,785	\$ 435
Germany	164	124
Netherlands	543	120
Brazil	105	62
Canada	116	61
Other international	231	175
Total	\$ 2,944	\$ 977

19. Changes in Accumulated Other Comprehensive Loss

Following is a summary of changes in "Accumulated other comprehensive loss" for the Successor period July 2, 2019 through December 31, 2019 and the Predecessor period of January 1, 2019 through July 1, 2019 and the year ended December 31, 2018:

	Defined Benefit Pension and Postretirement Plans	Foreign Currency Translation Adjustments	Cash Flow Hedge	Total
Predecessor				
Balance at December 31, 2017	\$ 1	\$ (9)	\$ —	\$ (8)
Change in value	(2)	(8)	—	(10)
Balance at December 31, 2018	\$ (1)	\$ (17)	\$ —	\$ (18)
Change in value	—	(8)	—	(8)
Elimination of Predecessor Company accumulated other comprehensive loss	1	25	—	26
Balance at July 1, 2019	\$ —	\$ —	\$ —	\$ —
Successor				
Balance at July 2, 2019	\$ —	\$ —	\$ —	\$ —
Change in value	—	(3)	2	(1)
Balance at December 31, 2019	\$ —	\$ (3)	\$ 2	\$ (1)

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of Hexion Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheet of Hexion Inc. and its subsidiaries (Successor) (the "Company") as of December 31, 2019, and the related consolidated statements of operations, comprehensive (loss) income, equity (deficit) and cash flows for the period from July 2, 2019 to December 31, 2019, including the related notes and schedule of valuation and qualifying accounts for the period from July 2, 2019 to December 31, 2019 appearing under Item 8 (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and the results of its operations and its cash flows for the period from July 2, 2019 to December 31, 2019 in conformity with accounting principles generally accepted in the United States of America.

Basis of Accounting

As discussed in Notes 1 and 3 to the consolidated financial statements, the United States Bankruptcy Court for the district of Delaware confirmed the Company's Second Amended Joint Chapter 11 Plan of Reorganization of Hexion Holdings LLC and its Debtor Affiliates under Chapter 11 (the "plan") on June 25, 2019. Confirmation of the plan resulted in the discharge of all claims against the Company that arose before April 1, 2019 and terminates all rights and interests of equity security holders as provided for in the plan. The plan was substantially consummated on July 1, 2019 and the Company emerged from bankruptcy. In connection with its emergence from bankruptcy, the Company adopted fresh start accounting as of July 1, 2019.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's consolidated financial statements based on our audit. 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 audit of these consolidated financial statements in accordance with the standards of the PCAOB and in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audit we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audit 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 audit 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. We believe that our audit provides a reasonable basis for our opinion.

/s/ PricewaterhouseCoopers LLP
Columbus, Ohio
March 3, 2020

We have served as the Company's auditor since 2005.

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of Hexion Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheet of Hexion Inc. and its subsidiaries (Predecessor) (the "Company") as of December 31, 2018 and the related consolidated statements of operations, comprehensive (loss) income, equity (deficit) and cash flows for the period from January 1, 2019 to July 1, 2019 and for each of the two years in the period ended December 31, 2018, including the related notes and schedule of valuation and qualifying accounts for the period from January 1, 2019 to July 1, 2019 and for each of the two years in the period ended December 31, 2018 appearing under Item 8 (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2018, and the results of its operations and its cash flows for the period from January 1, 2019 to July 1, 2019, and for each of the two years in the period ended December 31, 2018 in conformity with accounting principles generally accepted in the United States of America.

Basis of Accounting

As discussed in Notes 1 and 3 to the consolidated financial statements, the Company, Hexion Holdings LLC, Hexion LLC and certain of the Company's subsidiaries filed voluntary petitions on April 1, 2019 with the United States Bankruptcy Court for the district of Delaware for reorganization under the provisions of Chapter 11 of the Bankruptcy Code. The Company's Second Amended Joint Chapter 11 Plan of Reorganization of Hexion Holdings LLC and its Debtor Affiliates under Chapter 11 was substantially consummated on July 1, 2019 and the Company emerged from bankruptcy. In connection with its emergence from bankruptcy, the Company adopted fresh start accounting.

Changes in Accounting Principles

As discussed in Note 2 to the consolidated financial statements, the Company changed the manner in which it accounts for revenues from contracts with customers in 2018 and the manner in which it accounts for leases in 2019.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's consolidated financial statements 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 of these consolidated financial statements in accordance with the standards of the PCAOB and in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits 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. We believe that our audits provide a reasonable basis for our opinion.

/s/ PricewaterhouseCoopers LLP
Columbus, Ohio
March 3, 2020

We have served as the Company's auditor since 2005.

Schedule II – Valuation and Qualifying Accounts

Description	Balance at Beginning of Period	Additions		Deductions ⁽²⁾	Balance at End of Period
		Charged to cost and expenses ⁽¹⁾	Charged to other accounts		
Allowance for Doubtful Accounts:					
Successor					
Period from July 2, 2019 through December 31, 2019	\$ —	\$ 5	\$ —	\$ (2)	\$ 3
Predecessor					
Period from January 1, 2019 through July 1, 2019	\$ 16	\$ —	\$ —	\$ (16)	\$ —
Year Ended December 31, 2018	19	—	—	(3)	16
Year Ended December 31, 2017	17	3	—	(1)	19

(1) Includes the impact of foreign currency translation.

(2) Deductions for the period January 1, 2019 through July 1, 2019 include the elimination of the predecessor allowance for doubtful accounts in conjunction with the application of fresh start accounting as described in Note 4 in Item 8 of Part II of this Annual Report on Form 10-K.

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 of the end of the period covered by this Annual Report on Form 10-K, we, under the supervision and with the participation of our Disclosure Committee and our management, including our President and Chief Executive Officer and our Executive Vice President and Chief Financial Officer, carried out an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures as such term is defined in Exchange Act Rules 13a-15(e) and 15d-15(e). Based on that evaluation, our President and Chief Executive Officer, and Executive Vice President and Chief Financial Officer concluded that our disclosure controls and procedures were effective as of December 31, 2019.

Management's Annual Report on Internal Control Over Financial Reporting

We are responsible for establishing and maintaining adequate internal control over financial reporting. 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 pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; 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 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.

We have assessed the effectiveness of the Company's internal control over financial reporting as of December 31, 2019. In making this assessment, we used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO") in *Internal Control - Integrated Framework* (2013). Based on our assessment, we have concluded that, as of December 31, 2019, the Company's internal control over financial reporting was effective based on those criteria.

Changes in Internal Control Over Financial Reporting

There have been no changes in the Company's internal control over financial reporting identified in connection with the evaluation described above in "Management's Annual Report on Internal Control Over Financial Reporting" that occurred during the Company's fourth quarter ended December 31, 2019 that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

ITEM 9B - OTHER INFORMATION

None.

PART III

ITEM 10 - DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Directors, Executive Officers, Promoters and Control Persons

The supervision of our management and the general course of the Company's affairs and business operations is entrusted to the Board of Directors of our indirect parent, Hexion Holdings.

Set forth below are the names, ages and current positions of our executive officers and the members of the Hexion Holdings Board of Directors as of March 1, 2020.

Name	Age	Position
Craig A. Rogerson	63	Director, Chairman, President and Chief Executive Officer
George F. Knight	63	Executive Vice President and Chief Financial Officer
Patrick J. Bartels	44	Director
Jeffrey D. Benjamin	58	Director
James N. Chapman	57	Director
Joaquin Delgado	60	Director
Carol S. Eicher	61	Director
Michael J. Shannon	60	Director
John K. Wulff	71	Director
Stephen D. Newlin	67	Director
John P. Auletto	54	Executive Vice President – Human Resources
Nathan E. Fisher	54	Executive Vice President – Procurement
Douglas A. Johns	62	Executive Vice President and General Counsel
Matthew A. Sokol	47	Executive Vice President - Chief Administrative Officer
Paul G. Barletta	61	Executive Vice President - Operations
Ann Frederix	55	Senior Vice President & General Manager, Global Epoxies

Craig A. Rogerson was elected Chairman, President and Chief Executive Officer and a director of the Company effective July 9, 2017 and of Hexion Holdings Corporation in July 2019. He served as Chairman, President and Chief Executive Officer of Chemtura Corporation from December 2008 to April 2017. He was President, Chief Executive Officer and Director of Hercules Incorporated from December 2003 to November 2008. Mr. Rogerson joined Hercules in 1979 and served in a number of management positions, including President of the FiberVisions and Pinova Divisions, Vice President of Global Procurement and Chief Operating Officer. He was President and Chief Executive Officer of Wacker Silicones Corporation from 1997-2000. In May 2000, he rejoined Hercules and became President of its BetzDearborn division in August 2000. Mr. Rogerson serves on the boards of PPL Corporation, Ashland Global Holdings Inc., the American Chemistry Council, the Society of Chemical Industry, and the Pancreatic Cancer Action Network. He also serves on the Advisory board of the Michigan State University Chemical Engineering & Materials Science College. For Hexion Holdings Corporation, he serves on the Listing Committee.

George F. Knight was elected Executive Vice President and Chief Financial Officer of the Company effective January 1, 2016. From 2016 to July 2019 he was also a director of Hexion Holdings. He served as Senior Vice President - Finance and Treasurer of the Company from June 1, 2005 to December 31, 2015, having been Vice President, Finance and Treasurer since July 2002. Mr. Knight also served as Senior Vice President-Finance and Treasurer for MPM and Hexion Holdings from October 1, 2010 and November 1, 2010, respectively, until December 31, 2015. Mr. Knight joined the Company in 1997 and served until 1999 as Director and then Vice President of Mergers and Acquisitions - Finance for Borden, Inc. From 1999-2001 he served as Vice President of Finance for Borden Foods Corporation.

Patrick J. Bartels is a senior investment professional with 20 years of experience and currently serves as the Managing Member of Redan Advisors LLC. His professional experience includes investing in complex financial restructurings and process-intensive situations in North America, Asia and Europe in a broad universe of industries. Mr. Bartels has served as a director on numerous public and private boards of directors with an extensive track-record of driving value-added returns for all stakeholders through governance, incentive alignment, capital markets transactions, and mergers and acquisitions. Mr. Bartels currently serves on the board of directors of Arch Coal, Inc. and Monitronics International, Inc. From 2002 to December 2018, Mr. Bartels served as a Managing Principal at Monarch Alternative Capital LP, a private investment firm that focused primarily on event-driven credit opportunities. Prior to Monarch, he served as Research Analyst for high yield investments at INVESCO, where he analyzed primary and secondary debt offerings of companies in various industries. Mr. Bartels began his career at Pricewaterhouse Coopers LLP, where he was a Certified Public Accountant. He holds the Chartered Financial Analyst designation. Mr. Bartels received a Bachelor of Science in Accounting with a concentration in Finance from Bucknell University. For Hexion Holdings Corporation, he serves on the Audit Committee, Listing Committee and Nominating & Corporate Governance Committee.

Jeffrey D. Benjamin has been Senior Advisor to Cyrus Capital Partners, L.P. from 2008 to the present. He is currently Chairman of A-Mark Precious Metals, Inc. since 2014, and he has been on the American Airlines Group Inc. board since 2013. Past Directorships and Committees include Chemtura Corp., Caesar's Entertainment Corp., Exco Resources, Inc. (Chairman), and Spectrum Group International. Private Directorships consist of ImOn Communications LLC (Chairman), Rackspace Hosting, Inc. and Shutterfly, Inc. He has executive leadership experience in the investment industry, including UBS Securities LLC and Salomon Brothers Inc. For Hexion Holdings Corporation, he is Lead Director, Chair of the Compensation Committee and serves on the Audit Committee.

James N. Chapman is a non-executive Advisory Director of SkyWorks Capital, LLC and serves as a member of the Board of Directors of Arch Coal, Inc., American Media LLC, Eco-Bat Technologies, Inc. and Neenah Enterprises, Inc. Previously, he has served on numerous other public and private boards, including AerCap NV, Bennu Oil & Gas, LLC, Broadview Networks Inc., Chrysler LLC, CSC ServiceWorks, Inc., Hayes- Lemmerz, Inc., Tembec, Inc. and Tower International, Inc. Mr. Chapman has also previously worked for Regiment Capital Advisors, LP, The Renco Group, Inc. and was a founding principal of Fieldstone Private Capital Group. Prior to joining Fieldstone, Mr. Chapman worked for Bankers Trust Company. He has been a capital markets and strategic planning consultant with over 30 years of investment banking experience in a wide range of industries including aviation, mining, energy, automotive and general manufacturing. For Hexion Holdings Corporation, he is Chair of the Listing Committee, and serves on the Audit Committee and Compensation Committee.

Joaquín Delgado worked at 3M Company from 1987 until his retirement in July 2019. He most recently served as Executive Vice President since July 2009, having operating responsibility for three Business Groups. He has been on the Board of Directors of Stepan Company from 2011 to present, serving on all Committees. He has also served on the Board of Directors of MacPhail Center for Music, a non-profit, from 2013 to present, and is on the Executive Board. Mr. Delgado has a PhD in polymer science and engineering from Lehigh University. In addition, Dr. Delgado serves as a member of Board of Trustees of Goldman Sachs Trust and Goldman Sachs Variable Insurance Trust. For Hexion Holdings Corporation, he serves on the Environmental Health & Safety Committee and on the Nominating & Corporate Governance Committee.

Carol S. Eicher is a Director, Chair of the Governance Committee and member of the Compensation Committee of Tennant Co. and a Director, Chair of the Governance Committee and member of the Audit Committee of Advanced Emissions Solutions, Inc. Previously, she was a Director of A. Schulman Co. and President, CEO and Director of Innocor, Inc. She also held senior management positions with Dow Chemical Co., Rohm and Haas Co., Ashland, Inc. and E.I. DuPont de Nemours and Co. She has been in the chemical industry since 1979 and has extensive experience with operating leadership positions in the industry. For Hexion Holdings Corporation, she is Chair of the Nominating & Corporate Governance Committee and serves on the Environmental Health & Safety Committee.

Michael J. Shannon is a board member of Quaker Houghton (KWR) serving on the Audit Committee since Aug 2019. Mr. Shannon is the former Chief Executive Officer and a board member of Houghton International Inc. and served in these roles since his appointment in December 2015. Immediately prior to this appointment, Mr. Shannon served as Chief Operating Officer responsible for all global commercial and operational activities. Previously, Mr. Shannon spent 24 years at Ashland Inc. as a Corporate Officer and President of Global Supply Chain and Senior VP of the Performance Materials Group. He has also served on the board of Reichhold, Inc. Mr. Shannon has a BS in Chemical Engineering from the University of Pennsylvania and an MBA from Temple University. For Hexion Holdings Corporation, he is Chair of the Environmental Health & Safety Committee and serves on the Nominating & Corporate Governance Committee.

John K. Wulff serves on the Board of Directors of Celanese Corporation (Chairman, Audit Committee, Nominating and Corporate Governance Committee), and of Atlas Air Worldwide Holdings, Inc. (Member, Audit and Compensation Committees). Mr. Wulff is the former Chairman of the Board of Hercules Inc. and, during the past five years, has served on the boards and committees of Moody's Corp. and of Chemtura Corp. He has also served as a member of the Financial Accounting Standards Board (FASB), CFO of Union Carbide Corp, a partner of KPMG LLP, and officer of other governance and financial organizations. He has substantial chemical industry, strategy and financial expertise. For Hexion Holdings Corporation, he is Chair of the Audit Committee and serves on the Compensation Committee.

Stephen D. Newlin serves as the Non-Executive Chairman of Univar Solutions' (UNVR) board of directors. He served as Chairman, President and Chief Executive Officer of Univar from 2016-2018 after being elected to the board in 2014. Mr. Newlin previously served as Executive Chairman of the Board of PolyOne Corp. (POL) from 2014-2016, and Chairman, President and CEO of PolyOne from 2006-2014, following 27 years at Nalco and Ecolab (now merged). At Nalco he became President, COO and Vice-Chair, and at Ecolab he was President of Ecolab's Industrial Sector. In addition, he has served as Chairman of the Board of Directors of Oshkosh Corporation (OSK) since 2020, and has held previous board positions at Chemours Corporation (CC), The National Association of Manufacturers and others. For Hexion Holdings Corporation, he serves on the Compensation Committee and the Environmental Health & Safety Committee.

John P. Auletto was elected Executive Vice President - Human Resources effective May 15, 2016. Mr. Auletto joined the Company in September 1999 as Director of Human Resources for the Performance Resins Group. Since then he has held various positions with increasing responsibilities in human resources, including most recently, Vice President- Human Resources for the Epoxy, Phenolic and Coating Resins Division from April 2013 to May 15, 2016. Prior to joining the Company, Mr. Auletto served in human resources roles with Associates National Bank, W.L. Gore & Associates, and The Bank of New York.

Nathan E. Fisher was elected Executive Vice President - Procurement of the Company on June 1, 2005. He served as Executive Vice President - Procurement of Momentive Performance Materials Inc., having been elected to that position on October 1, 2010 and ending on 12/31/2019. Mr. Fisher joined the Company in March 2003 as Director of Strategic Sourcing and was promoted to Vice President - Global Sourcing in September 2004.

Douglas A. Johns joined the Company on May 9, 2015 but had served as Executive Vice President and General Counsel under the Shared Services Agreement with MPM since October 1, 2010. He also serves as Executive Vice President, General Counsel and Secretary of Hexion Holdings. Mr. Johns was employed by Momentive Performance Materials Inc., serving as its General Counsel and Secretary from its formation on December 4, 2006 until October 24, 2014. Prior to that time, Mr. Johns served as General Counsel for GE Advanced Materials, a division of the General Electric Company from 2004 to December 2006. Mr. Johns began his career as a trial lawyer at the U.S. Department of Justice and was in private practice before joining GE in 1991, where he served as Senior Counsel for global regulatory and environmental matters and Senior Business Counsel at GE Plastics' European headquarters in Bergen Op Zoom, The Netherlands from 2001 to 2004.

Matthew A. Sokol was appointed Chief Administrative Officer of the Company effective February 21, 2019. Until this appointment, he served as Executive Vice President, Business Development and Strategy when he joined the Company in November 2017. Mr. Sokol joined the Company from Lanxess Solutions, Inc. (formerly Chemtura Corporation), where he served as Interim Vice President of HR and M&A (NAFTA) for Lanxess. Mr. Sokol joined Chemtura in October 2005 and held a number of senior leadership roles including leading M&A, which ultimately culminated in the sale of the company to Lanxess in April 2017. Previous roles at Chemtura included: Head of Corporate Development & Investor Relations; General Manager, Flame Retardants; and Director, Strategic Corporate Development. While at Chemtura, Mr. Sokol also served as Associate General Counsel, IEP Segment, and Assistant General Counsel. Prior to Chemtura, Mr. Sokol served as senior litigation associate at Tyler, Cooper & Alcon, LLP from September 1999 to October 2005.

Paul G. Barletta was elected Executive Vice President of Operations of the Company as of February 2019. Prior to that, he was Senior Vice President, Environmental Health and Safety and Global Epoxy Manufacturing in 2018. From 2005 to 2018 he held various management roles including Vice President of Global Epoxy Manufacturing. He has been at Hexion since its formation in 2005. His previous experience also includes Site Manager at Resolution Performance Products, Inc. from 2000 to 2005 and its predecessor company, Shell Chemical. He joined Shell in 1980 and has held a variety of roles in manufacturing including Global Products & Engineering, Manufacturing Excellence, Process Safety, Process Technology, Quality, Security and Special Projects.

Ann Frederix has 30 years of experience in the chemical industry. She has been with Hexion from its formation in 2005, and has been Senior Vice President and General Manager, Global Epoxy & Versatics since June 2019. She was Vice President Epoxy Specialties from 2016 to 2019 and was Business Director and Global Marketing Manager from 2009 to 2014. Her previous experience also includes Technology Director Europe at Resolution Performance Products and Manager at Hexion's predecessor company Shell Chemicals. In her current role, she is responsible for developing and executing strategy for the Business. She earned a PhD in organic chemistry from Catholic University of Leuven in 1990.

Nominating & Corporate Governance Committee

Hexion's indirect parent, Hexion Holdings, utilizes a Nominating & Corporate Governance Committee ("NomGov Committee"), which is chaired by Ms. Eicher. The Charter for the NomGov Committee is available to stockholders on the Company's website, located at <http://investors.hexion.com/governance-highlights>. The NomGov Committee consists of Messrs. Eichel, Shannon, Delgado and Bartels. For purposes of complying with the disclosure requirements of the SEC, we have adopted the definition of independence used by the New York Stock Exchange, and under that definition each of the foregoing members of the NomGov Committee is considered independent. The NomGov Committee's process for identifying and evaluating nominees for director involves assessing candidates' knowledge relevant to the businesses and industries in which the Company operates, as well as their ability to contribute unique and diverse thinking for the benefit of the Board.

Audit Committee Financial Expert

Since neither Hexion or its indirect parent, Hexion Holdings, are listed issuers, there are no requirements that we have an independent Audit Committee. However, for purposes of complying with the disclosure requirements of the SEC, we have adopted the definition of independence used by the New York Stock Exchange, and under that definition our Audit Committee is considered independent. Hexion Holdings' Audit Committee consists of Messrs. Bartels, Benjamin, Chapman, and Wulff, each of whom qualifies as an audit committee financial expert, as such term is defined in Item 407(d)(5) of Regulation S-K.

Code of Conduct

We have a Code of Conduct that applies to all associates, including our Chief Executive Officer and senior financial officers. These standards are designed to deter wrongdoing and to promote the honest and ethical conduct of all employees. Our Code of Conduct is posted on our website: www.hexion.com under "Investor Relations – Corporate Governance." Any substantive amendment to, or waiver from, any provision of the Code of Conduct with respect to any senior executive or financial officer shall be posted on this website.

ITEM 11 - EXECUTIVE COMPENSATION

COMPENSATION DISCUSSION AND ANALYSIS

In this Compensation Discussion and Analysis, we describe our process for determining the compensation and benefits provided to our "Named Executive Officers" ("NEOs") and any material compensation and benefits decisions we have made. Our 2019 NEOs are Craig A. Rogerson, President and Chief Executive Officer (our "CEO"); George F. Knight, Executive Vice President and Chief Financial Officer (our "CFO"); Ann Frederix, Senior Vice President & General Manager, Global Epoxies, Douglas A. Johns, Executive Vice President and General Counsel; Matthew Sokol, Executive Vice President and Chief Administrative Officer; and Joseph P. Bevilacqua, Former Executive Vice President and Chief Operating Officer.

Oversight of Executive Compensation

Until July 1, 2019, the Board of Managers of the Company's parent holding company, Hexion Holdings LLC, was responsible for governance of the Company, including the responsibility for determining the compensation and benefits of our executive officers. Beginning July 1, 2019, the Board of Directors of the Company's parent holding company, Hexion Holdings Corporation, is responsible for governance of the Company, including the responsibility for determining the compensation and benefits of our executive officers. All executive compensation decisions made during 2019 for our NEOs were made by the Compensation Committee of the Hexion Holdings Board of Managers or the Compensation Committee of the Hexion Holdings Corporation Board of Directors (the "Committee"), as applicable.

The Committee sets the principles and strategies that guide the design of our executive compensation program. The Committee annually evaluates the performance and compensation levels of the NEOs. This annual compensation review process includes an evaluation of key objectives and measurable contributions to ensure that incentives are not only aligned with the Company's strategic goals, but also enable us to attract and retain a highly qualified and effective management team. Based on this evaluation, the Committee approves each executive officer's compensation level, including base salary, annual incentive opportunities and long-term incentive opportunities.

In order to obtain a general understanding of current compensation practices when setting total compensation levels for our NEOs, the Committee considers broad-based competitive market data on total compensation packages provided to executive officers with similar responsibilities at comparable companies. Such companies include those within the chemical industry, as well as those with similar revenues and operational complexity outside the chemical industry. As warranted, the Committee may use data obtained from third-party executive compensation salary surveys such as those published by Willis Towers Watson and AonHewitt when determining appropriate total compensation levels for our NEOs. Effective July 1, 2019, the Committee retained its own executive compensation consultant, Lyons Benenson & Company, Inc., to review and advise the Committee on the Company's executive compensation program and practices.

Executive Summary

Executive Compensation Objectives and Strategy

Our executive compensation program is designed to set compensation and benefits at a level that is reasonable, internally equitable and externally competitive. Specifically, the Committee is guided by the following objectives:

- **Pay for Performance.** We emphasize pay for performance based on achievement of company operational and financial objectives and the realization of personal goals. We believe that a significant portion of each executive officer's total compensation should be variable and contingent upon the achievement of specific and measurable financial and operational performance goals.
- **Align Incentives with Shareholders.** Our executive compensation program is designed to focus our NEOs on our key strategic, financial and operational goals that will translate into long-term value-creation for our shareholders.
- **Balance Critical Short-Term Objectives and Long-Term Strategy.** We believe that the compensation packages we provide to our NEOs should include a mix of short-term, cash-based incentive awards that encourage the achievement of annual goals, and long-term cash and equity elements that reward long-term value-creation for the business.
- **Attract, Retain and Motivate Top Talent.** We design our executive compensation program to be externally competitive in order to attract, retain and motivate the most talented executive officers who will drive company objectives.
- **Pay for Individual Achievement.** We believe that each executive officer's total compensation should correlate to the scope of his or her responsibilities and relative contributions to the Company's performance.

2019 Executive Compensation Updates

- Prior to the Emergence, the Company continued its focus on (i) motivating our NEOs to deliver improved performance and (ii) retaining key talent during difficult business cycles through the use of the goals set in our annual incentive plan and performance-based deferred cash awards made under a long-term incentive plan approved by the Committee in March 2019.

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- In August 2019, following the Company's emergence from a balance sheet restructuring on July 1, 2019, the Committee approved the Hexion Holdings Corporation 2019 Omnibus Incentive Plan (the "MIP"). Under the MIP, the Board may grant equity-based awards to Company management and members of the Board of Directors. In September 2019, the Committee approved the grant of time-based and performance-based stock units to 51 executives in the Company.
- The Committee reviewed the base salaries of our NEOs in the first quarter of the year. After considering the accomplishments of our NEOs, internal compensation equity and external market factors, the Committee determined to increase the base salaries of four of our NEOs. We delivered these annual merit base salary increases effective July 2019, consistent with our recent past practice. Details of the increases can be found in the "Components of Our Executive Compensation Program- Base Salary" section below.
- The Company is not currently required to hold a shareholder advisory "say-on-pay" vote.

Evaluating Company and Individual Performance

In determining 2019 compensation, the Committee considered the following accomplishments of our NEOs in 2018:

- **Mr. Rogerson, our Chairman, President and CEO:** The Committee recognized Mr. Rogerson's leadership of the company in delivering on target EBITDA and cash performance, as well as making improvement in several environmental health and safety metrics. Mr. Rogerson also led the Company through numerous portfolio optimization evaluations while maintaining strong business performance.
- **Mr. Knight, our Executive Vice President and Chief Financial Officer:** The Committee considered Mr. Knight's steady leadership in managing our leveraged balance sheet, while providing financial expertise in support of the Company's portfolio optimization efforts. Mr. Knight also helped drive significant cost savings that enabled the Company to meet its financial commitments.
- **Ms. Frederix, our Senior Vice President and General Manager, Global Epoxies:** The Committee recognized Ms. Frederix for providing strong leadership in a turbulent business environment, taking proactive action to maximize financial return in the Global Epoxies business. In her global role, Ms. Frederix also exhibited deep skills in technology, commercial acumen and people leadership.
- **Mr. Johns, our Executive Vice President and General Counsel:** The Committee recognized Mr. Johns for his outstanding leadership in the continued management of the Shared Services Agreement with MPM, as well as his strong ownership and business acumen in managing the Company's relationship with the Board of Directors. Mr. Johns also provided strong counsel in managing the Company's portfolio optimization efforts.
- **Mr. Sokol, our Executive Vice President and Chief Administrative Officer:** The Committee considered Mr. Sokol's outstanding leadership of the Company's portfolio optimization efforts, serving as the Company's focal point for outside financial institutions and consultants in the evaluation process.
- **Mr. Bevilacqua, our Former Executive Vice President and Chief Operating Officer:** The Committee recognized Mr. Bevilacqua's leadership in driving our business units to deliver on their financial commitments and environmental health & safety goals.

Components of Our Executive Compensation Program

The principal components of our executive compensation program are as follows:

Type	Components
Annual Cash Compensation	Base Salary Annual Incentive Awards Discretionary Awards
Long-Term Incentives	Equity Awards Long-Term Cash Awards
Benefits	Health, Welfare and Retirement Benefits
Other	International Assignment Compensation Change-in-Control and Severance Benefits

The following section describes each of these components in further detail.

1. Annual Cash Compensation

Base Salaries

The annual base salaries of our NEOs are designed to be commensurate with professional status, accomplishments, scope of responsibility, overall impact on the organization, and the size and complexity of the business or functional operations managed. The annual base salaries of our NEOs are also intended to be externally competitive with the market.

The Committee reviews our NEOs' base salary levels (i) annually, in conjunction with annual performance reviews, and (ii) in conjunction with new hires, promotions or significant changes in job responsibilities. When approving base salary increases, the Committee considers various factors, such as job performance, total target compensation, impact on value-creation and the external competitive marketplace. The Committee reviews the performance and achievements of the NEOs in determining whether any increases are merited based on the prior year's performance.

The base salary change for each NEO is shown in the table below. Mr. Rogerson's compensation arrangements changed effective July 1, 2019 based on employment negotiations upon emergence from Chapter 11. Mr. Sokol's salary increased when he was appointed Chief Administrative Officer of the Company in March 2019. The salary increase for Ms. Frederix reflects the increased responsibilities she assumed when she was named leader of the Global Epoxies segment. The salary increases for Messrs. Knight, Johns, Sokol and Ms. Frederix took into consideration the changes outlined above, internal equity, and external competitive market considerations. The effective date of the salary increases for Messrs. Knight, Johns and Ms. Frederix was July 1, 2019, consistent with our past practice in delivering annual merit increases.

Name	2019 Base Salary	2018 Base Salary	2019 Increase (Decrease)
Mr. Rogerson	\$ 1,250,000	\$ 1,000,000	25.00%
Mr. Knight	524,579	506,350	3.60%
Ms. Frederix ⁽¹⁾	395,262	351,682	12.39%
Mr. Johns	530,660	517,212	2.60%
Mr. Sokol	375,000	343,945	9.03%
Mr. Bevilaqua	631,108	631,108	—%

(1) Ms. Frederix's local currency salary was converted from Euros to US Dollars based on a year-end exchange rate of 1.1225 Euros per US Dollar.

Annual Incentive Awards

Our annual incentive compensation plan is a short-term performance incentive designed to reward participants for delivering increased value to the organization against specific financial and other critical business objectives. Annual incentive compensation awards are targeted at a level that, when combined with base salaries and other components of our total rewards program, is intended to yield total annual compensation that is competitive in the external marketplace, while performance above the target is intended to yield total annual compensation above the market median.

The performance targets for the applicable components of the annual incentive compensation plan are identical for executives and other eligible, salaried associates. We strive to set annual incentive award targets that are achievable only through strong performance, believing that this motivates our executives and other participants to deliver ongoing value-creation, while allowing the Company to attract and retain highly talented senior executives. Annual incentive award targets are determined in connection with the development of an overall budget for Hexion Holdings Corporation and its subsidiaries. Performance measures may be based on a number of factors, such as our prior-year performance, current market trends, anticipated synergies, integration efforts around acquired assets or businesses, potential pricing actions, raw material projections, the realization of planned productivity initiatives, expansion plans, new product development, environmental, health and safety, and other strategic factors that could potentially impact operations.

The 2019 Annual Incentive Compensation Plan

In early 2019, the Committee approved the 2019 annual incentive compensation plan for associates, including the NEOs, of the Company and its subsidiaries, which we refer to as the "2019 ICP." Under the 2019 ICP, our NEOs and other eligible participants had the opportunity to earn annual cash incentive compensation based upon the achievement of certain financial and environmental health & safety ("EH&S") goals.

The Hexion performance goals were established based on the following measures:

- Segment EBITDA, which equals earnings before interest, taxes, depreciation and amortization, adjusted to exclude discontinued operations, certain non-cash and other unusual income and expense items. See Items 7 & 8 of Part II of this Annual Report on Form 10-K for a reconciliation of Hexion Net Income to Segment EBITDA. For the 2019 ICP, the targeted Hexion Segment EBITDA was set at \$470 million. The targeted segment EBITDA for the Epoxies business ("Epoxies Segment EBITDA") for 2019 was set at \$200.1 million.

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- Cash flow, which encompasses Segment EBITDA, net trading capital improvement and/or usage, capital spending and interest paid along with other operating cash flow items such as income taxes paid and pension contributions. For the 2019 ICP, the targeted cash flow for Hexion Holdings ("Hexion Global Cash Flow") was net cash usage of \$30 million. The targeted segment EBITDA for the Epoxies segment ("Epoxies Cash Flow") for 2019 was set at \$156 million.
- Environmental health & safety (EH&S) goals, which, for the 2019 ICP, included the following: (i) severe or high-potential incidents ("SIFs"), (ii) occupational illness and injury rate ("OIIR"), and (iii) total environmental incidents (ERI).
 - The target SIFs goal was to reduce the number of SIFs by 33% compared to 2018.
 - The Company's OIIR in 2018 was 0.88. The target goal for 2019 was to achieve a 44% reduction from 2018 or a rate of 0.49.
 - Hexion Holdings ended 2018 with 24 total environmental incidents. The 2019 goal was to reduce ERI to 19 or fewer incidents, which represents an approximate 21% improvement from the prior year.

Each of the 2019 performance goals was measured independently such that a payout for the achievement of one element was not dependent upon the achievement of any other performance measure. This was intended to keep associates focused on driving continuous improvement in EH&S and cash flow, in addition to EBITDA. The Committee also determined that no adjustments to the 2019 performance goals were necessary as a result of the Emergence.

Awards under the 2019 ICP were calculated as follows: each participant was designated a target award under the 2019 ICP based on a percentage of his or her base salary, which varies by participant based on the scope of the participant's responsibilities and externally competitive benchmarks. The target bonus percentages for the NEOs are reflected in the table below.

Name	Original Incentive Target	Current Incentive Target
C. Rogerson	100%	125%
G. Knight	70%	70%
A. Frederix	50%	60%
D. Johns	70%	70%
M. Sokol	60%	60%

In 2019, for the EBITDA and Cash Flow goals, the Committee established a minimum level of performance at or below which there is no payout for that component. Above the minimum level of performance, each NEO earns a payout calculated on a linear path up to and including the target level of performance (100% payout). Above the target level of performance, each NEO earns a payout calculated on a linear path up to and including the maximum level of performance (200% payout). The Committee established fixed payout percentages for our NEOs for the EH&S goals. The Committee established minimum (30% payout), target (100% payout) and maximum (200% payout) levels of performance for SIFs, OIIR and ERI.

	Minimum	Target	Maximum
Hexion Segment EBITDA ⁽¹⁾	\$440.0	\$470.0	\$510.0
Epoxies Segment EBITDA ⁽¹⁾	\$188.1	\$200.1	\$218.1
EH&S Goal - SIFs ⁽²⁾	5	4	3
EH&S Goal - OIIR	0.60	0.49	0.37
EH&S Goal - ERI	23	19	15
Hexion Global Cash Flow ⁽¹⁾	\$(60)	\$(30)	\$10
Hexion Epoxies Cash Flow ⁽¹⁾	\$145.5	\$156.0	\$171.8

(1) Amounts reflected are in millions.

(2) Reflects number of incidents.

The following table summarizes the target awards, performance measures, weightings, achievements and payouts for the 2019 ICP awards granted to our NEOs. The 2019 ICP award amounts are reflected in the "Non-Equity Incentive Plan Compensation" column of the Summary Compensation Table. Each NEO's actual bonus under the 2019 ICP is calculated based on the information provided in the table below. In each case, the "Target Award" amount for each NEO is multiplied by the weighting percentage and performance achieved percentage for each individual component to determine the payout for that component. The total bonus payout is the sum of the individual component payouts.

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Name	Incentive Target (% of Base Salary)	Target Award (\$)	Performance Criteria / Weighting %	Performance Achieved (%)	2019 ICP Payout (\$)
C. Rogerson ⁽²⁾	102.5%	1,281,250	Hexion Segment EBITDA / 55%	0%	—
			EH&S Goal / 10%	134%	171,303
			Hexion Global Cash Flow / 35%	200%	896,875
G. Knight	70%	367,205	Hexion Segment EBITDA / 55%	0%	—
			EH&S Goal / 10%	134%	49,095
			Hexion Global Cash Flow / 35%	200%	257,044
A. Frederix ⁽²⁾	55%	217,557	Hexion Segment EBITDA / 27.5%	0%	—
			Epoxies Segment EBITDA / 27.5%	0%	—
			EH&S Goal / 10%	134%	29,087
			Hexion Global Cash Flow / 17.5%	200%	76,145
			Hexion Epoxies Cash Flow / 17.5%	0%	—
D. Johns	70%	371,462	Hexion Segment EBITDA / 55%	0%	—
			EH&S Goal / 10%	134%	49,664
			Hexion Global Cash Flow / 35%	200%	260,023
M. Sokol	60%	225,000	Hexion Global EBITDA / 55%	0%	—
			EH&S Goal / 10%	134%	30,083
			Hexion Global Cash Flow / 35%	200%	157,500

(1) Due to Mr. Bevilacqua's termination of employment on March 22, 2019, he was not eligible to receive a payout under the 2019 ICP.

(2) The ICP target percentages for Mr. Rogerson and Ms. Frederix were calculated as a percent of current base salary and reflect the ICP target percentage change that occurred (i) with Mr. Rogerson's new employment contract and (ii) upon the promotion of Ms. Frederix, both effective July 1, 2019.

Discretionary Awards

The CEO periodically uses discretionary awards to reward exemplary efforts. Often, such efforts are required by atypical business conditions or are related to special projects impacting long-term business results. Discretionary awards are also used for retention purposes or in connection with a new hiring or promotion. Any discretionary award to an executive officer must be approved by the Committee. No discretionary awards were made to our NEOs for services performed in 2019.

2. Long-Term Incentive Awards

Equity Awards

The Committee believes that equity awards play an important role in creating incentives to maximize Company performance, motivating and rewarding long-term value-creation, and further aligning the interests of our executive officers with those of our shareholders. Our NEOs, as well as other members of the leadership team and other eligible associates, participate in equity plans sponsored by Hexion Holdings Corporation. Awards under these plans are factored into the executive compensation program established by the Committee.

Our long-term strategy includes the use of periodic grants as well as ongoing annual grants of equity. We believe that periodic grants provide an incentive toward a projected long-term equity value and keep participants focused on the achievement of that long-term objective. Annual equity grants are a tool to both retain key associates and drive toward the achievement of longer-term business objectives. Our equity awards contain performance- and service-vesting requirements. Awards that are conditioned on service-vesting requirements function as a retention incentive, while awards that are conditioned on performance- and service-vesting requirements are linked to the attainment of specific longer-term financial goals.

Prior to the Emergence, there were equity awards outstanding under various legacy plans. All outstanding equity awards under such plans were forfeited under such emergence.

Following emergence from a balance sheet restructuring process on July 1, 2019, the Board adopted the Hexion Holdings Corporation 2019 Omnibus Incentive Plan (the "2019 Plan"). Under the 2019 Plan, grants were made to the NEOs which included the following types of equity awards: (i) time-based restricted stock units ("RSUs") and (ii) performance-based stock units ("PSUs"). These equity awards were granted to our NEOs (other than Mr. Bevilacqua) and other selected management team executives who are critical to delivering on the current and future performance goals of Hexion Holdings Corporation. These awards were granted to management in order to retain these executives and align their interests to those of our shareholders.

The stock units granted are non-voting units of measurement which are deemed for bookkeeping purposes to be equivalent to one share of common stock of Hexion Holdings Corporation. Of the stock units granted, approximately thirty percent (30%) are RSUs and the remaining seventy percent (70%) are PSUs. The RSUs vest in equal installments on the first three anniversaries of July 1, 2019. The PSUs vest based on attainment of a 20-day volume weighted average stock price (VWAP) during the period beginning on the Grant Date and ending on June 30, 2023 (the "Vesting Period"). Twenty-five percent (25%) of the PSUs vest upon attainment of a \$20 VWAP at any time during the Vesting Period, and one-hundred percent (100%) of the performance-based stock units vest based upon attainment of a \$30 VWAP at any time during the Vesting Period. The vesting increments are reflected in the table below.

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VWAP is Greater than or Equal to	Cumulative Percentage of PSUs That Shall Vest
\$20.00	25.0%
\$21.00	32.5%
\$22.00	40.0%
\$23.00	47.5%
\$24.00	55.0%
\$25.00	62.5%
\$26.00	70.0%
\$27.00	77.5%
\$28.00	85.0%
\$29.00	92.5%
\$30.00	100.0%

If the executive is terminated by the Company without cause, dies, becomes disabled or retires (in accordance with the retirement provisions outlined in the award agreement), any unvested RSUs or PSUs that are outstanding as of the termination date remain outstanding and eligible to vesting during the one-year period following the termination date.

If a change-in-control transaction takes place during the vesting period, all unvested RSUs will automatically vest and be settled in cash.

One-hundred percent (100%) of the RSUs are subject to settlement and delivery of the underlying shares of common stock in July 2022. Outstanding RSUs are subject to forfeiture if, prior to settlement and delivery of the underlying common shares, the executive voluntarily resigns his/her employment or is terminated by the Company for cause. PSUs that vest prior to July 1, 2022 are subject to settlement and delivery of the underlying shares of common stock in July 2022. PSUs that vest on or after July 1, 2022 but before July 1, 2023 are subject to settlement and delivery of the underlying shares of common stock in July 2023. Outstanding PSUs are subject to forfeiture if, prior to settlement and delivery of the underlying common shares, the executive voluntarily resigns his/her employment or is terminated by the Company for cause.

The details of the grants made to our NEOs are shown in the "Outstanding Equity Awards at Fiscal Year-End" table.

Cash Awards

The Committee may, from time to time, approve long-term cash awards or plans for our key associates, including our NEOs. These awards are designed to pay over extended performance periods subject to the achievement of specified, measurable performance goals, and are further conditioned upon continued employment. As such, these awards are useful for providing a defined value for achievement of our financial targets, as well as leadership stability. In addition, long-term cash awards help complement equity awards that are not yet liquid.

In November 2016, in an effort to retain key talent in a challenging business environment, long-term cash awards were granted under the Momentive Performance Materials Holdings LLC Long-Term Cash Incentive Plan (the "LTIP") to all of our NEOs other than the CEO. The LTIP awards vest based upon service and/or performance metrics, depending upon the grantee.

In July 2017, following the retirement announcement of Mr. Craig Morrison, our former CEO, a modification was made to the 2016 awards to ensure stability and retention of key associates; including the NEOs, except for Messrs. Rogerson, Sokol and Bevilacqua. A portion of these awards that were payable based on achievement of performance metrics were converted into time-based awards payable in 2020 or 2021 as applicable. The LTIP was assumed by Hexion Holdings Corporation upon emergence from the balance sheet restructuring process on July 1, 2019. The amounts payable in 2020 for Messrs. Knight and Johns and the amount payable in 2021 for Ms. Frederix are \$791,666, \$862,021 and \$289,393, respectively.

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In March 2019, the Committee approved the Hexion Holdings LLC 2019 Long-Term Incentive Program (the “2019 LTI”), a plan that was adopted by Hexion Holdings Corporation upon emergence from a balance sheet restructuring process on July 1, 2019. Under the 2019 LTI, our NEOs, other than Mr. Bevilaqua, were granted cash-based awards (2019 LTI Target) that are payable based upon achievement of specific financial and environmental health & safety goals in 2019, as described in the table below:

Performance Measures	Threshold Achievement	Target Achievement	Maximum Achievement
Segment EBITDA (55.0% of 2019 LTI Target) <i>% payout of 2019 LTI Target allocable to Segment EBITDA</i>	\$440 million 50%	\$470 million 100%	\$510 million 200%
Cash Flow (35.0% of 2019 LTI Target) <i>% payout of 2019 LTI Target allocable to Cash Flow</i>	(\$60) million 50%	(\$30) million 100%	\$10 million 200%
SIF Incidents (5.0% of 2019 LTI Target) <i>% payout of 2019 LTI Target allocable to SIF Incidents</i>	5 incidents 30%	4 incidents 100%	3 incidents 200%
Occupational Illness & Injury Rate (OIIR) (2.5% of 2019 LTI Target) <i>% payout of 2019 LTI Target allocable to OIIR</i>	0.60 30%	0.49 100%	0.37 200%
Total Environmental Incidents (ERI) (2.5% of 2019 LTI Target) <i>% payout of 2019 LTI Target allocable to ERI</i>	23 incidents 30%	19 incidents 100%	15 incidents 200%

Amounts earned based on 2019 performance are payable in the third quarter of 2021. These cash-based awards are shown in the Grants of Plan-Based Awards Table below.

Based on 2019 performance, the overall payout ratio for this plan is 83.37%. While the Company did not achieve the threshold target for Segment EBITDA, the maximum target for Cash Flow and SIF incidents was achieved. The Company’s OIIR achievement was slightly above target and achievement of ERI was slightly above minimum. Based on the overall payout ratio noted above, the amount earned by each NEO, payable in the third quarter of 2021 is reflected in the following table:

Named Executive Officer	2019 LTI Target	2019 LTI Earned
Mr. Rogerson	\$2,000,000	\$1,667,400
Mr. Knight	\$300,000	\$250,113
Ms. Frederix	\$140,324	\$116,989
Mr. Johns	\$250,000	\$208,428
Mr. Sokol	\$250,000	\$208,428

3. Benefits

The Company provides a comprehensive suite of benefits to eligible associates, including our NEOs. Our benefit programs are designed to provide market-competitive benefits for associates and their covered dependents. Each of our NEOs (other than Ms. Frederix) is covered under a health and welfare program that provides medical, prescription drug, dental, vision, life insurance and disability insurance benefits. Ms. Frederix is covered under the applicable health and welfare benefits program offered to associates in Belgium.

Each of our NEOs (other than Ms. Frederix) also participates in our savings plan, a defined contribution plan (the “401(k) Plan”), which allows eligible U.S. associates to make pre-tax contributions from 1% to 15% of eligible earnings for associates who meet the definition of a highly compensated employee and 25% for all other associates up to the U.S. tax limits for qualified plans. Those associates are also eligible to receive matching contributions from the Company equal to 100% on contributions of up to 5% of eligible earnings. In addition, the Company makes an annual retirement contribution, ranging from 3% to 7% of eligible earnings depending on years of service, to eligible associates actively employed on the last day of the year. An additional company contribution may be made if we achieve specified annual financial goals established at the beginning of each plan year. Ms. Frederix participates in a defined benefit pension plan offered to our Belgium associates, as further described in the Narrative to the Pension Benefits table below.

Each of our NEOs, other than Messrs. Johns, Rogerson and Ms. Frederix, participated in a qualified cash balance pension plan on substantially the same terms as other plan participants (the “Hexion U.S. Pension Plan”). The Hexion U.S. Pension Plan was frozen in 2009, as discussed further in the Narrative to the Pension Benefits table below. In addition, because individuals are subject to U.S. tax limitations on contributions to qualified retirement plans, the Company provided a non-qualified retirement plan intended to provide these associates, including our NEOs, with an incremental benefit on eligible earnings above the U.S. tax limits for the qualified plan (the “Hexion Supplemental Plan”). The benefits in the Hexion Supplemental Plan associated with the Hexion U.S. Pension Plan were also frozen in 2009. Our NEOs participated in the Hexion Supplemental Plan on the same basis as our other highly compensated salaried associates.

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Additionally, because individuals are subject to U.S. tax limitations on contributions to a qualified retirement plan, and following the freezing of the Hexion Supplemental Plan, the Company established a non-qualified Supplemental Executive Retirement Plan ("SERP") in 2011, which provides a benefit on eligible earnings that exceed the U.S. tax limit applicable to our 401(k) Plan. In 2019, our NEOs were eligible to receive a 5% company contribution on eligible earnings in excess of \$280,000, which is the same benefit received by our other highly compensated salaried associates.

There were no significant changes to the Company's benefit plans in 2019 that would impact our NEOs. There are descriptions of these plans in the Narrative to the Pension Benefits Table and Narrative to the Nonqualified Deferred Compensation Table below.

4. Other

Temporary Assignment / Relocation

The Company may provide certain additional benefits to an executive officer if he or she is on a temporary international or domestic assignment. These benefits are externally competitive and a means to compensate the executive officer for financial expenses that would not exist if the executive remained in his or her home. For example, the Company may provide family travel and housing allowances, other one-time allowances, tax equalization payments, and reimbursements or payments for relocation from the executive officer's home. In addition, pursuant to the Company's relocation policy, certain expenses are grossed up to protect the executive from the tax consequences associated with those certain relocation expenses. We believe that, as a global company, it is necessary to offer this benefit to encourage key associates and executives to temporarily relocate for strategic business reasons. None of our NEO's received additional benefits related temporary assignment or relocation in 2019.

Change-in-Control and Severance Benefits

Our NEOs are generally entitled to change-in-control and severance protections. We believe that appropriate change-in-control and severance protections accomplish two objectives. First, they create an environment where key executives are able to take actions in the best interest of the Company without incurring undue personal risk. Second, they foster management stability during periods of potential uncertainty. We are also cognizant that excessive pay in the form of change-in-control and severance protection would not be in the best interest of the Company because such pay may encourage undue risk-taking. In an attempt to balance the delicate equation, the Committee has determined to provide these benefits very selectively. The arrangements for our NEOs other than Mr. Rogerson were implemented in prior years. The arrangement for Mr. Rogerson was implemented in connection with the Emergence and was an important tool to ensure his continued service during this critical time for the Company. The change-in-control and severance benefits payable to our NEOs are discussed in the Narrative to the Summary Compensation Table and in the discussion on Potential Payments Upon Termination of Employment below.

COMPENSATION COMMITTEE REPORT ON EXECUTIVE COMPENSATION⁽¹⁾

The Committee has reviewed and discussed with management the disclosures contained in the above Compensation Discussion and Analysis. Based upon this review and discussion, the Committee recommended to our Board of Directors that the Compensation Discussion and Analysis section be included in our Annual Report on Form 10-K.

Compensation Committee of the Board of Managers

Jeffrey D. Benjamin (Chairman)
James N. Chapman
Stephen D. Newlin
John K. Wulff

- (1) SEC filings sometimes "incorporate information by reference." This means the Company is referring the reader to information that has previously been filed with the SEC, and that this information should be considered as part of the filing. Unless the Company specifically states otherwise, this report shall not be deemed to be incorporated by reference and shall not constitute soliciting material or otherwise be considered filed under the Securities Act or the Securities Exchange Act.

SUMMARY COMPENSATION TABLE

The following table provides information about the compensation of our Chief Executive Officer, Chief Financial Officer, and our three next most highly compensated executive officers whom we collectively refer to as our NEOs.

Name and Principal Position(a)	Year (b)	Salary (\$)(c)	Bonus (\$)(d) (1)	Stock Awards (\$)(e)	Options Awards (\$)(f)	Non-Equity Incentive Plan Compensation (\$)(g) (2)	Change in Pension Value and Nonqualified Deferred Compensation Earnings (\$)(h) (3)	All Other Compensation (\$)(i) (4)	Total (\$)(j)
Craig A. Rogerson President and Chief Executive Officer	2019	1,125,000	—	23,814,996	—	1,068,178	330	202,013	26,210,517
	2018	1,000,000	—	—	—	916,000	—	374,556	2,290,556
	2017	480,769	888,410	—	—	111,590	—	258,302	1,739,071
George F. Knight Executive Vice President and Chief Financial Officer	2019	515,464	250,113	1,602,096	—	306,139	49,028	67,772	2,790,612
	2018	496,612	475,000	—	—	324,672	—	53,412	1,349,696
	2017	480,937	272,267	—	—	76,063	—	54,778	884,045
Ann Frederix Senior Vice President and General Manager, Global Epoxies	2019	375,986	290,626	974,250	—	105,232	793,347	—	2,539,441
Douglas A. Johns Executive Vice President and General Counsel	2019	523,936	208,428	1,255,704	—	309,688	430	64,306	2,362,492
	2018	517,213	517,213	—	—	331,637	—	50,548	1,416,611
	2017	517,213	594,880	—	—	80,802	—	48,768	1,241,663
Matthew Sokol Executive Vice President and Chief Administrative Officer	2019	369,028	251,250	952,596	—	187,583	11	36,351	1,796,819
Joseph P. Bevilaqua Former Executive Vice President and Chief Operating Officer	2019	845,640	1,166,667	—	—	—	33,494	29,536	2,075,337
	2018	631,108	583,333	—	—	462,476	—	70,090	1,747,007
	2017	631,108	743,600	—	—	112,681	—	77,118	1,564,507

- (1) The amounts shown in column (d) for 2019 reflect time-based amounts paid and earned under the LTIP. The amounts shown in column (d) for 2019 reflect time-based amounts paid under the LTIP. In the case of Mr. Bevilaqua, the amount shown reflects his final time-based payment under the LTIP, which represented 67% of his total award value.
- (2) The amounts shown in column (g) for 2019 reflect the amounts earned under the 2019 ICP, based on performance achieved for 2019. The material terms of the 2019 ICP are described in the Compensation Discussion & Analysis above. Payments under the 2019 ICP were made in March 2020.
- (3) The amounts shown in column (h) reflect the net actuarial increase in the present value of benefits under the Hexion U.S. Pension Plan and the Hexion Supplemental Plan for Messrs Knight and Bevilaqua. The increase in net present value for 2019 includes: for Mr. Knight, a \$47,026 increase; and for Mr. Bevilaqua, a \$30,025 increase in net present value. Mr. Rogerson, Ms. Frederix, Mr. Johns, and Mr. Sokol are not participants in these plans. In addition, the amounts reported include excess interest credits in the Hexion non-qualified deferred compensation plans. The amount reported for Ms. Frederix is the net present value increase to her accrued benefit in the Hexion Belgium Pension Plan. See the Pension Benefits Table below including the Narrative to Pension Benefits Table for additional information regarding our pension calculations, including the assumptions used for these calculations.
- (4) The amounts shown in the All Other Compensation column for 2019 include: for Mr. Rogerson: \$111,930 of company contributions made or accrued to the defined contribution plans, \$42,299 in tax gross-ups, \$19,544 in rental housing and furniture, and \$28,241 in travel expenses; for Mr. Knight: \$67,772 of company contributions made or accrued to the defined contribution plans; for Mr. Johns: \$64,306 of company contributions made or accrued to the defined contribution plans; for Mr. Sokol: \$36,351 of company contributions made or accrued to the defined contribution plans; and for Mr. Bevilaqua: \$29,536 of company contributions made or accrued to the defined contribution plans.

GRANTS OF PLAN-BASED AWARDS

The following table presents information about grants of awards during the year ended December 31, 2019, under the 2019 ICP, the 2019 LTI and the 2019 MIP grants that are subject to performance-vesting conditions.

Name (a)	Estimated Future Payouts Under Non-Equity Incentive Plan Awards			Estimated Future Payouts Under Equity Incentive Plan Awards			All Other Stock Awards: Number of Shares of Stock or Units (#) (i) (1)	All Other Option Awards: Number of Securities Underlying Options (#) (j)	Exercise or Base Price of Option Awards (\$/share) (k)	Grant Date Fair Value of Stock and Option Awards (\$) (2)
	Threshold (\$) (c)	Target (\$) (d)	Maximum (\$) (e)	Threshold (#) (c)	Target (#) (g)	Maximum (#) (e)				
Craig A. Rogerson										
2019 ICP	32,031	1,281,250	2,562,500	—	—	—	—	—	—	—
2019 LTI	—	2,000,000	4,000,000	—	—	—	—	—	—	—
2019 MIP	—	—	—	—	—	—	—	—	—	—
RSUs	—	—	—	—	—	—	550,000	—	—	8,453,500
PSUs	—	—	—	320,833	1,283,333	1,283,333	—	—	—	15,361,496
George F. Knight										
2019 ICP	9,180	367,205	734,410	—	—	—	—	—	—	—
2019 LTI	—	300,000	600,000	—	—	—	—	—	—	—
2019 MIP	—	—	—	—	—	—	—	—	—	—
RSUs	—	—	—	—	—	—	37,000	—	—	568,690
PSUs	—	—	—	21,583	86,333	86,333	—	—	—	1,033,406
Ann Frederix										
2019 ICP	5,439	217,557	435,114	—	—	—	—	—	—	—
2019 LTI	—	140,324	280,647	—	—	—	—	—	—	—
2019 MIP	—	—	—	—	—	—	—	—	—	—
RSUs	—	—	—	—	—	—	22,500	—	—	345,825
PSUs	—	—	—	13,125	52,500	52,500	—	—	—	628,425
Douglas A. Johns										
2019 ICP	9,287	371,462	742,924	—	—	—	—	—	—	—
2019 LTI	—	250,000	500,000	—	—	—	—	—	—	—
2019 MIP	—	—	—	—	—	—	—	—	—	—
RSUs	—	—	—	—	—	—	29,000	—	—	445,730
PSUs	—	—	—	16,917	67,667	67,667	—	—	—	809,974
Matthew Sokol										
2019 ICP	5,625	225,000	450,000	—	—	—	—	—	—	—
2019 LTI	—	250,000	500,000	—	—	—	—	—	—	—
2019 MIP	—	—	—	—	—	—	—	—	—	—
RSUs	—	—	—	—	—	—	22,000	—	—	338,140
PSUs	—	—	—	12,833	51,333	51,333	—	—	—	614,456
Joseph P. Bevilaqua										
2019 ICP	—	—	—	—	—	—	—	—	—	—
2019 LTI	—	—	—	—	—	—	—	—	—	—
2019 MIP	—	—	—	—	—	—	—	—	—	—
RSUs	—	—	—	—	—	—	—	—	—	—
PSUs	—	—	—	—	—	—	—	—	—	—

(1) The number of units shown reflects the time-based award. The aggregate Target Award value was converted into a time-based award (30%) and a performance-based award (70%) based on a Hexion Holdings Corporation stock price of \$15 per share.

(2) The values shown are based on a fair value of \$15.37 per share for the time-based restricted stock units and a fair value of \$11.97 per share for the performance based stock units at Target.

Narrative to Summary Compensation Table and Grants of Plan-Based Awards Table

Employment Agreements

The Company has employment agreements or employment letters with each of our NEOs, which provide for their terms of compensation, benefits, severance, and certain restrictive covenants. Details regarding the severance and restrictive covenant provisions are provided below under "Potential Payments upon a Termination or Change in Control."

Mr. Rogerson's Employment Agreement dated July 1, 2019, includes (i) a base salary at the rate of one million two hundred fifty thousand dollars (\$1,250,000) per annum, (ii) an annual cash bonus with a target amount equal to 125% of his base salary, based on Mr. Rogerson's and/or the Company's attainment of certain criteria as determined by the Board, and (iii) a commitment that Mr. Rogerson will participate in the Company's equity incentive program upon terms and conditions established by the Board.

Mr. Knight's Terms of Employment dated October 22, 2015 provides that he is entitled to (i) receive an annual base salary of \$475,000 for his first year ("Base Salary"), (ii) be eligible to receive annual cash incentive compensation payments (the "Annual Bonus") with a target Annual Bonus opportunity of 70% of his Base Salary; and (iii) be eligible to receive severance equal to 18 months of Base Salary in the event of a termination by the Company without cause. Mr. Knight will not receive additional compensation for serving as a director of the Company.

Ms. Frederix's Employment Agreement, as amended July 1, 2019, provides for (i) a base salary rate at the rate of three hundred fifty-two thousand and one hundred and twenty-seven dollars (EUR 352,127) per annum, (ii) an annual cash bonus with a target amount equal to 60% of her base salary, based on the achievement of certain targets determined annually by the Board, and (iii) a commitment that Ms. Frederix will participate in the Company's equity incentive program upon terms and conditions established by the Board.

Mr. Johns' Employment Agreement dated May 6, 2015 includes (i) a base salary of \$497,319.68 per year ("Base Salary"); (ii) annual cash incentive compensation payments ("Annual Bonus") with an annual target of 70% of his Base Salary; and (iii) eligibility to receive severance equal to 18 months of Base Salary in the event of a termination by the Company without cause. In addition, Mr. Johns received service credit for his prior years of service with MPM and GE for purposes of calculating his retirement benefits.

Mr. Sokol's Terms of Employment dated March 11, 2019 includes (i) a base salary of \$375,000 per year; (ii) annual cash incentive compensation payments (the "Annual Bonus") with a target Annual Bonus of 60% of his Base Salary; and (iii) eligibility to receive severance equal to 12 months of Base Salary in the event of a termination by the Company without cause.

OUTSTANDING EQUITY AWARDS AT FISCAL YEAR-END

The following table presents information about outstanding stock awards held by our NEOs as of December 31, 2019. The securities underlying the awards are common shares of Hexion Holdings, and the awards were granted under the Hexion Holdings Corporation 2019 Omnibus Incentive Plan. See the footnotes and Narrative to Outstanding Equity Awards Table below, as well as the description of the 2019 MIP above, for a discussion of this plan and the vesting conditions applicable to the awards.

Name (a)	Stock Awards ⁽¹⁾			
	Number of Shares or Units of Stock That Have Not Vested (#) (g) (2)	Market Value of Shares or Units or Stock That Have Not Vested (\$) (h) (3)	Equity Incentive Plan Awards: Number of Unearned Shares, Units or Other Rights That Have Not Vested (#) (i) (4)	Equity Incentive Plan Awards: Market or Payout Value of Unearned Shares, Units or Other Rights That Have Not Vested (j) (3)
Craig A. Rogerson				
2019 MIP				
Restricted Stock Units	550,000	6,627,500	—	—
Performance Stock Units	—	—	1,283,333	15,464,163
George F. Knight				
2019 MIP				
Restricted Stock Units	37,000	445,850	—	—
Performance Stock Units	—	—	86,333	1,040,313
Ann Frederix				
2019 MIP				
Restricted Stock Units	22,500	271,125	—	—
Performance Stock Units	—	—	52,500	632,625
Douglas A. Johns				
2019 MIP				
Restricted Stock Units	29,000	349,450	—	—
Performance Stock Units	—	—	67,667	815,387
Matthew Sokol				
2019 MIP				
Restricted Stock Units	22,000	265,100	—	—
Performance Stock Units	—	—	51,333	618,563

- (1) Effective July 1, 2019 in conjunction with the Emergence from Chapter 11 all outstanding unvested unit options and restricted deferred units were canceled, effective immediately.
- (2) This award vests in three equal annual installments on the first three anniversaries of July 1, 2019, and will be settled within 10 days following July 1, 2022.
- (3) The market values shown in Columns (h) and (j) are based on the closing price of a share of Hexion Holdings Corporation common stock on the over-the-counter market as of December 31, 2019.
- (4) Twenty-five percent (25%) of this award vests when, at any time during the Vesting Period, a \$20 VWAP is attained. Thereafter, an additional 7.5% of the award will vest with each \$1.00 increase in the VWAP during the Vesting Period, until 100% of the award is vested if a \$30 VWAP is attained during the Vesting Period. Any portion of the award that vests prior to July 1, 2022 are subject to settlement and delivery of the underlying shares of common stock in July 2022, and any portion of the award that vests on or after July 1, 2022, but before July 1, 2023, are subject to settlement and delivery of the underlying shares of common stock in July 2023.

Narrative to Outstanding Equity Awards Table

2019 MIP

In August 2019, the Board of Directors of Hexion Holdings Corporation approved a new long-term equity incentive plan for employees and directors of the Company (the "2019 MIP"). Grants under the 2019 MIP are denominated in common shares of Hexion Holdings Corporation. Under the 2019 MIP, participants may receive grants of options to purchase shares, stock appreciation rights, restricted stock, restricted stock units, and other stock-based awards upon terms and conditions determined by the Board. Grants of time-based and performance-based stock units were made in September 2019 to a select group of Company leaders, including our Named Executive Officers. The amount of each award was based on the executive's scope of responsibility, market data, contribution to value creation and other relevant factors determined by the Board in its discretion. The time-based awards require continued service and function as a retention incentive, while the performance-based awards vest upon achievement of certain stock prices over a four-year period, which we believe provides both a retention incentive and encourages the attainment of specific long-term financial objectives. The material terms of the grants made to our Named Executive Officers under the 2019 MIP are further described in the Narrative to the Grants of Plan-Based Awards table.

OPTION EXERCISES AND STOCK VESTED

The Option Exercises and Stock Vested table is omitted since there were no such transactions for our NEOs during the year ended December 31, 2019.

PENSION BENEFITS

The following table presents information regarding the benefits payable to each of our NEOs at, following, or in connection with their retirement under the qualified and non-qualified defined benefit pension plans of the Company as of December 31, 2019. The table does not provide information regarding the Company's qualified or non-qualified defined contribution plans. The amounts shown in the table for each participant represent the present value of the annuitized benefit and do not represent the actual cash value of a participant's account.

Name (a)	Plan Name (b)	Number of Years Credited Service (#) (c) (1)	Present Value of Accumulated Benefit (\$) (d)	Payments During Last Fiscal Year (\$) (e)
Craig A. Rogerson ⁽²⁾	Hexion U.S. Pension Plan	—	—	—
	Hexion Supplemental Plan	—	—	—
George F. Knight	Hexion U.S. Pension Plan	12.23	206,720	—
	Hexion Supplemental Plan	11.74	97,941	—
Joseph P. Bevilacqua	Hexion U.S. Pension Plan	7.25	132,310	—
	Hexion Supplemental Plan	6.76	—	(156,524)
Ann Frederix	Hexion Belgium Pension Plan	28.92	3,396,403	—
Douglas A. Johns ⁽²⁾	Hexion U.S. Pension Plan	—	—	—
	Hexion Supplemental Plan	—	—	—
Matthew Sokol ⁽²⁾	Hexion U.S. Pension Plan	—	—	—
	Hexion Supplemental Plan	—	—	—

(1) The number of years of credited service set forth in column (c) reflects the number of years between the NEO's hire date and the plan freeze date, and is used to determine benefit accrual under the applicable plan.

(2) Mr. Rogerson, Mr. Johns and Mr. Sokol do not participate in the Hexion U.S. Pension Plan or the Hexion Supplemental Plan.

Narrative to Pension Benefits Table

Hexion U.S. Pension Plan, Hexion Supplemental Plan and Hexion Belgium Pension Plan

The benefits associated with the Hexion U.S. Pension Plan and Hexion Supplemental Plan were frozen June 30, 2009, and January 1, 2009, respectively. Although participants will continue to receive interest credits under the plans, no additional benefit credits will be provided. Prior to the freeze, the Hexion U.S. Pension Plan provided benefit credits equal to 3% of earnings to the extent that this credit does not exceed the Social Security wage base for the year plus 6% of eligible earnings in excess of the social security wage base to covered U.S. associates, subject to the IRS-prescribed limit applicable to tax-qualified plans.

The Hexion Supplemental Plan provided non-qualified pension benefits in excess of allowable limits for the qualified pension plans. The benefit formula mirrored the qualified Hexion U.S. Pension Plan but applied only to eligible compensation above the federal limits for qualified plans. The accrued benefits are unfunded and are paid from our general assets upon the participant's termination of employment with the Company.

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Under both the Hexion U.S. Pension Plan and Hexion Supplemental Plan, eligible earnings included annual incentive awards that were paid currently, but excluded any long-term incentive awards. Historically, the accrued benefits earned interest credits based on one-year Treasury bill rates until the participant begins to receive benefit payments. Effective January 1, 2012, the plans were amended to provide a minimum interest crediting rate of 300 basis points. The interest rate determined under the plan for fiscal 2016 was 3.0%. Participants vest after the completion of three years of service.

Mr. Knight is currently eligible for early retirement under the Hexion U.S. Pension Plan, having met the eligibility criteria of having reached age 55 with 10 years of service with the Company.

Ms. Frederix, our NEO in Belgium, participates in a contributory defined benefit pension plan covering certain employees in Belgium. The benefit is determined based on salary as well as service history with the company. The employee contributes between 1.5% to 5% of eligible earnings based on a specified formula and the company is responsible for the remainder of the cost.

For a discussion of the assumptions applied in calculating the benefits reported in the table above, please see Note 13 to our Consolidated Financial Statements included in Part II of Item 8 in this Annual Report on Form 10-K.

NONQUALIFIED DEFERRED COMPENSATION

The following table presents information with respect to each defined contribution or other plan that provides for the deferral of compensation on a basis that is not tax-qualified.

Name (a)	Executive Contributions in Last FY (\$) (b)	Registrant Contributions in Last FY (\$) (c) (1)	Aggregate Earnings (Loss) in Last FY (\$) (d)	Aggregate Withdrawals/ Distributions (\$) (e)	Aggregate Balance at Last FYE (\$) (f)
Craig A. Rogerson					
Hexion SERP	—	86,250	1,480	—	98,418
George F. Knight					
Hexion Supplemental Plan	—	—	6,205	—	210,222
Hexion SERP	—	14,884	2,760	—	101,842
2004 DC Plan (2)	—	—	(8,367)	—	—
2019 LTI	—	250,113	—	—	—
Ann Frederix					
2019 LTI	—	116,989	—	—	—
Douglas A. Johns					
Hexion SERP	—	16,151	1,927	—	74,314
2019 LTI	—	208,428	—	—	—
Matthew Sokol					
Hexion SERP	—	3,597	48	—	3,646
Joseph P. Bevilaqua					
Hexion Supplemental Plan	—	—	9,222	(407,279)	—
Hexion SERP	—	23,439	6,314	(294,944)	—
2004 DC Plan (2)	—	—	(31,357)	—	—

(1) The amount shown in column (c) for the Hexion SERP is included in the All Other Compensation column of the Summary Compensation Table for 2018. These amounts were earned in 2018 and credited to the accounts by Hexion in 2019.

(2) The amount shown reflects the loss in value of the deferred compensation units under the 2004 DC plan as a result of the Emergence.

Narrative to the Nonqualified Deferred Compensation Table

Hexion Supplemental Plan

Effective January 1, 2009, the benefits associated with this plan were frozen. This plan provided supplemental retirement benefits in the form of voluntary associate deferral opportunities and employer match on compensation earned above the IRS limit on qualified plans. The Hexion Supplemental Plan benefits are unfunded and paid from our general assets upon the associate's termination of employment. Effective January 1, 2016, interest credits are made to the participants' accounts at an interest rate determined by the Company, which has been defined as the greater of (i) the rate in the fixed income fund of the 401(k) Plan and (ii) 3%.

Hexion SERP

The Company adopted the Hexion SERP in 2011 to provide certain of our executives and other highly compensated associates, including our NEOs, an annual contribution of 5% of eligible earnings above the maximum limitations set by the IRS for contributions to a qualified defined contribution plan. Under the Hexion SERP, an unfunded non-qualified plan, eligible earnings are limited to base salary and amounts earned under the Company's annual incentive compensation plan. Account credits are made to the plan during the third quarter of each year. Interest credits are provided in participants' SERP accounts at an interest rate determined by the Company. Effective January 1, 2016, the interest rate determined by the Company is the greater of (i) the rate in the fixed income fund of the 401(k) Plan and (ii) 3%. This deferred compensation is paid six months following termination of employment.

POTENTIAL PAYMENTS UPON TERMINATION OR CHANGE-IN-CONTROL

The Company has employment agreements or letters with Rogerson, Knight, and Johns. The section below describes the payments that may be made to our Named Executive Officers upon separation, pursuant to these individual agreements, applicable corporate practices, or in connection with a change in control. For payments made upon a retirement, other than in connection with a separation or change in control, also see the discussion in the Pension Benefits and Nonqualified Deferred Compensation tables and related narratives above.

Severance/Termination Payments

The employment agreement with Mr. Rogerson provides that if Mr. Rogerson's employment is terminated by the Company without cause or he resigns for good reason (as defined in his employment agreement), the Company will provide him with an amount equal to two times the sum of (x) his annual base salary and (y) his target annual bonus, paid in equal installments for 24 months, and continued COBRA coverage for 18 months at the expense of the Company (or until Mr. Rogerson becomes ineligible for such coverage), subject to his execution of a release of claims against the Company and his continued compliance with post-termination covenants. And provided further, if such termination of employment occurs following a change of control (as defined in the agreement), then the severance payment shall be equal to three times the sum of his annual base salary plus target bonus, such amounts to be paid in substantially equal installments for a period ending in 36 months. In addition, any accrued but unpaid compensation through the termination date (such as accrued but unpaid base salary, earned but unpaid bonus, and accrued and unused vacation) will be paid in a lump-sum payment at the time of termination. The employment agreement also contains an agreement to not disclose non-public information and a 12 month post-termination non-competition and non-solicitation agreement.

In addition, the employment agreement with Mr. Rogerson provides that if Mr. Rogerson's employment is terminated by the Company upon or following a change-in-control (as defined in his employment agreement), the Company will provide him with an amount equal to three times the sum of (x) his annual base salary and (y) his target annual bonus, paid in equal installments for 36 months, and continued COBRA coverage for 18 months at the expense of the Company (or until Mr. Rogerson becomes ineligible for such coverage), subject to his execution of a release of claims against the Company and his continued compliance with post-termination covenants.

Under Mr. Knight's terms of employment, he would receive 18 months of continued base salary if his employment is terminated through no fault of his own. In addition to agreeing to not disclose non-public information, pursuant to the Management Investor Rights Agreement under the 2011 Equity Plan, Mr. Knight has agreed not to compete with the Company during the period he receives severance payments from the Company and not to solicit Company associates for one year following the date he ceases receiving severance payments from the Company.

Under applicable corporate severance guidelines based upon his position and length of service with the Company, Mr. Sokol would be entitled to continued base salary payments for 52 weeks in the event his employment is terminated without cause. Severance payments under such guidelines are conditioned upon compliance with non-competition and non-solicitation covenants. In addition, Mr. Sokol has agreed not to compete with the Company during the period he receives severance payments from the Company and not to solicit Company associates for one year following the date he ceases receiving severance payments from the Company.

Under Mr. Johns' terms of employment, he would receive 18 months of continued base salary if his employment is terminated by the Company without cause. In addition to agreeing to not disclose non-public information, pursuant to the Management Investor Rights Agreement under the 2011 Equity Plan, Mr. Johns has agreed not to compete with the Company during the period he receives severance payments from the Company and not to solicit Company associates for one year following the date he ceases receiving severance payments from the Company. Upon termination by the Company without cause or resignation for good reason, Mr. Johns has a right to require the Company to repurchase his Hexion Holdings units for their original cost, under the MPM 2007 Plan, as shown in the table below.

Ms. Frederix is entitled to severance based on local legislation in the event of involuntary termination without cause.

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Termination Payments

The following table describes payments our NEOs would have received had the individual's employment been terminated by the Company without cause, or in the case of Rogerson, by the executive for good reason or a change-in-control, as of December 31, 2019.

Name	Cash Severance (\$ (1))	Estimated Value of Benefits (\$) (2)	2019 LTI (3)	Equity Incentive Plan Awards (4)	Pension and Nonqualified Plan Payouts (5)
Craig A. Rogerson					
Termination Without Cause	5,625,000	47,190	1,667,420	2,209,167	98,418
Resignation with Good Reason	5,625,000	47,190	—	—	98,418
Termination Due to Change-in-Control	8,437,500	47,190	—	6,627,500	98,418
George F. Knight					
Termination Without Cause	786,868	24,149	250,113	148,617	616,725
Termination Due to Change-in-Control	—	—	—	445,850	—
Ann Frederix					
Termination Without Cause	—	—	116,989	90,375	3,396,403
Termination Due to Change-in-Control	—	—	—	271,125	—
Douglas A. Johns					
Termination Without Cause	795,990	47,190	208,428	116,483	74,314
Termination Due to Change-in-Control	—	—	—	349,450	—
Matthew Sokol					
Termination Without Cause	375,000	47,190	208,428	88,367	3,646
Termination Due to Change-in-Control	—	—	—	265,100	—
Joseph P. Bevilaqua					
Termination Without Cause	946,662	43,000	—	—	991,056

- (1) This column reflects cash severance payments due under the NEO's employment agreement, or under the applicable severance guidelines of the Company, as described above, based on salary as of December 31, 2019.
- (2) This column reflects the estimated value of health care benefits and outplacement services. Under the Company's severance guidelines, each NEO would be entitled to 12 months of executive outplacement services in the event of a termination through no fault of their own. The values are based upon the Company's estimated cost of providing such benefits as of December 31, 2019.
- (3) The amount shown in this column is the amount that would be due pursuant to the 2019 LTI plan provisions.
- (4) Amounts shown reflect the value of outstanding equity awards that would be due pursuant to plan and award agreement provisions, calculated based on the year-end stock price of Hexion Holdings Corporation.
- (5) The amounts shown reflect the amount paid following termination for Mr. Bevilaqua, and the amount of vested benefits as of December 31, 2019 for each of the other NEOs.

In addition to these benefits, our NEOs would also generally be entitled to receive the benefits set forth above in the Pension Benefits Table and Nonqualified Deferred Compensation Table following a termination of employment for any reason.

Other Change-in-Control Payments

NEOs will be entitled to accelerated vesting of their outstanding unvested equity awards under the 2019 MIP in connection with certain corporate transactions or change-in-control transactions. In addition, under the 2016 LTIP Awards, the service components of the awards would be deemed satisfied upon a change-in-control transaction but the performance conditions would not be deemed satisfied upon a change-in-control transaction.

PAY RATIO DISCLOSURE

As required by Section 953(b) of the Dodd-Frank Wall Street Reform and Consumer Protection Act, and Item 402(u) of Regulation S-K, following is information about the relationship of the annual total compensation of our employees and the total compensation of Mr. Craig Rogerson, our CEO. The pay ratio included in this information is a reasonable estimate calculated in a manner consistent with Item 402(u) of Regulation S-K.

For the most recently completed fiscal year ended December 31, 2019:

- The median of the annual total compensation of all our employees (other than our CEO) was \$73,329; and
- The total compensation of our CEO was \$26,210,518.

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Pay Ratio

Annual Total Compensation of Mr. Rogerson, our CEO	Median of the Annual Total Compensation of All Employees	Pay Ratio
\$26,210,518	\$73,329	357

Methodology

As there have been no changes in the employee population or the employee compensation arrangements that would significantly impact the pay ratio disclosure, as permitted by Item 402(u) of Regulation S-K, we have used the same median employee identified last year. December 2019 year-to-date average foreign exchange rates were used to translate the local currency to U.S dollars for the median paid employee's annual total compensation. The pay ratio increased from 34 to 1 in 2018 to 357 to 1 in 2019, primarily due to the one-time stock awards granted to Mr. Rogerson in 2019.

The table below lists the components of total compensation for Mr. Rogerson:

Compensation Component	Annualized Amount
Salary	\$ 1,125,000
Stock Awards	23,814,996
Non-Equity Incentive Plan	1,068,178
Change in Pension Value and Non-qualified Deferred Compensation Earnings	330
<i>All Other Compensation:</i>	
Employer 401(k) match (<i>qualified plan</i>)	14,000
Employer annual retirement contribution (<i>qualified plan</i>)	8,400
Employer supplemental executive retirement plan contribution, including interest credits (<i>non-qualified plan</i>)	89,530
Commuting and housing allowance, including tax gross-up	90,084
Total annualized compensation	\$ 26,210,518

DIRECTOR COMPENSATION

The following table presents information regarding the compensation earned or paid during 2019 to our directors who are not also NEOs and who served on the Board of Directors of Hexion Holdings during the year.

Name	Fees Earned or Paid in Cash (\$)	Total (\$)
Carol S. Eicher ⁽¹⁾	58,750	58,750
Patrick Bartels ⁽¹⁾	62,500	62,500
Joaquin Delgado ⁽¹⁾	55,000	55,000
Jeffrey D. Benjamin ⁽¹⁾	85,000	85,000
James N. Chapman ⁽¹⁾	70,000	70,000
Stephen D. Newlin ⁽¹⁾	55,000	55,000
Michael J. Shannon ⁽¹⁾	62,500	62,500
John K. Wulf ⁽¹⁾	65,000	65,000
Robert Kaslow-Ramos ⁽²⁾	43,750	43,750
William Joyce ⁽²⁾	32,500	32,500
Marv Schlanger ⁽²⁾	32,500	32,500
Geoff Manna ⁽²⁾	43,500	43,500
Samuel Feinstein ⁽²⁾	30,500	30,500
Lee Stewart ⁽²⁾	41,500	41,500

(1) In conjunction with Emergence the Company appointed a new board of directors effective July 2, 2019.

(2) Represent Directors of Hexion Holdings LLC prior to Emergence.

Narrative to the Director Compensation Table

The members of the new independent board of directors were selected based on their qualifications and prior experience in the chemical industry and prior service on similar boards. The Company engaged a consultant to assist with determining our new directors' compensation arrangements based on a review and analysis of the director compensation arrangements of the Company's peer group of companies. Based on that analysis and the consultant's recommendation, as well as the level of activity expected of the Company's directors over the next few years, the Company adopted the following compensation arrangement for directors which will be evaluated on an annual basis:

Compensation Type	Amount (\$)
Regular Board Service Annual Cash Retainer	100,000
Regular Board Service Annual Equity Grant	110,000
Lead Director Annual Cash Retainer	130,000
Lead Director Annual Equity Grant	140,000
Audit Committee Chair Retainer	25,000
Compensation Committee Chair Retainer	20,000
Nominating & Governance Committee Chair Retainer	12,500
Environmental, Health & Safety Committee Chair Retainer	20,000
Listing Committee Chair Retainer	25,000
Audit Committee Member Retainer	10,000
Listing Committee Member Retainer	10,000
Compensation Committee Member Retainer	5,000
Nominating & Governance Committee Member Retainer	5,000
Environmental, Health & Safety Committee Member Retainer	5,000

During 2019, there were no stock or option awards granted to directors, and there are no outstanding, unvested stock awards held by these directors.

COMPENSATION COMMITTEE INTERLOCKS AND INSIDER PARTICIPATION

Messrs. Benjamin, Chapman, Newlin, and Wulff, whose names appear on the Compensation Committee Report above, are not employed by Hexion Holdings. None of these directors is or has been an executive officer of the Company. None of our executive officers served as a director or a member of a compensation committee (or other committee serving an equivalent function) of any other entity, the executive officers of which served as a director or member of our Compensation Committee during the fiscal year ended December 31, 2019.

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ITEM 12 - SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

Hexion Holdings is our ultimate parent company and indirectly owns 100% of our capital stock. The following table sets forth information available to the Company regarding the beneficial ownership of Hexion Holdings common units, as of December 31, 2019, and shows the number of Class B common Stock and percentage owned by:

- each person known to beneficially own more than 5% of the Class B common Stock of Hexion Holdings;
- each of Hexion's 2019 Named Executive Officers;
- each current member of the Board of Directors of Hexion Holdings; and
- all of the executive officers and current members of the Board of Directors of Hexion Holdings as a group.

As of December 31, 2019, Hexion Holdings had 58,493,064 Class B common Stock issued and outstanding and 10,225,445 outstanding warrants. The amounts and percentages of common units beneficially owned are reported on the basis of regulations of the SEC governing the determination of beneficial ownership of securities. Under the rules of the SEC, a person is deemed to be a "beneficial owner" of a security if that person has or shares "voting power," which includes the power to vote or to direct the voting of such security, or "investment power," which includes the power to dispose of or to direct the disposition of such security. A person is also deemed to be a beneficial owner of any securities of which that person has a right to acquire beneficial ownership within 60 days. Under these rules, more than one person may be deemed a beneficial owner of the same securities and a person may be deemed a beneficial owner of securities as to which he has no economic interest. Except as otherwise indicated in the footnotes below, each of the beneficial owners has, to our knowledge, sole voting and investment power with respect to the indicated Class B common Stock, and has not pledged any such units as security.

Name of Beneficial Owner	Beneficial Ownership of Equity Securities	
	Amount of Beneficial Ownership	Percent of Class
Funds affiliated with Goldentree Asset Management, LP ⁽¹⁾	12,001,725	19.0%
Funds affiliated with Cyrus Capital Partners, L.P. ⁽²⁾	8,642,130	13.8%
Funds affiliated with Monarch Alternative Capital LP ⁽³⁾	6,557,311	11.0%
Funds affiliated with GSO ⁽⁴⁾	5,568,963	9.5%
Funds Affiliated with Brigade Capital Management, L.P. ⁽⁵⁾	5,424,818	9.3%
Patrick J. Bartels ⁽⁷⁾	—	*
Jeffrey D. Benjamin ⁽⁷⁾	—	*
James N. Chapman ⁽⁷⁾	—	*
Joaquin Delgado ⁽⁷⁾	—	*
Carol S. Eicher ⁽⁷⁾	—	*
Michael J. Shannon ⁽⁷⁾	—	*
John K. Wulff ⁽⁷⁾	—	*
Stephen D. Newlin ⁽⁷⁾	—	*
Craig A. Rogerson ⁽⁸⁾	—	*
George F. Knight ⁽⁸⁾	—	*
John P. Auletto ⁽⁸⁾	—	*
Nathan E. Fisher ⁽⁸⁾	—	*
Douglas A. Johns ⁽⁸⁾	—	*
Matthew A. Sokol ⁽⁸⁾	—	*
Paul G. Barletta ⁽⁸⁾	—	*
Ann Frederix ⁽⁸⁾	—	*
All Directors and Executive Officers as a group	—	*

* less than 1%

- (1) Includes 4,762,314 shares issuable upon exercise of a warrants issued on July 1, 2019. The shares and warrants are owned by funds managed by GoldenTree Asset Management, LP, whose address is 300 Park Ave, New York, NY 10022.
- (2) Includes 4,151,668 shares issuable upon exercise of a warrants issued on July 1, 2019. The address of Cyrus Capital Partners, LP is 399 Park Avenue, 39th Floor, New York, NY 10022
- (3) Includes 1,311,463 shares issuable upon exercise of a warrants issued on July 1, 2019. Monarch Alternative Capital LP ("MAC") serves as advisor or agent to certain funds and entities that hold the securities referenced. By virtue of the agreements governing such relationships, MAC may be deemed to beneficially own such securities. MDRA GP LP ("MDRA GP") is the general partner of MAC and Monarch GP LLC ("Monarch GP") is the general

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partner of MDRA GP. By virtue of such relationships, MAC, MDRA GP and Monarch GP may be deemed to share voting and dispositive power over the securities. The address for these entities is 535 Madison Avenue, 26th Floor, New York, New York 10022.

- (4) Represents (i) 375,006 shares held directly by GSO Churchill Partners LP, (ii) 1,708,340 shares held directly by GSO Credit Alpha II Trading (Cayman) LP, and (iii) 3,485,617 shares held directly by GSO CSF III Holdco (Cayman) LP (and, collectively with GSO Churchill Partners LP and GSO Credit Alpha II Trading (Cayman) LP, the "GSO Funds"). GSO Churchill LLC is the general partner of GSO Churchill Partners LP. GSO Credit Alpha Associates II LP is the general partner of GSO Credit Alpha II Trading (Cayman) LP. The general partners of GSO Credit Alpha Associates II LP are GSO Credit Alpha Associates II (Delaware) LLC and GSO Credit Alpha Associates II (Cayman) Ltd. GSO Capital Solutions Associates III LP is the general partner of GSO CSF III Holdco (Cayman) LP. The general partners of GSO Capital Solutions Associates III LP are GSO Capital Solutions Associates III (Delaware) LLC and GSO Capital Solutions Associates III (Cayman) Ltd. GSO Holdings I L.L.C. is the managing member of each of GSO Churchill LLC, GSO Credit Alpha Associates II (Delaware) LLC and GSO Capital Solutions Associates III (Delaware) LLC, and a shareholder of each of GSO Credit Alpha Associates II (Cayman) Ltd. and GSO Capital Solutions Associates III (Cayman) Ltd. Blackstone Holdings II L.P. is the managing member of GSO Holdings I L.L.C. with respect to securities beneficially owned by the GSO Funds. Blackstone Holdings I/II GP L.L.C. is the general partner of Blackstone Holdings II L.P. The Blackstone Group Inc. is the sole member of Blackstone Holdings I/II GP L.L.C. Blackstone Group Management L.L.C. is the sole holder of the Class C common stock of The Blackstone Group Inc. Blackstone Group Management L.L.C. is wholly-owned by Blackstone's senior managing directors and controlled by its founder, Stephen A. Schwarzman. Each of the foregoing entities and Mr. Schwarzman disclaims beneficial ownership of the securities held directly by the GSO Funds (other than the GSO Funds to the extent of their direct holdings). The principal business address of each is 345 Park Avenue, New York, NY 10154.
- (5) Brigade is Brigade Capital Management, LP (on behalf of its various funds and accounts). The address is 399 Park Avenue, 16th Floor, New York, NY 10022.
- (6) The address for Messrs. Bartels, Benjamin, Chapman, Delgado, Shannon, Wulff, Newlin and Ms. Eicher is c/o Hexion Inc., 180 E. Broad St., Columbus, Ohio 43215
- (7) The address for Messrs. Rogerson, Knight, Auletto, Fisher, Johns, Sokol, Barletta, and Ms. Frederix is c/o Hexion Inc., 180 E. Broad St., Columbus, Ohio 43215.

As of December 31, 2019, we have no compensation plans that authorize issuing our common stock to employees or non-employees. In addition, there have been no sales or repurchases of our equity securities during the past fiscal year. However, we and our direct and indirect parent companies have in the past issued and may issue from time to time equity awards to our employees and directors that are denominated in or based upon the Class B common Stock of our direct or ultimate parent. As the awards were granted in exchange for service to us these awards are included in our consolidated financial statements. For a discussion of these equity plans see Note 14 in Item 8 of Part II and Item 11 of Part III of this Annual Report on Form 10-K.

ITEM 13 - CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

Review, Approval or Ratification of Transactions with Related Persons

We have a written Statement of Policy and Procedures Regarding Related Person Transactions that has been adopted by our Board of Directors.

The policy requires the Company to establish and maintain procedures for identifying potential or existing transactions between the Company and related persons. The policy generally adopts the definitions of "related person" and "transaction" set forth in Regulation S-K Item 404 under the Securities Act of 1933 and the Securities Exchange Act of 1934.

The types of transactions that are covered by our policy include financial and other transactions, arrangements or relationships in which the Company or any of its subsidiaries is a participant and in which a related person has a direct or indirect material interest, where the amount involved exceeds \$75,000.

Related persons include directors and director nominees, executive officers, shareholders beneficially owning more than 5% of the Company's voting stock, and immediate family members of any of the previously described persons. A related person could also be an entity in which a director, executive officer or 5% shareholder is an employee, general partner or 5% shareholder.

Transactions identified by management that are between the Company and a related person that involve amounts exceeding \$75,000 will be reviewed by the Board of Directors, the Audit Committee, or another appropriate committee of the Board of Directors. In certain situations, the Board or a committee may delegate authority to an individual Board member to review related person transactions.

Under the policy, the Board of Directors or a committee of the Board of Directors is directed to approve only those related person transactions that are determined by them in good faith to be in, or not inconsistent with, the best interest of the Company and its shareholders. In making this determination, all available, relevant facts and circumstances will be considered, including the benefits to the Company; the impact of the transaction on the related person's independence; the availability of other sources of comparable products or services; the terms of the transaction; and the terms available to unrelated third parties or to employees in general.

Our policy recognizes that there are situations where related person transactions may be in, or may not be inconsistent with, the best interests of the Company and its shareholders, especially while we are a "controlled company."

There were no material related person transactions where our policies and procedures did not require review, approval or ratification or where such policies and procedures were not followed.

Related Transactions

Management Consulting Agreement

We are subject to an Amended and Restated Management Consulting Agreement with Apollo (the "Management Consulting Agreement") that renews on an annual basis, unless notice to the contrary is given by either party. Under the Management Consulting Agreement, we receive certain structuring and advisory services from Apollo and its affiliates. The Management Consulting Agreement provides indemnification to Apollo, its affiliates and their directors, officers and representatives for potential losses arising from these services. Apollo is entitled to an annual fee equal to the greater of \$3 million or 2% of our Adjusted EBITDA. In conjunction with the Chapter 11 proceedings and the Support Agreement filed on April 1, 2019, Apollo agreed to waive its annual management fee for 2019. As of the Company's emergence from bankruptcy on July 1, 2019, Apollo is no longer a related party to the Company.

Pursuant to the Support Agreement, Apollo will receive a \$2.5 senior unsecured note maturing on March 31, 2020, payable upon the earlier of the maturity date or an initial public offering or listing on NYSE or NASDAQ. This note was paid in full in December 2019.

Purchases and Sales of Products and Services with Apollo Affiliates

We sell products to various Apollo affiliates other than MPM. These sales were \$1 million for the period January 1, 2019 through July 1, 2019. There were no purchases for the period January 1, 2019 through July 1, 2019.

Shared Services Agreement and Other Agreements with MPM and its Subsidiaries

On October 1, 2010, we entered into a shared services agreement with Momentive Performance Materials Inc. ("MPM") (which, from October 1, 2010 through October 24, 2014, was a subsidiary of Hexion Holdings), as amended in October 2014 (the "Shared Services Agreement"). Under this agreement, we provide to MPM, and MPM provides to us, certain services, including, but not limited to, executive and senior management, administrative support, human resources, information technology support, accounting, finance, legal and procurement services. The Shared Services Agreement establishes certain criteria upon which the costs of such services are allocated between the parties.

On February 11, 2019, MPM provided notice of its intention to terminate the Shared Services Agreement, effective March 14, 2019. The termination triggers a period of up to 14 months during which time the parties will work together to facilitate an orderly transition of services provided under the Shared Services Agreement.

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As of May 15, 2019, MPM is no longer under the common control of Apollo and no longer a related party to us. During the period January 1, 2019 through July 1, 2019, we earned \$1 million from MPM as compensation for acting as distributor of products. During the period January 1, 2019 through July 1, 2019, we had \$10 million of purchases from MPM.

Other Transactions and Arrangements

We sell products and provide services to, and purchase products from, our other joint ventures which are recorded under the equity method of accounting. These sales were \$2 million for both the period July 2, 2019 through December 31, 2019 and January 1, 2019 through July 1, 2019. Accounts receivable from these joint ventures were \$1 million at December 31, 2019. These purchases were \$2 million for both the period July 2, 2019 through December 31, 2019 and January 1, 2019 through July 1, 2019. We had accounts payable to these joint ventures of less than \$1 million at December 31, 2019.

We had a loan receivable of \$7 million from our unconsolidated forest products joint venture in Russia as of December 31, 2019.

Director Independence

We and Hexion Holdings have no securities listed for trading on a national securities exchange or in an automated inter-dealer quotation system of a national securities association which has requirements that a majority of our Board of Directors or Board of Managers be independent. However, for purposes of complying with the disclosure requirements of the Securities and Exchange Commission, we and Hexion Holdings have adopted the definition of independence used by the New York Stock Exchange. Under the New York Stock Exchange's definition of independence, Messrs. Bartels, Benjamin, Chapman, Delgado, Shannon, Wulff, Newlin and Ms. Eicher are independent.

ITEM 14 - PRINCIPAL ACCOUNTING FEES AND SERVICES

PricewaterhouseCoopers LLP ("PwC") is the Company's principal accounting firm. The following table sets forth the fees billed by PwC to the Company in 2019 and 2018 (in millions):

	PwC	
	2019	2018
Audit fees ⁽¹⁾	\$ 7.0	\$ 4.5
Audit-related fees ⁽²⁾	0.2	2.0
Tax fees ⁽³⁾	1.5	0.5
Other fees ⁽⁴⁾	0.1	1.7
Total	\$ 8.8	\$ 8.7

- (1) **Audit Fees:** This category includes fees and expenses billed by PwC for the audits of the Company's financial statements and for the reviews of the financial statements included in the Company's Quarterly Reports on Form 10-Q. This category includes audit fees and expenses for engagements performed at U.S. and international locations, including stand-alone audit of Hexion International Cooperatief U.A. for the fiscal year ended December 31, 2018.
- (2) **Audit-Related Fees:** This category includes fees and expenses billed by PwC for assurance and related services that are reasonably related to the performance of the audit or review of the Company's financial statements. This category includes fees for the reviews of SEC registration statements and other SEC reporting services as well as audit fees for other stand-alone financial statements of certain entities of the registrant.
- (3) **Tax Fees:** This category includes fees and expenses billed by PwC for domestic and international tax compliance, planning services, tax advice and assistance with bankruptcy.
- (4) **Other Fees:** This category includes other fees billed for non-recurring work, related to transactions, due diligence or other one-time services.

Pre-Approval Policy and Procedures

Under a policy adopted by the Audit Committee, all audit and non-audit services provided by our principal accounting firms must be pre-approved by the Audit Committee or a member designated by the Audit Committee. All services pre-approved by the designated member are reported to the full Audit Committee at its next regularly scheduled meeting. The pre-approval of audit and non-audit services may be made at any time up to a year before the commencement of the specified service. Under the policy, the Company is prohibited from using its principal accounting firms for certain non-audit services, the list of which is based upon the list of prohibited activities in the SEC's rules and regulations. Pursuant to the pre-approval provisions set forth above, the Audit Committee approved all services related to the Audit Fees described in (1) above.

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PART IV

ITEM 15 - EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

- (1) Consolidated Financial Statements – The financial statements and related notes of Hexion Inc., and the reports of independent registered public accounting firms are included at Item 8 of this report.
- (2) Financial Statement Schedules – Schedule II – Valuation and Qualifying Accounts and Reserves. All other schedules are omitted because they are not applicable or not required, or because that required information is shown in either the Consolidated Financial Statements or in the notes thereto.
- (3) Exhibits Required by SEC Regulation S-K – The following Exhibits are filed herewith or incorporated herein by reference:

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	File Number	Exhibit	Filing Date	
2.1†	Transaction Agreement dated as of April 22, 2005 among RPP Holdings, Resolution Specialty Materials Holdings LLC, BHI Acquisition Corp., BHI Merger Sub One, BHI Merger Sub Two Inc. and Borden Chemical Inc.	S-1/A	333-124287	2.1	7/15/2005	
2.2†	SOC Resins Master Sale Agreement dated July 10, 2000 among Shell Oil Company, Resin Acquisition, LLC and Shell Epoxy Resins Inc.	S-4	333-57170	2.1	3/16/2001	
2.3†	SPNV Resins Sale Agreement dated as of September 11, 2000 between Shell Petroleum N.V. and Shell Epoxy Resins Inc.	S-4	333-57170	2.2	3/16/2001	
2.4	Assignment and Assumption Agreement dated November 13, 2000 between Shell Epoxy Resins Inc. and Shell Epoxy Resins LLC	S-4	333-57170	2.3	3/16/2001	
2.5	Assignment and Assumption Agreement dated November 14, 2000 between Resin Acquisition, LLC and RPP Holdings LLC	S-4	333-57170	2.4	3/16/2001	
3.1	Restated Certificate of Incorporation of Hexion Inc. dated as of January 15, 2015	10-K	001-00071	3.1	3/10/2015	
3.2	Amended and Restated Bylaws of Hexion Inc.	10-K	001-00071	3.2	3/10/2015	
4.1	Form of Indenture between Borden, Inc. and The Bank of New York, as Trustee, dated as of December 15, 1987, as supplemented by the First Supplemental Indenture dated as of December 15, 1987, the Second Supplemental Indenture dated as of February 1, 1993 and the Third Supplemental Indenture dated as of June 26, 1996, related to the \$200,000,000 9.20% Debentures due 2021 and \$750,000,000 7.875% Debentures due 2023	S-3	33-45770	4(a) thru 4(d)		
4.2	Indenture, dated as of January 29, 2010, by and among Hexion Finance Escrow LLC, Hexion Escrow Corporation and Wilmington Trust FSB, as trustee, related to the \$1,000,000,000 8.875% Senior Secured Notes due 2018	8-K	001-00071	4.1	2/4/2010	
4.3	Supplemental Indenture, dated as of January 29, 2010, by and among Hexion U.S. Finance Corp., Hexion Nova Scotia Finance, ULC, the guarantors party thereto and Wilmington Trust FSB, as trustee, related to the 8.875% Senior Secured Notes due 2018	8-K	001-00071	4.2	2/4/2010	
4.4	Supplemental Indenture, dated as of June 4, 2010, by and among NL COOP Holdings LLC, Hexion U.S. Finance Corp., Hexion Nova Scotia Finance, ULC, the guarantors party thereto and Wilmington Trust Company, as trustee, related to the 8.875 Senior Secured Notes due 2018	8-K	001-00071	4.1	6/9/2010	
4.5	Second Supplemental Indenture, dated as of January 14, 2013, among Hexion U.S. Finance Corp., Hexion Nova Scotia Finance, ULC, Momentive Specialty Chemicals Inc., the subsidiary guarantors party thereto and Wilmington Trust, National Association, as trustee, related to the additional \$200,000,000 8.875% Senior Secured Notes due 2018	8-K	001-00071	4.1	1/18/2013	
4.6	Third Supplemental Indenture, dated as of December 2, 2014, by and among Momentive Specialty Chemicals Inc., Hexion Nova Scotia Finance ULC, the guarantors party thereto and Wilmington Trust, National Association, as trustee, related to the 8.875% Senior Secured Notes due 2018	8-K	001-00071	4.2	12/5/2014	
4.7	Indenture, dated as of November 5, 2010, among Hexion U.S. Finance Corp., Hexion Nova Scotia Finance, ULC, the Company, the guarantors named therein and Wilmington Trust Company, as trustee, related to the \$574,016,000 9.0% Second-Priority Senior Secured Notes due 2020	8-K	001-00071	4.1	11/12/2010	
4.8	First Supplemental Indenture, dated as of December 2, 2014, by and among Momentive Specialty Chemicals Inc., Hexion Nova Scotia Finance ULC, the guarantors party thereto and Wilmington Trust Company, as trustee, related to the 9.00% Second-Priority Senior Secured Notes due 2020	8-K	001-00071	4.3	12/2/2014	
4.9	Second Supplemental Indenture, dated as of June 19, 2018 among Hexion Deer Park LLC, Hexion Inc, Hexion Nova Scotia Finance, ULC and Wilmington Trust Company, as trustee.	10-Q	001-00071	4.5	11/13/2018	

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Exhibit Number	Exhibit Description	Incorporated by Reference				
		Form	File Number	Exhibit	Filing Date	Filed Herewith
4.10	Indenture, dated as of March 14, 2012, among Hexion U.S. Finance Corp., Momentive Specialty Chemicals Inc., the guarantors named therein and Wilmington Trust, National Association, as trustee, related to the \$450,000,000 First-Priority Senior Secured Notes due 2020	8-K	001-00071	4.1	3/20/2012	
4.11	First Supplemental Indenture, dated as of January 31, 2013, among Hexion U.S. Finance Corp., Momentive Specialty Chemicals Inc., the subsidiary guarantors party thereto and Wilmington Trust, National Association, as trustee, related to the additional \$1,100,000,000 First-Priority Senior Secured Notes due 2020	8-K	001-00071	4.1	2/6/2013	
4.12	Second Supplemental Indenture, dated as of March 28, 2013, by and among Hexion U.S. Finance Corp., the guarantors party thereto and Wilmington Trust, National Association, as trustee, related to the 6.625% First-Priority Senior Secured Notes due 2020	8-K	001-00071	4.1	4/3/2013	
4.13	Third Supplemental Indenture, dated as of December 2, 2014, by and among Momentive Specialty Chemicals Inc., the guarantors party thereto and Wilmington Trust, National Association, as trustee, related to the 6.625% First-Priority Senior Secured Notes due 2020	8-K	001-00071	4.1	12/2/2014	
4.14	Fourth Supplemental Indenture, dated as of June 19, 2018, among Hexion Deer Park LLC, Hexion Inc. and Wilmington Trust, National Association, as trustee.	10-Q	001-00071	4.1	11/13/2018	
4.15	Indenture, dated as of April 15, 2015, by and among Hexion Inc., the Guarantors named therein and Wilmington Trust, National Association, as trustee, related to the \$315,000,000 10.00% First-Priority Senior Secured Notes due 2020	8-K	001-00071	4.1	4/15/2015	
4.16	First Supplemental Indenture, dated as of June 19, 2018, among Hexion Inc., Hexion Deer Park LLC and Wilmington Trust, National Association, as trustee.	10-Q	001-00071	4.2	11/13/2018	
4.17	Indenture, dated as of February 8, 2017, between Hexion 2 U.S. Finance Corp. and Wilmington Trust, National Association, as trustee, related to the \$485,000,000 10.375% First-Priority Senior Secured Notes due 2022.	8-K	001-00071	4.1	2/10/2017	
4.18	Supplemental Indenture, dated as of February 8, 2017, among Hexion Inc., the guarantors party thereto and Wilmington Trust, National Association, as trustee, related to the \$485,000,000 10.375% First-Priority Senior Secured Notes due 2022.	8-K	001-00071	4.2	2/10/2017	
4.19	Second Supplemental Indenture, dated as of May 12, 2017, by and among Hexion Inc., the guarantors party thereto and Wilmington Trust, National Association, as trustee, related to the \$75,000,000 additional 10.375% First-Priority Senior Secured Notes due 2022.	8-K	001-00071	4.1	5/12/2017	
4.20	Third Supplemental Indenture, dated as of June 19, 2018, among Hexion Inc., Hexion Deer Park LLC and Wilmington Trust, National Association, as trustee.	10-Q	001-00071	4.3	11/13/2018	
4.21	Indenture, dated as of February 8, 2017, among Hexion Inc., the guarantors named therein and Wilmington Trust, National Association, as trustee, related to the \$225,000,000 13.75% Senior Secured Notes due 2022.	8-K	001-00071	4.3	2/10/2017	
4.22	First Supplemental Indenture, dated as of June 19, 2018, among Hexion Inc., Hexion Deer Park LLC and Wilmington Trust, National Association, as trustee.	10-Q	001-00071	4.4	11/13/2018	
4.23	Indenture, dated as of July 1, 2019, by and among Hexion Inc., the subsidiary guarantors party thereto from time to time named therein and Wilmington Trust, National Association as Trustee, related to the \$	8-K	001-00071	4.1	7/2/2019	
4.24	Agreement of Resignation, Appointment and Acceptance, dated as of March 29, 2019, among Hexion Inc., Wilmington Trust, National Association and Wilmington Savings Fund Society, FSB, related to the 13.75% Senior Secured Notes due 2022.	8-K	001-00071	4.1	4/1/2019	
4.25	Agreement of Resignation, Appointment and Acceptance, dated as of April 9, 2019, among Hexion Inc., Wilmington Trust, National Association and U.S. Bank National Association, related to the 6.625% First-Priority Senior Secured Notes due 2020, the 10.00% First-Priority Senior Secured Notes due 2020 and the 10.375% First-Priority Senior Secured Notes due 2022.	10-K	001-00071	4.24	4/11/2019	
10.1‡	BHI Acquisition Corp. 2004 Deferred Compensation Plan	10-Q	001-00071	10(iv)	11/15/2004	
10.2‡	BHI Acquisition Corp. 2004 Stock Incentive Plan	10-Q	001-00071	10(v)	11/15/2004	
10.3‡	Resolution Performance Products Inc. 2000 Stock Option Plan	S-4	333-57170	10.26	3/16/2001	
10.4‡	Resolution Performance Products Inc. 2000 Non - Employee Directors Stock Option Plan	S-4	333-57170	10.27	3/16/2001	
10.5‡	Amended and Restated Resolution Performance Products, Inc. Restricted Unit Plan, as amended and restated May 31, 2005	S-1/A	333-124287	10.34	9/19/2005	

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Exhibit Number	Exhibit Description	Incorporated by Reference				
		Form	File Number	Exhibit	Filing Date	Filed Herewith
10.6†	Form of Non-Qualified Stock Option Agreement between BHI Acquisition Corp. and certain optionees	S-4	333-122826	10.12	2/14/2005	
10.7†	Resolution Specialty Materials Inc. 2004 Stock Option Plan	S-1/A	333-124287	10.52	7/15/2005	
10.8†	Form of Nonqualified Stock Option Agreement for Resolution Specialty Materials Inc. 2004 Stock Option Plan	S-1/A	333-124287	10.53	7/15/2005	
10.9†	Form of Nonqualified Stock Option Agreement for Resolution Performance Products Inc. 2000 Stock Option Plan	S-1/A	333-124287	10.54	7/15/2005	
10.10†	Form of Nonqualified Stock Option Agreement for Resolution Performance Products Inc. 2000 Non-Employee Director Stock Option Plan	S-1/A	333-124287	10.55	7/15/2005	
10.11†	Hexion LLC 2007 Long-Term Incentive Plan dated April 30, 2007	10-Q	001-00071	10.1	8/14/2007	
10.12	Amended and Restated Investor Rights Agreement dated as of May 31, 2005 between Hexion LLC, Hexion Specialty Chemicals, Inc. and the holders that are party thereto	S-1/A	333-124287	10.63	7/15/2005	
10.13	Registration Rights Agreement dated as of May 31, 2005 between Hexion Specialty Chemicals, Inc. and Hexion LLC	S-1/A	333-124287	10.64	7/15/2005	
10.14†	Amended and Restated Executives' Supplemental Pension Plan for Hexion Specialty Chemicals, Inc., dated as of September 7, 2005	8-K	001-00071	10	9/12/2005	
10.15†	Amended and Restated Employment Agreement dated as of August 12, 2004 between Hexion Specialty Chemicals, Inc. and Joseph P. Bevilacqua	10-Q	001-00071	10(ii)	11/15/2004	
10.16†	Summary of Terms of Employment between Hexion Specialty Chemicals, Inc. and Joseph P. Bevilacqua dated August 10, 2008	10-K	001-00071	10.23	3/9/2010	
10.17†	Momentive Specialty Chemicals Inc. Supplemental Executive Retirement Plan, dated as of December 31, 2011	8-K	001-00071	99.1	1/6/2012	
10.18	Master Asset Conveyance and Facility Support Agreement, dated as of December 20, 2002, between Borden Chemical and Borden Chemicals and Plastics Operating Limited Partnership	10-K	001-00071	(10)(xxvi)	3/28/2003	
10.19	Environmental Servitude Agreement, dated as of December 20, 2002, between Borden Chemical and Borden Chemicals and Plastics Operating Limited Partnership	10-K	001-00071	(10)(xxvii)	3/28/2003	
10.20	Intellectual Property Transfer and License Agreement and Contribution Agreement dated as of November 14, 2000 between Shell Oil Company and Shell Epoxy Resins LLC	S-4	333-57170	10.13	3/16/2001	
10.21	Intellectual Property Transfer and License Agreement and Contribution Agreement dated as of November 14, 2000 between Shell Internationale Research Maatschappij B.V. and Shell Epoxy Resins Research B.V.	S-4	333-57170	10.14	3/16/2001	
10.22	First Amended and Restated Deer Park Site Services, Utilities, Materials and Facilities Agreement dated November 1, 2000 between Shell Chemical Company, for itself and as agent for Shell Oil Company, and Shell Epoxy Resins LLC	S-4	333-57170	10.19	3/16/2001	
10.23	First Amended and Restated Pernis Site Services, Utilities, Materials and Facilities Agreement dated November 1, 2000 between Resolution Europe B.V. (f/k/a Resolution Nederland B.V., f/k/a Shell Epoxy Resins Nederland B.V.) and Shell Nederland Raffinaderij B.V.	S-4	333-57170	10.21	3/16/2001	
10.24	First Amended and Restated Pernis Site Services, Utilities, Materials and Facilities Agreement dated November 1, 2000 between Resolution Europe B.V. (f/k/a Resolution Nederland B.V., f/k/a Shell Epoxy Resins Nederland B.V.) and Shell Nederland Chemie B.V.	S-4	333-57170	10.22	3/16/2001	
10.25†	Second Amended and Restated Norco Site Services, Utilities, Materials and Facilities Agreement dated November 1, 2004 between Shell Chemical L.P. and Resolution Performance Products LLC.	10-K	001-00071	10.45	3/22/2007	
10.26	Deer Park Ground Lease and Grant of Easements dated as of November 1, 2000 between Shell Oil Company and Shell Epoxy Resins LLC	S-4	333-57170	10.23	3/16/2001	
10.27	Norco Ground Lease and Grant of Servitudes dated as of November 1, 2000 between Shell Oil Company and Shell Epoxy Resins LLC	S-4	333-57170	10.24	3/16/2001	
10.28	Amended and Restated Agreement of Sub-Lease (Pernis) dated as of November 1, 2000 between Resolution Europe B.V. (f/k/a Resolution Nederland B.V., f/k/a Shell Epoxy Resins Nederland B.V.) and Shell Nederland Raffinaderij B.V.	S-4	333-57170	10.25	3/16/2001	
10.29	Amended and Restated Management Consulting Agreement dated as of May 31, 2005 between Borden Chemical, Inc. and Apollo Management V, L.P.	S-1/A	333-124287	10.66	7/15/2005	
10.30	Collateral Agreement dated as of November 3, 2006 among Hexion Specialty Chemicals, Inc. and subsidiary parties thereto, and Wilmington Trust Company, as Collateral Agent	10-K	001-00071	10.57	3/11/2009	

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Exhibit Number	Exhibit Description	Incorporated by Reference				
		Form	File Number	Exhibit	Filing Date	Filed Herewith
10.31	Credit Agreement with exhibits and schedules dated as of March 3, 2009 among Hexion Specialty Chemicals, Inc., Borden Luxembourg S.a.r.l., Euro V (BC) S.a.r.l., Euro VI (BC) S.a.r.l. and AAA Co-Invest VI (EHS-BC) S.a.r.l.	10-Q	001-00071	10.4	8/13/2009	
10.32	SUPPLEMENT dated as of June 4, 2010, to the Collateral Agreement dated as of November 3, 2006, among HEXION SPECIALTY CHEMICALS, INC., a New Jersey corporation, each Subsidiary Party party thereto and WILMINGTON TRUST COMPANY, as Collateral Agent (in such capacity, the "Collateral Agent") for the Secured Parties (as defined therein)	8-K	001-00071	10.5	6/9/2010	
10.33	Joinder and Supplement to Collateral Agreement dated November 5, 2010 among the Company and subsidiary parties thereto, and Wilmington Trust Company, as trustee and collateral agent	8-K	001-00071	10.2	11/12/2010	
10.34†	Form of Restricted Deferred Unit Award Agreement of Momentive Performance Materials Holdings LLC	S-4	333-172943	10.70	3/18/2011	
10.35†	Form of Unit Option Agreement of Momentive Performance Materials Holdings LLC	S-4	333-172943	10.71	3/18/2011	
10.36†	Form of Director Unit Option Agreement of Momentive Performance Materials Holdings LLC	S-4	333-172943	10.72	3/18/2011	
10.37†	Management Investor Rights Agreement, dated as of February 23, 2011 by and among Momentive Performance Materials Holdings LLC and the Holders	S-4	333-172943	10.73	3/18/2011	
10.38	Master Confidentiality and Joint Development Agreement entered into on March 17, 2011 by and between Momentive Performance Materials Inc. and Momentive Specialty Chemicals Inc.	8-K	001-00071	10.2	3/17/2011	
10.39	Fourth Joinder and Supplement to Intercreditor Agreement, dated as of March 14, 2013, by and among Wilmington Trust, National Association, as trustee, JPMorgan Chase Bank N.A., as intercreditor agent, Wilmington Trust Company, as trustee and collateral agent and as second-priority agent, Momentive Specialty Chemicals Holdings LLC, Momentive Specialty Chemicals Inc. and each subsidiary of Momentive Specialty Chemicals Inc. party thereto.	8-K	001-00071	10.5	3/20/2012	
10.40†	First Amended Resolution Specialty Materials Inc 2004 Stock Option Plan	10-Q	001-00071	10.1	11/13/2012	
10.41†	First Amended Hexion LLC 2007 Long-Term Incentive Plan	10-Q	001-00071	10.2	11/13/2012	
10.42	Fifth Joinder and Supplement to Intercreditor Agreement, dated January 14, 2013, by and among Wilmington Trust, National Association, as trustee, JPMorgan Chase Bank N.A., as intercreditor agent, Wilmington Trust, National Association, as trustee and collateral agent and as second-priority agent, Momentive Specialty Chemicals Holdings LLC, Momentive Specialty Chemicals Inc. and each subsidiary of Momentive Specialty Chemicals Inc. party thereto.	8-K	001-00071	10.2	1/18/2013	
10.43	Amended and Restated Intercreditor Agreement, dated as of January 31, 2013, among JPMorgan Chase Bank, N.A., as intercreditor agent, Wilmington Trust Company, as trustee and as collateral agent, Wilmington Trust, National Association (as successor by merger to Wilmington Trust FSB), as senior-priority agent for the holders of the notes issued under the 1.5 Lien Indenture (as defined therein), Wilmington Trust, National Association, as senior-priority agent for the holders of the notes issued under the First Lien Indenture (as defined therein), Momentive Specialty Chemicals Holdings LLC, Momentive Specialty Chemicals Inc. and subsidiaries of Momentive Specialty Chemicals Inc. party thereto.	8-K	001-00071	10.1	2/6/2013	
10.44	Additional Secured Party Consent, dated January 31, 2013, among Wilmington Trust Bank, National Association, as trustee and as authorized representative, JPMorgan Chase Bank, N.A., as applicable first lien representative and collateral agent, Momentive Specialty Chemicals Holdings LLC, Momentive Specialty Chemicals Inc. and subsidiaries of Momentive Specialty Chemicals Inc. party thereto.	8-K	001-00071	10.2	2/6/2013	
10.45	Amendment No. 1 to the Momentive Performance Materials Holdings LLC 2011 Equity Incentive Plan	8-K	001-00071	10.1	3/6/2013	
10.46	Form of Restricted Deferred Unit Agreement of Momentive Performance Materials Holdings LLC	8-K	001-00071	10.2	3/6/2013	
10.47	Form of Unit Option Agreement of Momentive Performance Materials Holdings LLC	8-K	001-00071	10.3	3/6/2013	
10.48†	Momentive Performance Materials Holdings LLC 2012 Long-Term Cash Incentive Plan	10-K	001-00071	10.92	4/1/2013	
10.49†	Amended and Restated Momentive Performance Materials Holdings LLC 2011 Equity Incentive Plan	10-K	001-00071	10.93	4/1/2013	

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Exhibit Number	Exhibit Description	Incorporated by Reference				
		Form	File Number	Exhibit	Filing Date	Filed Herewith
10.50	ABL Intercreditor Agreement, dated as of March 28, 2013, by and among JPMorgan Chase Bank, N.A., as the ABL facility collateral agent, Wilmington Trust, National Association, as applicable first-lien agent and first-lien collateral agent, Momentive Specialty Chemicals Inc. and subsidiaries of Momentive Specialty Chemicals Inc. party thereto.	8-K	001-00071	10.2	4/3/2013	
10.51	Collateral Agreement, dated as of March 28, 2013, by and among Momentive Specialty Chemicals Inc., subsidiaries of Momentive Specialty Chemicals Inc. party thereto and JPMorgan Chase Bank, N.A. as collateral agent.	8-K	001-00071	10.3	4/3/2013	
10.52	Collateral Agreement, dated as of March 28, 2013, by and among Momentive Specialty Chemicals Inc., subsidiaries of Momentive Specialty Chemicals Inc. party thereto and Wilmington Trust, National Association, as collateral agent.	8-K	001-00071	10.4	4/3/2013	
10.53	Joinder and Supplement to Second Lien Intercreditor Agreement, dated as of March 28, 2013, among JPMorgan Chase Bank, N.A., as ABL credit agreement agent, former intercreditor agent and new intercreditor agent, Wilmington Trust Company, as second-lien trustee, Wilmington Trust, National Association, as 1.5 lien trustee, Wilmington Trust, National Association, as first lien trustee, Momentive Specialty Chemicals Holdings LLC, Momentive Specialty Chemicals Inc. and subsidiaries of Momentive Specialty Chemicals Inc. party thereto.	8-K	001-00071	10.6	4/3/2013	
10.54†	Momentive Performance Materials Holdings LLC 2014 Incentive Compensation Plan	10-K	001-00071	10.87	3/31/2014	
10.55†	Second Amended and Restated Shared Services Agreement, dated as of October 24, 2014, by and among Momentive Specialty Chemicals Inc., Momentive Performance Materials Inc., and the subsidiaries of the Momentive Performance Materials Inc., party thereto	8-K	001-00071	10.1	10/30/2014	
10.56†	Momentive Performance Materials Holdings LLC Long-Term Cash Incentive Plan	10-Q	001-00071	10.1	11/10/2014	
10.57†	Form of 2014 Cash-based Long-Term Incentive Award Agreement	10-Q	001-00071	10.2	11/10/2014	
10.58†	Summary of Terms of Employment between Momentive Performance Materials Inc. and Douglas Johns dated October 3, 2010	10-K	001-00071	10.82	3/10/2015	
10.59	First Lien Intercreditor Agreement, dated as of April 15, 2015, among Wilmington Trust, National Association, as collateral agent, Wilmington	8-K	001-00071	10.1	4/15/2015	
10.60	Additional Secured Party Consent, dated April 15, 2015, among Wilmington Trust, National Association, as authorized representative for the new secured parties, Wilmington Trust, National Association, as collateral agent, and Hexion Inc.	8-K	001-00071	10.2	4/15/2015	
10.61	Fourth Joinder and Supplement to Intercreditor Agreement, dated as of April 15, 2015, by and among JPMorgan Chase Bank, N.A., as intercreditor agent, JPMorgan Chase Bank, N.A., as senior-priority agent for the ABL secured parties, Wilmington Trust, National Association, as senior-priority agent for the existing first lien notes, Wilmington Trust, National Association, as trustee and senior-priority agent for the new first lien notes, Wilmington Trust, National Association, as trustee and second-priority agent for the existing 1.5 lien notes, Hexion LLC, Hexion Inc. and subsidiaries of Hexion Inc. party thereto.	8-K	001-00071	10.3	4/15/2015	
10.62	Second Joinder and Supplement to Intercreditor Agreement, dated as of April 15, 2015, by and among JPMorgan Chase Bank, N.A., as intercreditor agent, JPMorgan Chase Bank, N.A., as senior-priority agent for the ABL secured parties, Wilmington Trust, National Association, as trustee and senior-priority agent for the existing first lien notes, Wilmington Trust, National Association, as senior-priority agent for the new first lien notes, Wilmington Trust, National Association, as senior-priority agent for the 1.5 lien notes, Wilmington Trust Company, as trustee and second-priority agent for the existing second lien notes, Hexion LLC, Hexion Inc. and subsidiaries of Hexion Inc. party thereto.	8-K	001-00071	10.4	4/15/2015	
10.63	Joinder Agreement to ABL Intercreditor Agreement, dated as of April 15, 2015, by and among JPMorgan Chase Bank, N.A., as ABL facility collateral agent, Wilmington Trust, National Association, as new representative, applicable first-lien agent and first-lien collateral agent, and Hexion Inc.	8-K	001-00071	10.5	4/15/2015	
10.64†	Hexion Holdings LLC 2015 Incentive Compensation Plan	10-Q	001-00071	10.1	5/13/2015	
10.65†	Summary of Terms of Employment between Hexion Inc. and Douglas A. Johns dated May 6, 2015	10-Q	001-00071	10.1	8/12/2015	
10.66	Amendment Agreement, dated as of July 27, 2015, among Hexion LLC, Hexion Inc., as U.S. borrower, Hexion Canada Inc., as Canadian borrower, Hexion B.V., as Dutch borrower, Hexion UK Limited and Borden Chemical UK Limited, as U.K. borrowers, Hexion GmbH, as German borrower, the other subsidiaries of Hexion LLC party thereto, as loan parties, the lenders party thereto and JPMorgan Chase Bank, N.A., as administrative agent and collateral agent.	10-Q	001-00071	10.2	8/12/2015	

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Exhibit Number	Exhibit Description	Incorporated by Reference				
		Form	File Number	Exhibit	Filing Date	Filed Herewith
10.67†	Summary of Terms of Employment between Hexion Inc. and George F. Knight dated October 22, 2015	10-K	001-00071	10.79	3/14/2016	
10.68	2015 Audited Financial Statements of Unconsolidated Affiliate of Hexion Inc.	10-K	001-00071	10.80	3/14/2016	
10.69†	Hexion Holdings LLC 2016 Incentive Compensation Plan	8-K	001-00071	10.2	5/6/2016	
10.70†	Form of 2016 Cash-Based Long-Term Incentive Award Agreement	10-Q	001-00071	10.1	11/14/2016	
10.71	Amendment Agreement, dated as of December 21, 2016, among Hexion LLC, certain subsidiaries of Hexion LLC party thereto, the lenders party thereto and JPMorgan Chase Bank, N.A., as administrative agent and collateral agent.	8-K	001-00071	10.1	12/23/2016	
10.72†	2016 Cash-Based Long-Term Incentive Award Agreement for Nathan E. Fisher dated January 3, 2017	10-K	001-00071	10.76	3/8/2017	
10.73	2016 Audited Financial Statements of Unconsolidated Affiliate of Hexion Inc.	10-K	001-00071	10.77	3/8/2017	
10.74	Additional Secured Party Consent, dated as of February 8, 2017, among Wilmington Trust, National Association, as authorized representative for the new secured parties, Wilmington Trust, National Association, as collateral agent, Wilmington Trust, National Association, as authorized representative of the new secured parties, Wilmington Trust, National Association, as authorized representative for the notes obligations, Wilmington Trust, National Association, as authorized representative for the initial other first priority obligations, Hexion Inc. and subsidiaries of Hexion Inc. party thereto.	8-K	001-00071	10.1	2/10/2017	
10.75	Third Joinder and Supplement to Intercreditor Agreement, dated as of February 8, 2017, by and among JPMorgan Chase Bank, N.A., as intercreditor agent, JPMorgan Chase Bank, N.A., as senior-priority agent for the ABL secured parties, Wilmington Trust, National Association, as trustee and senior-priority agent for the existing first lien notes, Wilmington Trust, National Association, as senior-priority agent for the new first lien notes, Wilmington Trust, National Association, as senior-priority agent for the new 1.5 lien notes, Wilmington Trust Company, as trustee and second-priority agent for the existing second lien notes, Hexion LLC, Hexion Inc. and subsidiaries of Hexion Inc. party thereto.	8-K	001-00071	10.2	2/10/2017	
10.76	Second Joinder Agreement to ABL Intercreditor Agreement, dated as of February 8, 2017, among JPMorgan Chase Bank, N.A., as ABL facility collateral agent, Wilmington Trust, National Association, as new representative, applicable first-lien agent and first-lien collateral agent, and Hexion Inc.	8-K	001-00071	10.3	2/10/2017	
10.77	Collateral Agreement, dated as of February 8, 2017, among Wilmington Trust, National Association, as collateral agent, Hexion Inc. and subsidiaries of Hexion Inc. party thereto.	8-K	001-00071	10.4	2/10/2017	
10.78	Amended and Restated Intercreditor Agreement, dated as of February 8, 2017, among JPMorgan Chase Bank, N.A., as intercreditor agent, JPMorgan Chase Bank, N.A., as senior-priority agent for the ABL secured parties, Wilmington Trust, National Association, as senior-priority agent for the existing first lien notes, Wilmington Trust, National Association, as trustee and senior-priority agent for the new first lien notes, Wilmington Trust, National Association, as trustee and second-priority agent for the new 1.5 lien notes, Hexion LLC, Hexion Inc. and subsidiaries of Hexion Inc. party thereto.	8-K	001-00071	10.5	2/10/2017	
10.79	Fourth Joinder and Supplement to Intercreditor Agreement, dated as of February 8, 2017, among JPMorgan Chase Bank, N.A., as intercreditor agent, JPMorgan Chase Bank, N.A., as senior-priority agent for the ABL secured parties, Wilmington Trust, National Association, as trustee and senior-priority agent for the existing first lien notes, Wilmington Trust, National Association, as senior-priority agent for the new first lien notes, Wilmington Trust, National Association, as senior-priority agent for the new 1.5 lien notes, Wilmington Trust Company, as trustee and second-priority agent for the existing second lien notes, Hexion LLC, Hexion Inc. and subsidiaries of Hexion Inc. party thereto.	8-K	001-00071	10.6	2/10/2017	
10.80	Additional Extending Lender Joinder Agreement and Amendment, dated as of January 18, 2017, related to the Amended and Restated Asset-Based Revolving Credit Agreement, dated as of December 21, 2016, among Hexion LLC, Hexion Inc., as U.S. Borrower, Hexion Canada Inc., as Canadian Borrower, Hexion B.V., as Dutch Borrower, Hexion UK Limited and Borden Chemical UK Limited, as UK Borrowers, Hexion GmbH, as German Borrower, each subsidiary loan party party thereto, the lenders party thereto from time to time and JPMorgan Chase Bank, N.A., as administrative agent, collateral agent, swingline lender and initial issuing bank.	10-K	001-00071	10.84	3/8/2017	
10.81†	Hexion Holdings LLC 2017 Incentive Compensation Plan	10-Q	001-00071	10.3	5/5/2017	

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Exhibit Number	Exhibit Description	Incorporated by Reference				
		Form	File Number	Exhibit	Filing Date	Filed Herewith
10.82	Additional Secured Party Consent, dated as of May 12, 2017, among Wilmington Trust, National Association, as authorized representative for the new secured parties, Wilmington Trust, National Association, as collateral agent, Wilmington Trust, National Association, as authorized representative for the notes obligations, Wilmington Trust, National Association, as authorized representative for the initial other first priority obligations, Hexion Inc. and subsidiaries of Hexion Inc. party thereto.	8-K	001-00071	10.1	5/12/2017	
10.83	Fifth Joinder and Supplement to Intercreditor Agreement, dated as of May 12, 2017, by and among JPMorgan Chase Bank, N.A., as intercreditor agent, JPMorgan Chase Bank, N.A., as senior-priority agent for the ABL secured parties, Wilmington Trust, National Association, as trustee and senior-priority agent for the existing first lien notes, Wilmington Trust, National Association, as senior-priority agent for the new notes, Wilmington Trust, National Association, as senior-priority agent for the 1.5 lien notes, Wilmington Trust Company, as trustee and second-priority agent for the existing second lien notes, Hexion LLC, Hexion Inc. and subsidiaries of Hexion Inc. party thereto.	8-K	001-00071	10.2	5/12/2017	
10.84†	Employment Agreement, by and between Hexion Inc. and Craig A. Rogerson	10-Q	001-00071	10.2	8/11/2017	
10.85†	Long Term Incentive Compensation Award Agreement, by and between Hexion Inc. and Craig A. Rogerson	10-Q	001-00071	10.3	8/11/2017	
10.86	2017 Audited Financial Statements of Unconsolidated Affiliate of Hexion Inc.	10-K	001-00071	10.90	3/2/2018	
10.87†	Hexion Holding LLC 2018 Incentive Compensation Plan	10-Q	001-00071	10.1	5/14/2018	
10.88	The Deer Park Site Services, Utilities, Materials & Facilities Agreement, dated as of April 1, 2018, by and between Shell Chemical LP, on its own behalf and as authorized agent of Shell Oil Company pursuant to the Shell Chemical Authorization Agreement dated March 1, 1995 and Hexion Deer Park LLC as successor in interest to Shell Epoxy Resins LLC and Hexion Inc.	10-Q	001-00071	10.2	5/14/2018	
10.89	Moerdijk Vad Site Services, Utilities, Materials and Facilities Agreement, dated as of April 1, 2018, between Hexion Vad B.V. and Shell Nederland Chemie B.V.	10-Q	001-00071	10.3	5/14/2018	
10.90	Pernis Vad Site Services, Utilities, Materials and Facilities Agreement, dated as of April 1, 2018, between Hexion Vad B.V. and Shell Nederland Raffin Aderij B.V.	10-Q	001-00071	10.4	5/14/2018	
10.91	Pernis Beri Site Services, Utilities, Materials and Facilities Agreement, dated as of April 1, 2018 between Hexion B.V. and Shell Nederland Raffin Aderij B.V.	10-Q	001-00071	10.5	5/14/2018	
10.92	Assignment & Assumption of Deep Park Ground Lease and Grant of Easements and Extension of Term, dated as of April 1, 2018, by and between Shell Chemical LP, on its own behalf and as authorized agent of Shell Oil Company pursuant to the Chemical Authorization dated March 1, 1995, Hexion Inc., as successor in interest to Shell Epoxy Resins LLC and Hexion Deer Park LLC.	10-Q	001-00071	10.6	5/14/2018	
10.93	Partial Assignment & Extension of the Amended and Restated Agreement of Sub-lease (Pernis), dated as of April 1, 2018, between Hexion Pernis Lease B.V., Hexion Vad B.V., and Shell Nederland Raffin Aderij B.V.	10-Q	001-00071	10.7	5/14/2018	
10.94	First Amended and Restated Moerdijk Agreement of Lease, between Shell Nederland Chemie B.V. and Shell Epoxy Resins Nederland B.V.	10-Q	001-00071	10.8	5/14/2018	
10.95	Extension of the Amended and Restated Agreement of Lease (Moerdijk), dated as of April 1, 2018, between Hexion Moerdijk Lease B.V. and Shell Nederland Chemie B.V.	10-Q	001-00071	10.9	5/14/2018	
10.96	Restructuring Support Agreement, dated as of April 1, 2018, among Hexion Holdings LLC, Hexion LLC, Hexion Inc., certain subsidiaries of Hexion Inc. and certain equityholders and creditors of Hexion Inc.	8-K	001-00071	10.1	4/1/2019	
10.97	Amended and Restated Senior Secured Debtor-in-Possession Asset-Based Revolving Credit Agreement, dated as of April 3, 2019, among Hexion LLC, Hexion Inc., Hexion Canada Inc., Hexion B.V., Hexion UK Limited, Borden Chemical UK Limited, Hexion GMBH, the lenders party thereto, JPMorgan Chase Bank, N.A., as administrative agent and collateral agent.	8-K	001-00071	10.1	4/8/2019	
10.98	Reaffirmation Agreement, dated as of April 3, 2019, among Hexion LLC, Hexion Inc., Hexion Canada Inc., Hexion B.V., Hexion UK Limited, Borden Chemical UK Limited, Hexion GMBH, each Subsidiary of Hexion Inc. party thereto and JPMorgan Chase Bank, N.A., as administrative agent and collateral agent.	8-K	001-00071	10.2	4/8/2019	
10.99	Senior Secured Term Loan Agreement, dated as of April 3, 2019, among Hexion LLC, Hexion Inc., Hexion International Holdings B.V., the lenders party thereto and JPMorgan Chase Bank, N.A., as administrative agent and collateral agent.	8-K	001-00071	10.3	4/8/2019	

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Exhibit Number	Exhibit Description	Incorporated by Reference				
		Form	File Number	Exhibit	Filing Date	Filed Herewith
10.100	Guarantee Agreement, dated as of April 3, 2019, among Hexion LLC, Hexion Inc., Hexion International Holdings B.V., each Subsidiary Loan Party identified therein and JPMorgan Chase Bank, N.A., as administrative agent.	8-K	001-00071	10.4	4/8/2019	
10.101	2018 Audited Financial Statements of Unconsolidated Affiliate of Hexion Inc.	10-K	001-00071	10.101	4/11/2019	
10.102†	Hexion Holding LLC 2019 Incentive Compensation Plan	10-K	001-00071	10.102	4/11/2019	
10.103‡	Separation Agreement by and between Hexion Inc. and Joseph Bevilacqua	10-K	001-00071	10.103	4/11/2019	
10.104	Senior Secured Asset-Based Revolving Credit Agreement, dated as of July 1, 2019, among Hexion Intermediate Holding 2, Inc., Hexion Inc., Hexion Canada Inc., Hexion B.V., Hexion GmbH and Hexion UK Limited as lenders party thereto and JP Morgan Chase Bank, N.A. as administrative agent and collateral agent	8-K	001-00071	10.1	7/2/2019	
10.105	Senior Secured Credit Agreement, dated as of July 1, 2019, among Hexion Intermediate Holding 2, Inc., Hexion Inc., Hexion International Coöperatief U.A., the lenders party thereto and JPMorgan Chase Bank, N.A., as administrative agent and collateral agent.	8-K	001-00071	10.2	7/2/2019	
10.106	ABL Intercreditor Agreement, dated as of July 1, 2019, among JPMorgan Chase Bank, N.A., as administrative agent and collateral agent for the ABL Facility Secured Parties referred to therein, JPMorgan Chase Bank, N.A., as Applicable First-Lien Agent and administrative agent and collateral agent for the First-Lien Secured Parties referred to therein, Hexion Inc., Hexion Intermediate Holding 2, Inc., Hexion International Coöperatief U.A., the other subsidiaries of Hexion Inc. party thereto, each other First-Priority Lien Obligations and each Other First-Priority Lien Obligations Collateral Agent from time to time party thereto.	8-K	001-00071	10.3	7/2/2019	
10.107‡	Hexion Holding LLC 2020 Incentive Compensation Plan					X
18.1	Letter from PricewaterhouseCoopers, dated May 13, 2015 regarding preferability of a change in accounting principle	10-Q	001-00071	18.1	5/13/2015	
21.1	List of Subsidiaries of Hexion Inc.					X
31.1	Rule 13a-14 Certifications:					
	(a) Certificate of the Chief Executive Officer					X
	(b) Certificate of the Chief Financial Officer					X
32.1	Section 1350 Certifications					X
101.INS*	XBRL Instance Document					X
101.SCH*	XBRL Schema Document					X
101.CAL*	XBRL Calculation Linkbase Document					X
101.LAB*	XBRL Label Linkbase Document					X
101.PRE*	XBRL Presentation Linkbase Document					X
101.DEF*	XBRL Definition Linkbase Document					X

† The schedules and exhibits to these agreements are omitted pursuant to Item 601(b)(2) of Regulation S-K. The Company agrees to furnish supplementally to the SEC, upon request, a copy of any omitted schedule or exhibit.

‡ Represents a management contract or compensatory plan or arrangement.

* Attached as Exhibit 101 to this report are documents formatted in XBRL (Extensible Business Reporting Language). The financial information in the XBRL-related documents is "unaudited" or "unreviewed."

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ITEM 16 - FORM 10-K SUMMARY

None.

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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.

HEXION INC.

By: /s/ George F. Knight

George F. Knight

Executive Vice President and Chief Financial Officer

Date: March 3, 2020

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>Name</u>	<u>Title</u>	<u>Signature</u>	<u>Date</u>
Craig A. Rogerson	Director, President and Chief Executive Officer (Principal Executive Officer) and Director, Hexion Holdings Corporation	<u>/s/ Craig A. Rogerson</u>	March 3, 2020
George F. Knight	Director, Executive Vice President and Chief Financial Officer (Principal Financial Officer)	<u>/s/ George F. Knight</u>	March 3, 2020
Colette B. Barricks	Senior Vice President and General Controller (Principal Accounting Officer)	<u>/s/ Colette B. Barricks</u>	March 3, 2020
Patrick J. Bartels	Director, Hexion Holdings Corporation	<u>/s/ Patrick J. Bartels</u>	March 3, 2020
Jeffrey D. Benjamin	Director, Hexion Holdings Corporation	<u>/s/ Jeffrey D. Benjamin</u>	March 3, 2020
James N. Chapman	Director, Hexion Holdings Corporation	<u>/s/ James N. Chapman</u>	March 3, 2020
Joquin Delgado	Director, Hexion Holdings Corporation	<u>/s/ Joquin Delgado</u>	March 3, 2020
Carol S. Eicher	Director, Hexion Holdings Corporation	<u>/s/ Carol S. Eicher</u>	March 3, 2020
Michael J. Shannon	Director, Hexion Holdings Corporation	<u>/s/ Michael J. Shannon</u>	March 3, 2020
John K. Wulff	Director, Hexion Holdings Corporation	<u>/s/ John K. Wulff</u>	March 3, 2020
Stephen D. Newlin	Director, Hexion Holdings Corporation	<u>/s/ Stephen D. Newlin</u>	March 3, 2020