UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549
Form 10-K

(Mark One)

☒ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934 FOR THE FISCAL YEAR ENDED DECEMBER 31, 2022

OR

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

Commission File Number	Exact Name of Registrant as Specified in its Charter, Principal Office Address and Telephone Number	State of Incorporation/Organization	I.R.S. Employer Identification No.
001-32427	Huntsman Corporation 10003 Woodloch Forest Drive The Woodlands, Texas 77380 (281) 719-6000	Delaware	42-1648585
333-85141	Huntsman International LLC 10003 Woodloch Forest Drive The Woodlands, Texas 77380 (281) 719-6000	Delaware	87-0630358

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

Registrant	Title of each class	Trading Symbol	Name of each exchange on which registered
Huntsman Corporation	Common Stock, par value $0.01 per share	HUN	New York Stock Exchange
Huntsman International LLC	NONE	NONE	NONE

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

Registrant	Title of each class
Huntsman Corporation/Huntsman International LLC	None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

Huntsman Corporation/Huntsman International LLC	Yes ☒	No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Exchange Act.

Huntsman Corporation/Huntsman International LLC	Yes ☐	No ☒

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Exchange Act 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.

Huntsman Corporation/Huntsman International LLC	Yes ☒	No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit such files).

Huntsman Corporation/Huntsman International LLC	Yes ☒	No ☐

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

Huntsman Corporation	Large accelerated filer ☒	Accelerated filer ☐	Non-accelerated filer ☐	Smaller reporting company ☐	Emerging Growth Companies ☐
Huntsman International LLC	Large accelerated filer ☐	Accelerated filer ☐	Non-accelerated filer ☒	Smaller reporting company ☐	Emerging Growth Companies ☐

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

Huntsman Corporation	Yes ☒	No ☐
Huntsman International LLC	Yes ☐	No ☒

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 7(a)(2)(B) of the Securities Act.

Huntsman Corporation/Huntsman International LLC	Yes ☐	No ☐

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to Section 240.10D-1(b). ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Huntsman Corporation/Huntsman International LLC	Yes ☐	No ☒

On June 30, 2022, the last business day of the registrants' most recently completed second fiscal quarter, the aggregate market value of voting and non-voting common equity held by non-affiliates was as follows:

Registrant	**Common Equity**	**Market Value Held by Nonaffiliates**
Huntsman Corporation	Common Stock	$5,447,411,704(1)
Huntsman International LLC	Units of Membership Interest	NA(2)

(1) Based on the closing price of $28.35 per share of common stock as quoted on the New York Stock Exchange.
(2) All units of membership interest are held by Huntsman Corporation, an affiliate.

On February 7, 2023, the number of shares outstanding of each of the registrant's classes of common equity were as follows:

Registrant	**Common Equity**	**Outstanding**
Huntsman Corporation	Common Stock	183,774,330
Huntsman International LLC	Units of Membership Interest	2,728

This Annual Report on Form 10-K presents information for two registrants: Huntsman Corporation and Huntsman International LLC. Huntsman International LLC is a wholly owned subsidiary of Huntsman Corporation and is the principal operating company of Huntsman Corporation. The information reflected in this Annual Report on Form 10-K is equally applicable to both Huntsman Corporation and Huntsman International LLC, except where otherwise indicated.

Huntsman International LLC meets the conditions set forth in General Instructions (I)(1)(a) and (b) of Form 10-K and, to the extent applicable, is therefore filing this form with a reduced disclosure format.

Documents Incorporated by Reference

Part III: Proxy Statement for the 2023 Annual Meeting of Stockholders to be filed within 120 days of Huntsman Corporation's fiscal year ended December 31, 2022.

HUNTSMAN CORPORATION AND SUBSIDIARIES
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HUNTSMAN CORPORATION AND SUBSIDIARIES
HUNTSMAN INTERNATIONAL LLC AND SUBSIDIARIES
2022 ANNUAL REPORT ON FORM 10-K

This report includes information with respect to market share, industry conditions and forecasts that we obtained from internal industry research, publicly available information (including industry publications and surveys), and surveys and market research provided by consultants. The publicly available information and the reports, forecasts and other research provided by consultants generally state that the information contained therein has been obtained from sources believed to be reliable. We have not independently verified any of the data from third-party sources, nor have we ascertained the underlying economic assumptions relied upon therein. Similarly, our internal research and forecasts are based upon our management's understanding of industry conditions, and such information has not been verified by any independent sources.

For convenience in this report, the terms "Company," "our," "us," or "we" may be used to refer to Huntsman Corporation and, unless the context otherwise requires, its subsidiaries and predecessors. In this report, "Huntsman International" refers to Huntsman International LLC (our wholly-owned subsidiary) and, unless the context otherwise requires, its subsidiaries; "AAC" refers to Arabian Amines Company, our consolidated manufacturing joint venture with the Zamil Group; "HPS" refers to Huntsman Polyurethanes Shanghai Ltd. (our consolidated splitting joint venture with Shanghai Chlor-Alkali Chemical Company, Ltd); and "SLIC" refers to Shanghai Liengheng Isocyanate Investment BV (an unconsolidated manufacturing joint venture with BASF and three Chinese chemical companies).

In this report, we may use, without definition, the common names of competitors or other industry participants. We may also use the common names or abbreviations for certain chemicals or products. Many of these terms are defined in the Glossary of Chemical Terms found at the conclusion of "Part I. Item 1. Business" below.

Forward-Looking Statements

With respect to Huntsman Corporation, certain information set forth in this report contains "forward-looking statements" within the meaning the Private Securities Litigation Reform Act of 1995, Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. All statements other than historical factual information are forward-looking statements, including without limitation statements regarding: projections of revenue, expenses, profit, profit margins, tax rates, tax provisions, cash flows, pension and benefit obligations and funding requirements, our liquidity position or other projected financial measures; the projected impact of COVID-19 on our operations and future financial results; management's plans and strategies for future operations, including statements relating to anticipated operating performance, cost reductions, restructuring activities, new product and service developments, competitive strengths or market position, acquisitions, divestitures, spin-offs or other distributions, strategic opportunities, securities offerings, stock repurchases, dividends and executive compensation; growth, declines and other trends in markets we sell into; new or modified laws, regulations and accounting pronouncements; outstanding claims, legal proceedings, tax audits and assessments and other contingent liabilities; foreign currency exchange rates and fluctuations in those rates; general economic and capital markets conditions; the timing of any of the foregoing; assumptions underlying any of the foregoing; and any other statements that address events or developments that we intend or believe will or may occur in the future. In some cases, forward-looking statements can be identified by terminology such as "believes," "expects," "may," "will," "should," "anticipates" or "intends" or the negative of such terms or other comparable terminology, or by discussions of strategy. We may also make additional forward-looking statements from time to time. All such subsequent forward-looking statements, whether written or oral, by us or on our behalf, are also expressly qualified by these cautionary statements.

All forward-looking statements, including without limitation management's examination of historical operating trends, are based upon our current expectations and various assumptions. Our expectations, beliefs and projections are expressed in good faith and we believe there is a reasonable basis for them, but there can be no assurance that management's expectations, beliefs and projections will result or be achieved. All forward-looking statements apply only as of the date made. We undertake no obligation to publicly update or revise forward-looking statements whether because of new information, future events or otherwise, except as required by securities and other applicable law.

There are a number of risks and uncertainties that could cause our actual results to differ materially from the forward-looking statements contained in or contemplated by this report. Any forward-looking statements should be considered in light of the risks set forth in "Part I. Item 1A. Risk Factors" and elsewhere in this report.

PART I

ITEM 1. BUSINESS

Overview

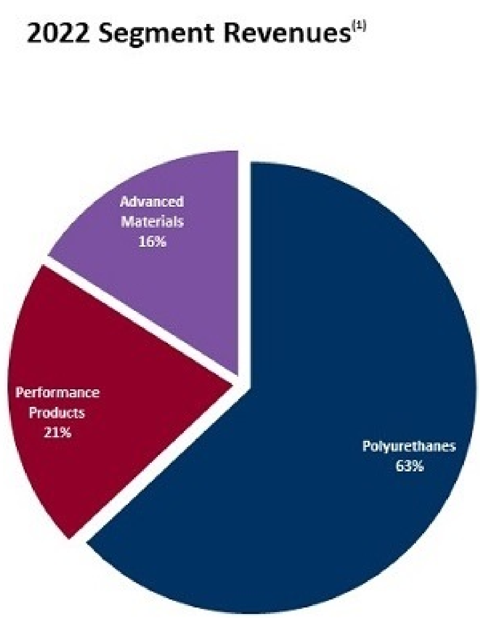
We are a global manufacturer of diversified organic chemical products. We operate in three segments: Polyurethanes, Performance Products and Advanced Materials. Our products comprise many different chemicals and chemical formulations, which we market globally to a wide range of consumers that consist primarily of industrial and building product manufacturers. Our products are used in a broad range of applications, including those in the adhesives, aerospace, automotive, coatings and construction, construction products, durable and non-durable consumer products, electronics, insulation, packaging, power generation and refining. Many of our products offer effects such as premium insulation in homes and buildings and the light weighting of airplanes and automobiles that help conserve energy. We are a leading global producer in many of our key product lines, including MDI, amines, maleic anhydride and epoxy-based polymer formulations. Our revenues for the years ended December 31, 2022, 2021 and 2020 were $8,023 million, $7,670 million and $5,421 million, respectively.

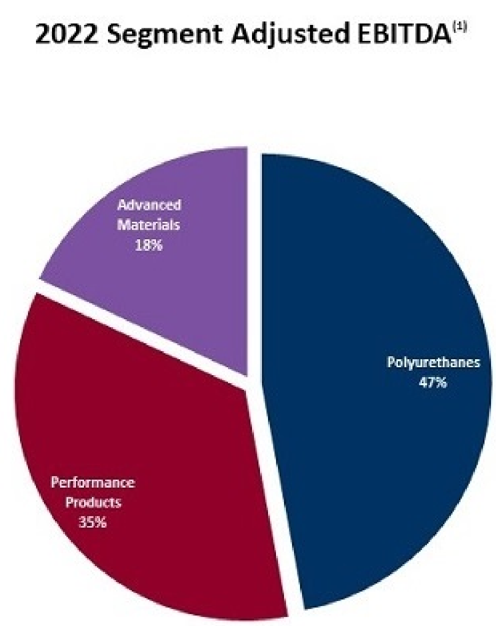
Our company, a Delaware corporation, was formed in 2004 to hold the Huntsman businesses, which were founded by Jon M. Huntsman. Mr. Huntsman founded the predecessor to our Company in 1970 as a small packaging materials company. Since then, we have transformed through a series of acquisitions and divestitures and now own a global portfolio of businesses with a primary focus on improving energy efficiency. On August 9, 2022, we entered into a definitive agreement to sell our textile chemicals and dyes business ("Textile Effects Business") to Archroma, a portfolio company of SK Capital Partners ("Archroma"), for a purchase price of $593 million in cash plus the assumption of underfunded pension liabilities, and we expect the net after tax cash proceeds to be approximately $540 million before fees and subject to certain customary purchase price adjustments as set forth in the purchase agreement. We expect the transaction to close on February 28, 2023. Beginning in the third quarter of 2022, we reported the results of our Textile Effects Business as discontinued operations for all periods presented. For more information, see "Note 4. Discontinued Operations and Business Dispositions—Discontinued Operations—Sale of Textile Effects Business" to our consolidated financial statements. On January 3, 2020, we completed the sale of our chemical intermediates businesses, which included PO/MTBE, and our surfactants businesses (collectively, "Chemical Intermediates Businesses") to Indorama Venture Holdings L.P. ("Indorama"). For more information, see "Note 4. Discontinued Operations and Business Dispositions—Discontinued Operations—Sale of Chemical Intermediates Businesses" to our consolidated financial statements. We operate all of our businesses through Huntsman International, our wholly-owned subsidiary. Huntsman International is a Delaware limited liability company and was formed in 1999.

For information regarding significant recent developments, see "Note 1. General—Recent Developments" to our consolidated financial statements.

Our principal executive offices are located at 10003 Woodloch Forest Drive, The Woodlands, Texas 77380, and our telephone number at that location is (281) 719-6000.

Our Products





(1) Percentage allocations in this chart do not give effect to Corporate and other unallocated items and eliminations. For a reconciliation of adjusted EBITDA to net income attributable to Huntsman Corporation and cash provided by operating activities, see "Part II. Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations—Results of Operations."

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The following table identifies the key products, principal end markets and applications, representative customers, raw materials and representative competitors of each of our business segments:

Segment	Product lines	End markets / applications	Representative customers	Raw materials	Representative competitors
Polyurethanes	MDI	Polyurethane chemicals are used to produce rigid and flexible foams, as well as coatings, adhesives, sealants and elastomers. Major end markets include: building insulation, construction products, automotive, including electric vehicles, and footwear. They are also used in cold chain, furniture and specialized engineering applications.	Adient, Autoneum, Henkel, IBP, LafargeHolcim, Lear, Leggett & Platt, Louisiana Pacific, Magna, Pursell, Recticel and West Fraser	Benzene, chlorine and industrial gases	BASF, Carlisle Construction Materials, Covestro, Dow, Lubrizol and Wanhua Chemical Group
	Polyols	Polyols are combined with MDI and other isocyanates to create a broad spectrum of polyurethane products, such as rigid and flexible foams and other non-foam applications.		PO, polyester polyols and EO	
	TPU	TPU is a high-quality, fully-formulated thermal plastic that can be tailored with unique qualities. It can be used in injection molding and small components for automotive and footwear. It is also extruded into films, wires and cables for use in the coatings, adhesives, sealants and elastomers markets.		Isocyanate (such as MDI) and a polyol	
Performance Products	Amines	Amines are a family of intermediate chemicals that are valued for their properties as a reactive agent, emulsifier, dispersant, detergent, solvent or corrosion inhibitor. Amines are used in polyurethane foam, fuel and lubricant additives, paints and coatings, composites, gas treatment, construction materials and semiconductors.	Afton, Bayer, Chevron Oronite, DuPont, Evonik, Hexion, Infineum, Ingevity, Lubrizol, Olin, PPG, Quadra and Sherwin-Williams	EO, PO, glycols, ethylene dichloride, caustic soda, ammonia, hydrogen, methylamines and acrylonitrile	BASF, Delamine, Dow, Evonik, Nouryon and Tosoh
	Maleic anhydride	Maleic anhydride is an intermediate chemical used primarily to produce unsaturated polyester resins (UPRs). UPRs are mainly used in the production of fiberglass reinforced resins for marine, automotive and construction products. Maleic anhydride is also used in the production of lubricants, food additives and food acidulants.	Andercol, Chevron Oronite, Cranston, Dixie, Ingevity, Lubrizol, MFG Chemical, Polynt-Reichhold and Primary Products	Normal butane	AOC, Bartek, INEOS and Lanxess
Advanced Materials	Technologically-advanced epoxy, phenoxy, acrylic, polyurethane and acrylonitrile-butadiene-based polymer formulations	Aerospace and industrial adhesives; composites for aerospace, automotive, sport equipment and infrastructures; electrical power transmission and electric vehicles; automotive industrial and consumer electronics.	ABB, BMW, Bodo Moeller, Boeing, Bosch, GMZ, Motic (Xiamen), Schneider, Siemens, Speed Fair and TTM	BLR, epichlorohydrin, amines, polyols, isocyanates, acrylic materials, hardeners, fillers, butadiene and acrylonitrile	3M, Henkel, Westlake and Xiongrun
	High performance thermoset resins. curing and toughening agents and carbon nanotubes additives	High performance chemical building blocks sold to formulators who develop formulations for aerospace, automotive, oil and gas, coatings, construction, electronics and electrical insulation applications.	3M, Azelis, Azko, Henkel, Hexcel, Hilti, Omya, Parker Hannifin, Sherwin-Williams, Solvay and Syngenta	Epichlorohydrin, amines, phenols, aminophenols, fatty acids, butadiene and acrylonitrile	Evonik, Kaneka, Sumitomo and Westlake

Polyurethanes

General

We are a leading global manufacturer and marketer of a broad range of polyurethane chemicals, including MDI products, polyols and TPU (each discussed in more detail below under "—Products and Markets"). Polyurethane chemicals are used to produce rigid and flexible foams, as well as coatings, adhesives, sealants and elastomers. We focus on the higher-margin, higher-growth markets for specialty MDI-based polyurethane systems and polyurethane component molecules. Volume growth in our Polyurethanes segment has been driven primarily by global economic activity and the continued substitution of MDI-based products for other materials across a broad range of applications. We operate three major polyurethane manufacturing facilities in the U.S., Europe and China. We also operate 28 strategically located downstream facilities, of which 21 are polyurethane formulation facilities, commonly referred to in the chemical industry as "systems houses". Our systems houses are located in close proximity to our customers worldwide, which enables us to focus on customer support, technical service and a differentiated product offering. We also operate two specialty polyester polyol manufacturing facilities focused on the insulation market, three downstream TPU manufacturing facilities in the United States ("U.S."), Europe and China and two spray foam manufacturing sites located in the U.S. and Canada.

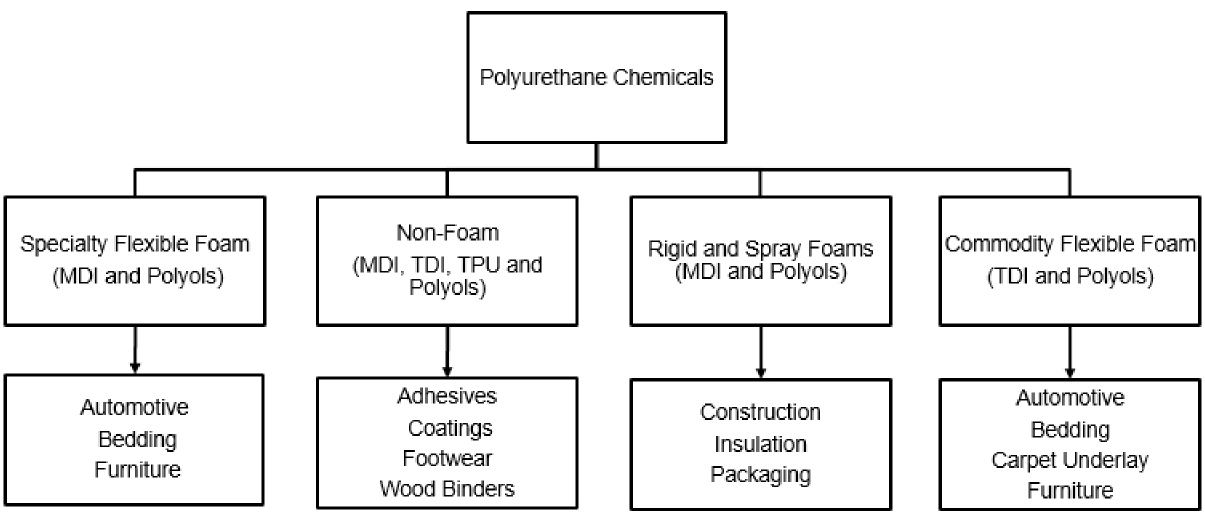
Our customers produce polyurethane-based products through the combination of an isocyanate, such as MDI, with polyols, which are derived largely from PO and EO. We are able to produce over 2,500 distinct MDI-based polyurethane products by modifying the MDI molecule through varying the proportion and type of polyol used and by introducing other chemical additives to our MDI formulations. As a result, polyurethane products, especially those derived from MDI, are continuing to replace traditional products in a wide range of end-use markets, including insulation in construction and cold chain, cushioning for automotive and furniture, coatings, adhesives, wood binders for construction and furniture, footwear and other specialized engineering applications.

We operate a world-scale integrated polyurethane formulations facility and a world-scale research and development campus in China to service our customers in the critical Chinese market, the largest MDI market in the world, and we will support the long-term demand growth that we believe this region will continue to experience. Additionally, we entered into an agreement with Sinopec to form a joint venture to build and operate a world-scale PO/MTBE plant in Nanjing, China utilizing proprietary PO/MTBE manufacturing technology. PO is used in the manufacturing of polyurethane systems and MTBE is an oxygenate used in gasoline. We own a 49% interest in the joint venture and account for our interest in the joint venture as an equity method investment.

In May 2020, we rebranded our leading spray polyurethane foam ("SPF") business as Huntsman Building Solutions ("HBS"). HBS was formed through our acquisitions of Icynene-Lapolla, a leading North American manufacturer and distributor of SPF insulation systems for residential and commercial applications, in 2020 ("Icynene-Lapolla Acquisition") and Demilec (USA) Inc. and Demilec Inc. in 2018. Our SPF products offer significant environmental benefits, as our proprietary manufacturing process transforms low quality PET plastic bottles into highly effective energy-saving polyurethane insulation. HBS offers attractive growth potential as energy efficiency standards and requirements increase globally and continue to shift towards a more green economy.

Products and Markets

MDI is used primarily in rigid foam applications and in a wide variety of customized, higher-value flexible foam as well as coatings, adhesives, sealants and elastomers. Polyols, including polyether and polyester polyols, are used in conjunction with MDI in rigid foam, flexible foam and other non-foam applications. The following chart illustrates the range of product types and end uses for polyurethane chemicals. We produce MDI, polyols and TPU products and do not produce TDI products.



Polyurethane chemicals are sold to customers who combine the chemicals to produce polyurethane-based products. Customers will use either polyurethane component molecules produced for mass sales or polyurethane systems tailored to specific requirements. By varying the blend, additives and specifications of the polyurethane chemicals, manufacturers are able to develop and produce a breadth and variety of polyurethane-based products.

MDI. MDI has grown substantially over the past three decades, increasing by a factor of approximately 5-6% CAGR, well in excess of global GDP. MDI has a substantially larger market size and a higher growth rate than other polyurethane isocyanates. This is primarily because MDI can be used to make polyurethanes with a broader range of properties and can therefore be used in a wider range of applications. We believe that MDI and formulated MDI systems, which combine MDI and polyols, will continue to grow at approximately double the rate of global GDP driven by the mega trends of energy management, food preservation, demographics and urbanization/transportation. MDI offers key products benefits of energy efficiency, comfort and durability aligned with these megatrends. We believe that MDI and formulated MDI systems will continue to substitute for alternative materials, such as fiberglass in insulation, phenol formaldehyde in wood binders and TDI in automotive and furniture. Specialty cushioning and insulation applications, thermoplastic polyurethanes and adhesives and coatings will further contribute to the continued growth of MDI. MDI experiences some seasonality in its sales reflecting its exposure to seasonal construction-related end markets such as insulation and composite wood products. Sales generally peak during the spring and summer months in the northern hemisphere, resulting in greater sales volumes during the second and third quarters of the year.

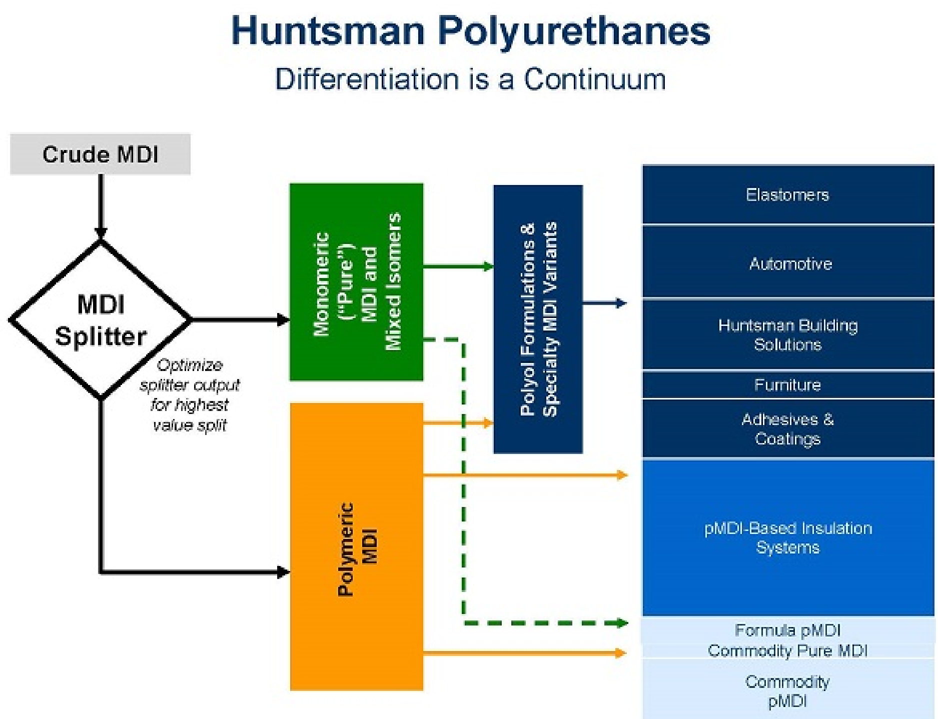
Polyols. Polyols are combined with MDI and other isocyanates to create a broad spectrum of formulated polyurethane systems. Demand for specialty polyols has been growing at approximately the same rate at which MDI consumption has grown.

TPU. TPU is a high-quality, fully formulated thermal plastic derived from the reaction of MDI or an aliphatic isocyanate with polyols to produce unique qualities such as durability, flexibility, strength, abrasion-resistance, shock absorbency and chemical resistance. We can tailor the performance characteristics of TPU to help meet the specific requirements of our customers. TPU is used in injection molding and small components for the automotive and footwear industries. It is also extruded into films for apparel, wires and cables for industrial use and in a wide variety of applications in the coatings, adhesives, sealants and elastomers markets.

Other.

Other sales consist primarily of aniline, benzene, nitrobenzene and other co-products, which all are used primarily to manufacture MDI. The majority of our aniline is consumed internally with some sold to third parties. We believe that the lack of a significant spot market for aniline means that in order to remain competitive, MDI manufacturers must either be integrated with an aniline manufacturing facility or have long-term, cost-competitive aniline supply contracts.

Our strategy is focused on growing our differentiated product offering (specialty MDI and polyols, formulated MDI-based systems and TPU), which requires a greater emphasis on formulating capability and technical solutions to help our downstream customers meet the desired effect required in their applications. The diagram below provides an overview of how we leverage our technology and experience with the MDI splitter by transforming crude MDI into differentiated higher value systems and markets.



Sales and Marketing

We market our polyurethane chemicals to over 6,500 customers in more than 90 countries. Our sales, marketing and technical resources are organized to support major regional markets and key end-use markets, some of which require a coordinated global approach, such as key accounts across the automotive and elastomers markets. These regional key end-use markets include our insulation businesses, footwear, furniture and other construction and industrial markets. We sell both directly and indirectly to customers, the latter via a network of distributors and agents who in turn sell our products to customers who cannot be served as cost effectively by our internal sales groups.

We provide a wide variety of polyurethane solutions as components (i.e., the isocyanate or the polyol) or in the form of "systems", in which we provide the total isocyanate and polyol formulation to our customers. Our ability to deliver a range of polyurethane solutions and technical support, which can be tailored for the needs of our customers, is critical to our long-term success. We have strategically located our downstream polyurethane systems houses close to our customers, enabling us to focus on customer support and technical service. We believe this customer support and technical service system contributes to customer retention and also provides opportunities for identifying further product and service needs of customers.

Our strategy is to grow the capabilities of our downstream facilities both organically and inorganically. As a result, we have made a number of "bolt-on" acquisitions in recent years to expand our downstream footprint and align with our strategic intent. Along with this, we continuously evaluate our global footprint to better utilize our assets and systems houses while providing strong customer support and technical service.

We believe that the extensive market knowledge and industry experience of our sales teams and technical experts, in combination with our strong emphasis on customer relationships, have facilitated our ability to establish and maintain long-term customer supply positions. Our sales strategy is to continue to increase sales to existing customers and to attract new customers by providing innovative solutions, quality products, reliable supply, competitive prices and superior customer service.

Manufacturing and Operations

Our world-scale MDI production facilities are located in Geismar, Louisiana; Rotterdam, The Netherlands; and through our joint ventures in Caojing, China. These facilities receive aniline, which is a primary material used in the production of MDI, from our facilities located in Geismar, Louisiana; Wilton, U.K.; and Caojing, China. We believe that this relative scale and product integration of our large facilities is necessary to provide cost competitiveness in MDI production. At our Geismar, Rotterdam and Caojing facilities we utilize sophisticated proprietary technology to produce MDI. This technology contributes to our position as a low-cost MDI producer. The following table sets forth the annual production capacity of polyurethane chemicals at select polyurethanes facilities:

	MDI	Polyols	TPU	Aniline(3)	Nitrobenzene(3)
			(millions of pounds)		
Caojing, China	825(1)				
Geismar, Louisiana	1,060	160		706(2)	1,000(2)
Houston, Texas		168			
Jinshan, China			72		
Kuan Yin, Taiwan		49			
Osnabrück, Germany		26	59		
Ringwood, Illinois			30		
Rotterdam, The Netherlands	1,036	190			
Wilton, U.K.				783	1,045
Total	2,921	593	161	1,489	2,045

(1) Represents our share of capacity from SLIC.
(2) Represents our approximately 78% share of capacity under our consolidated Rubicon LLC manufacturing joint venture with Lanxess AG.
(3) Primarily consumed internally in the production of MDI.

Key Joint Ventures

Rubicon Joint Venture. Lanxess AG ("Lanxess") is our joint venture partner in Rubicon LLC ("Rubicon"), which owns aniline, nitrobenzene and DPA manufacturing facilities in Geismar, Louisiana. We are entitled to approximately 78% of the nitrobenzene and aniline production capacity of Rubicon, and Lanxess is entitled to 100% of the DPA production. In addition to operating the joint venture's aniline, nitrobenzene and DPA facilities, Rubicon operates our wholly-owned MDI, polyol and maleic anhydride facilities at Geismar and is responsible for providing other auxiliary services to the entire Geismar complex. As a result of this joint venture, we are able to achieve greater scale and lower costs for our products than we would otherwise have been able to obtain. Rubicon is consolidated in our financial statements.

Chinese MDI Joint Ventures. We are involved in two related joint ventures which operate MDI production facilities in Caojing, China. SLIC, our manufacturing joint venture with BASF and three Chinese chemical companies, produces MNB, aniline and crude MDI. We effectively own 35% of SLIC and account for our investment under the equity method. HPS, our splitting joint venture with Shanghai Chlor-Alkali Chemical Company, Ltd, manufactures pure MDI, polymeric MDI, MDI variants and formulated MDI systems. We own 70% of HPS and it is consolidated in our financial statements. These projects have been funded by a combination of equity invested by the joint venture partners and borrowed funds.

Chinese PO/MTBE Joint Venture. In November 2012, we entered into an agreement to form a joint venture with Sinopec. The joint venture involved the construction and operation of a PO/MTBE facility in China. Under the joint venture agreement, we hold a 49% interest in the joint venture and Sinopec holds a 51% interest. We account for this investment under the equity method.

Raw Materials

The primary raw materials for MDI-based polyurethane chemicals are benzene and PO. Benzene is a widely available commodity that we purchase from third parties to manufacture nitrobenzene and aniline, almost all of which we then use to produce MDI. Historically, benzene has been the largest component of our raw material costs. Over the past year, the cost of natural gas-related raw materials in Europe have risen significantly.

The primary raw material used in the production of polyols is PO, which we purchase in North America and Europe. In China, the Chinese PO/MTBE joint venture supplies PO into our downstream China business. The strategic supply of PO gives us access to competitively priced PO and the opportunity to develop polyols that enhance our range of MDI products.

Competition

Our major competitors in the polyurethane chemicals market include BASF, Covestro, Dow, Lubrizol and Wanhua Chemical Group. While these competitors and others produce various types and quantities of polyurethane chemicals, we focus on MDI and MDI-based formulated polyurethane systems. Our downstream business is fragmented with different competitors in various markets and regions. Our competitors in downstream markets include Carlisle Construction Materials, Coim and Lubrizol. Our polyurethane chemicals business competes in two basic ways: (1) where price is the dominant element of competition, our polyurethane chemicals business differentiates itself by its high level of customer support, including cooperation on technical and safety matters; and (2) elsewhere, we compete on the basis of product performance, our ability to react quickly to changing customer needs and providing customers with innovative solutions to their needs.

Performance Products

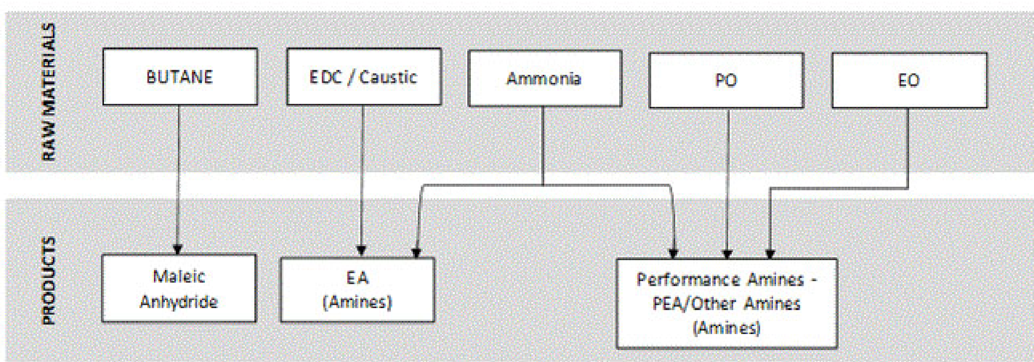
General

Our Performance Products segment has leading global positions in the manufacture and sale of amines and maleic anhydride and serves a wide variety of consumer and industrial end markets. Our Performance Products segment is organized by region and product family: amines and maleic anhydride.

We produce a wide range of amines, many of which are sold into diversified markets such as epoxy curing agents, oil exploration and production, agrochemicals, and fuel and lubricant additives. We believe we are the largest global producer of polyetheramines, one of the largest producers of 2-(2-amino ethoxy) ethanol, sold under our DGA™ brand, the largest global producer making the full range of ethyleneamines, the second largest producer of morpholine and a leading global producer of low emission polyurethane catalysts. We are the only producer and largest supplier of propylene carbonate and ethylene carbonate in North America. Many of the markets for these products have growth rates in excess of global GDP.

We believe we are the largest producer of maleic anhydride outside of China and the second largest globally. Maleic anhydride is a highly versatile chemical intermediate used for products sold into construction and infrastructure, marine and fuel additives, among other applications. Notably, maleic anhydride is used to produce unsaturated polyester resins (UPRs), which are mainly used in the production of fiberglass reinforced resins. Maleic anhydride is also used in the production of lubricants, food additives and artificial sweeteners.

We produce a variety of products at 10 manufacturing facilities in North America, Europe, the Middle East and Asia.



Products and Markets

Amines. Amines are a family of intermediate chemicals that are produced by reacting ammonia, or an alkylamine, with various ethylene and propylene derivatives. Generally, amines are valued for their properties as a reactive agent, emulsifier, dispersant, solvent or corrosion inhibitor. Growth in demand for amines is highly correlated with GDP growth. However, certain segments of the amines market, such as polyetheramines, have historically grown at rates in excess of GDP growth due to new product development, technical innovation and end-use substitution. As amines are generally sold based upon the performance characteristics that they provide to customer-specific end-use applications, pricing does not generally fluctuate directly with movements in underlying raw materials. Our amines business is organized around the following product groups:

Product group	**Applications**
Polyetheramines	Epoxy composites, construction and flooring, paints and coatings, lubricant and fuel additives, adhesives, agrochemicals, oilfield chemicals, printing inks and pigment dispersion
Ethyleneamines	Chemical building block used in lubricant and fuel additives, epoxy hardeners, wet strength resins, chelating agents and fungicides
Diversified and specialty amines, including DGA™ Agent, JEFFCAT® catalysts and E-GRADE® specialty amines and carbonates	Gas treating, agricultural chemicals, polyurethane foams and insulation, E-GRADE® specialty amines for semiconductor manufacturing and electrolytes for electric vehicle batteries

Polyetheramines are produced by reacting polyol with ammonia. They provide sophisticated performance characteristics as an additive in the manufacture of highly customized epoxy formulations, enabling customers to penetrate new markets and substitute for traditional curing materials.

Our ethyleneamines are manufactured by reacting EDC and caustic soda with ammonia to produce a range of various ethyleneamines homologues having different molecular weights. Most other producers utilize a reductive amination process, which yields a light slate of ethyleneamines. We believe our heavier slate of homologues allows access to a greater range of markets.

Our amines are used in a wide variety of mainly industrial applications, including composites, paints and coatings, polyurethane insulation and flexible foams, fuel and lubricant additives, and solvents. Our key amines customers include Afton, Bayer, Chevron Oronite, DuPont, Evonik, Hexion, Infineum, Ingevity, Lubrizol, Olin, PPG, Quadra and Sherwin-Williams.

Maleic Anhydride. Maleic anhydride is a highly versatile chemical intermediate used for products sold into construction and infrastructure, marine and fuel additives, among other applications. Notably, maleic anhydride is used to produce UPRs, which are mainly used in the production of fiberglass reinforced resins. Maleic anhydride is also used in the production of lubricants, food additives and artificial sweeteners.

Product group	**Applications**
Maleic anhydride	Boat hulls, automotive, construction, lubricant and fuel additives, countertops, agrochemicals, paper and food additives
Maleic anhydride and other technology licensing	Maleic anhydride and 1-4 butanediol (BDO) and other process technologies

Maleic anhydride is produced by oxidizing either benzene or normal butane through the use of a catalyst. Our maleic anhydride technology is a proprietary fixed bed butane-based process with a solvent recovery and refining system. We believe that our process is superior in the areas of feedstock and energy efficiency and solvent recovery. The maleic anhydride-based route to BDO manufacture is currently the preferred process technology and is favored over the other routes, which utilize PO, butadiene or acetylene as feedstocks. As a result, the growth in demand for BDO supports growing demand for our maleic anhydride technology. Generally, changes in price have resulted from a combination of changes in industry capacity utilization and underlying raw material costs.

We license our maleic anhydride technology and other technologies worldwide. Revenue from licensing comes from new plant commissioning, as well as current plant retrofits. Our licensing group also supports licensing efforts for our other segments.

Our key maleic anhydride customers include Andercol, Chevron Oronite, Ingevity, Lubrizol, MFG Chemical, Polynt-Reichhold and Primary Products.

Sales and Marketing

We sell approximately 250 products to over 950 customers globally through our regional sales and marketing organizations, which have extensive market knowledge, considerable chemical industry experience and well-established customer relationships.

In more specialty products for certain markets (e.g., lubricants, coatings, construction, agrochemicals, oilfield, automotive, gas treating and insulation), our marketing efforts are focused on how our product offerings perform in certain customer applications. We believe that this approach enhances the value of our product offerings and creates opportunities for ongoing differentiation in our development activities with our customers.

We provide extensive pre- and post-sales technical service support to our customers where our technical service professionals work closely with our research and development functions to tailor our product offerings to meet our customers unique and changing requirements. These technical service professionals interact closely with our marketing managers and business leadership teams to help guide future offerings and market approach strategies. In addition to our focused direct sales efforts, we maintain an extensive global network of distributors and agents that also sell our products. These distributors and agents typically promote our products to smaller end-use customers who cannot be served cost effectively by our direct sales forces.

Manufacturing and Operations

Our Performance Products segment has the capacity to produce a variety of products at 10 manufacturing locations in North America, EAME and APAC. These production capacities are as follows:

Product area	North America	EAME	APAC	Total
	(millions of pounds)			
Amines	550	227 (1)	107	884 (1)
Maleic anhydride	340	231	—	571

(1) Includes 70 million pounds from AAC, our consolidated 50%-owned joint venture, located in Jubail, Saudi Arabia.

Our amines facilities are located globally. These facilities have a competitive cost base and use modern manufacturing units that allow for flexibility in production capabilities and technical innovation.

A number of our facilities are located within large integrated petrochemical manufacturing complexes. We believe this results in greater scale and lower costs for our products than we would be able to obtain if these facilities were stand-alone operations. These include our maleic anhydride facilities in Pensacola, Florida, Geismar, Louisiana and Moers, Germany and our ethyleneamines facility in Freeport, Texas.

Joint Venture

We consolidate the results of AAC, our 50%-owned joint venture with the Zamil Group. AAC operates an ethyleneamines manufacturing plant in Jubail, Saudi Arabia. The plant has an approximate annual capacity of 70 million pounds. We purchase and sell all of the production from this joint venture.

Raw Materials

The main raw materials used in the production of our amines are EO, PO, glycols, EDC, caustic soda, ammonia, hydrogen, methylamines and acrylonitrile. The majority of these raw materials are available from multiple sources in the merchant market at competitive prices.

Maleic anhydride is produced by the reaction of normal butane with oxygen. The principal raw material is normal butane, which is purchased pursuant to long-term contracts and delivered to our Pensacola, Florida site by barge, to our facility in Geismar, Louisiana via pipeline and to our Moers, Germany site by railcar.

Competition

There are a small number of competitors for many of our amines due to the considerable customization of product formulations, the proprietary nature of many of our product applications and manufacturing processes and the relatively high research and development and technical costs involved. Our global competitors include BASF, Delamine, Dow, Evonik, Nouryon and Tosoh. We compete primarily on the basis of product performance, new product innovation and, to a lesser extent, on the basis of price.

In our maleic anhydride market, we compete primarily on the basis of price, customer service, technical support and logistics management. Our competitors include AOC, Bartek, INEOS and Lanxess. In our maleic anhydride technology licensing market, our primary competitor is Conser. We compete primarily on the basis of technological performance and service.

Advanced Materials

General

Our Advanced Materials segment is a leading global manufacturer and marketer of technologically-advanced epoxy, phenoxy, acrylic, polyurethane, mercaptan and acrylonitrile butadiene-based polymer products. We focus on formulations and systems that are used to address customer-specific needs in a wide variety of industrial and consumer applications. Our products are used either as replacements for traditional materials or in applications where traditional materials do not meet demanding engineering specifications. For example, structural adhesives are used to replace metal rivets and advanced composites are used to replace traditional aluminum panels and other steel materials to lighten structures in aerospace, automotive and other transportation. Our Advanced Materials segment is characterized by the breadth of our product offering, our expertise in complex chemistry, our long-standing relationships with our customers, our ability to develop and adapt our technology and our applications expertise for new markets and new applications.

We operate synthesis, formulating and production facilities in North America, Europe, Asia and South America. We sell to over 1,900 customers in the following end markets: aerospace, automotive, oil and gas, liquid natural gas transport, coatings and construction, printed circuit boards, consumer, industrial and automotive electronics, consumer and industrial appliances, electrical power transmission and distribution, recreational sports equipment, medical appliances and food and beverage packaging.

Products and Markets

Aerospace. Our Advanced Materials segment is a leading global supplier of advanced, high-performance materials for the fabrication and repair of aircraft components. We supply leading aerospace companies with innovations in composites, adhesives, laminating and repair systems, alongside innovative carbon nanotube technologies.

We offer a wide range of materials to the aerospace market under the ARALDITE®, EPIBOND®, EPOCAST®, URALANE® and MIRALON® brands. Many of these products are qualified under the specification of major aerospace original equipment manufacturers (“OEMs”), complying with appropriate regulations governing large civil aircraft.

Automotive. We offer to the automotive market, including leading automotive OEMs and Tier 1 suppliers, high-end composite and adhesive formulations, specialty resins and toughening agents. Lightweight, strength, flexibility, shorter cycle time and fatigue resistance are key requirements of our industrial partners.

Our Advanced Materials segment has a long history of delivering a wide range of solutions meeting stringent requirements for automotive electronics applications, such as high temperature and chemical resistance, frame-retardancy and excellent mechanical and dielectric properties. The strong global push for electric vehicles opens new opportunities in electric motor thermal management and battery performance enhancement with our innovative encapsulants, toughening agents and carbon materials.

Electrical Infrastructure. We are a leading global supplier of insulating materials for motors, generators, switchgears, distribution and instrument transformers, and insulators and bushings for electrical power applications. The products formulated by our Advanced Materials segment are designed to provide the electrical equipment an extended service life and meet specific industry requirements for electrical insulation in indoor and outdoor environments.

Coatings Infrastructure. We offer expertise in curing and toughening technologies and a portfolio of specialized resins and additives to the manufacturers of paints and construction materials. Our product technologies, including epoxy hardeners, phenoxy and acrylonitrile-butadiene reactive liquid polymers and high solid or water-based components, enable customers to address challenging industry requirements, such as resistance to aggressive chemicals and high temperature, adhesion to difficult substrates, excellent mechanical properties, high drying speed and easy re-coatability, low temperature and sub-zero cure and low VOC and environmental impact.

General Industry. We offer high-end adhesives and composite formulations, specialty resins, toughening agents and rubber polymers to a large variety of industrial applications, such as sport equipment, leisure and shipping boats, engineering machineries, consumer electronics, rubber consumables and the do-it-yourself market.

ARALDITE® is an important brand in high-performance adhesive technologies. We offer formulation expertise in various chemistries, including epoxies, polyurethanes, methacrylates, phenolics, mercaptan and acrylonitrile-butadiene-based polymer products. Our materials address requirements such as long open times for large area applications, fast-curing adhesives for early removal and rapid through-put, resistance to high temperature, water and chemicals, thixotropy for gap-filling or vertical applications, and toughness, impact-resistance and elasticity to cope with different thermal expansions when bonding larger structures. Our adhesives are used in a large variety of industrial applications.

Sales and Marketing

We maintain multiple routes to market to service our diverse and fragmented customer base throughout the world. These routes to market range from using our own direct sales force, distribution to mass distribution. Our direct sales force focuses on engineering solutions for our major customers who purchase significant amount of product. We use specialist distributors to augment our sales effort in niche markets and applications where we do not believe it is appropriate to develop direct sales resources. We use mass general distribution channels to sell our products into a wide range of general applications where technical expertise is less important, which reduces our overall selling expenses. We believe our use of multiple routes to market enables us to reach a broader customer base at an efficient cost.

We conduct sales activities through dedicated regional sales teams in EMEAI, Asia and the Americas. Our global customers are covered by key account managers who are familiar with the specific requirements of these customers. The management of long-standing customer relationships is critical to the sales and marketing process.

Manufacturing and Operations

We are a global business serving customers in three principal geographic regions: EAMEI, Asia and the Americas. In order to service our customers efficiently, we maintain manufacturing plants around the world with a strategy of global, regional and local manufacturing employed to optimize the level of service and minimize the cost to our customers. The following table summarizes the plants that we operate:

	Description of facility	
Location	**Synthesis**	**Formulations**
Akron, Ohio	✓	
Ashtabula, Ohio	✓	✓
Bad Säckingen, Germany		✓
Bergkamen, Germany	✓	
Duxford, U.K.	✓	✓
East Lansing, Michigan		✓
Harrison City, Pennsylvania		✓
Ho Chi Minh City, Vietnam		✓
Los Angeles, California		✓
McIntosh, Alabama	✓	✓
Monthey, Switzerland	✓	✓
Pamplona, Spain	✓	
Panyu, China(1)	✓	✓
Rock Hill, South Carolina	✓	✓
Taboão da Serra, Brazil		✓

(1) 95%-owned and consolidated manufacturing joint venture with Guangzhou Sheng'an Package Company Limited.

Raw Materials

The principal raw materials we purchase for the manufacture of basic and advanced epoxy resins are epichlorohydrin, bisphenol A, MDA, phenol and aminophenols. We also purchase amines, polyols, isocyanates, acrylic materials, hardeners and fillers for the production of our formulated polymer systems and complex chemicals and additives. In our specialty nitrile latexes and carboxyl terminated acrylonitrile-butadiene copolymer product lines, acrylonitrile and butadiene are the main raw materials purchased. For production of mercaptan curatives, we purchase polyols, epichlorohydrin and hydrogen sulfide. Raw material costs constitute a sizeable percentage of the costs for certain applications. We have supply contracts with a number of suppliers. The terms of our supply contracts vary, but in general, these contracts contain provisions that set forth the quantities of product to be supplied and purchased. Formula pricing is sometimes used if advantageous for the business.

Additionally, in our European operations, we produce some of our most important raw materials, such as BLR and its basic derivatives, which are the basic building blocks of many of our products. In the Americas and Asia, we procure BLR on the open market from a number of suppliers.

We consume certain amines produced by our Performance Products segment and isocyanates produced by our Polyurethanes segment, which we use to formulate our Advanced Materials products.

Competition

The markets in which our Advanced Materials segment competes are diverse and require an appropriate human capital and asset footprint to compete effectively. The competitive intensity, capital investment and development of proprietary technology and maintenance of product research and development are all market specific. We operate dedicated technology centers in Basel, Switzerland; The Woodlands, Texas; Merrimack, New Hampshire, and Shanghai, China in support of our product and technology development. Among our competitors are some of the world’s largest chemical companies with integrated raw material value chains to formulation companies that leverage intellectual and highly proprietary technology for problem solving.

Aerospace. Our leading market position is driven by our specialty resins, curing and toughening agents and formulations offerings backed by customer-specific certifications, quality and consistency. These products are value-added, and differentiated, backed by many years of reliable global supply and service. Our major competitors include 3M, Henkel and Sumitomo.

Automotive. Our automotive market is driven by light weight, cost effective production and assembling and durability of electrical devices and high-speed electronics, and is serviced by our leading positions in systems formulations, curing and toughening technologies, backed by application and process manufacturing knowledge. Our product offering allows for reliable and competitive solutions, with a strong ARALDITE® and PROBIMER® brand reputation, a robust supply chain and a specialized distribution channel to fulfill customers’ expectant demand for service and quality. Our major competitors include Kaneka, Taiyo and Westlake.

Electrical Infrastructure. Our leading position in these markets is primarily based on formulations expertise, product reliability and performance, process expertise and technical support. Our competitive strengths result from our focus on defined market segment needs, our long-standing customer relationships, product reliability and technical performance, and reputation and recognition as a quality supplier. Our major competitors include Aditya Birla, Nagase, Westlake and Xiongrun.

Coatings Infrastructure. Our long-standing position in these markets is served by our specialty resins and additives. Our additives and specialty resins offerings, including epoxy hardeners, phenoxy and acrylonitrile-butadiene reactive liquid polymers and high solid or water-based components, are value-added products that allow our customers to differentiate their own products. Our major competitors include Allnex, Evonik, Kukdo and Westlake.

General Industry. Our adhesive markets are being driven by cost effective production and assembling and are serviced by our leading positions in systems formulations, curing and toughening technologies backed by application and process manufacturing knowledge. Our adhesive offering allows for reliable and competitive solutions with a strong ARALDITE® brand reputation, a robust supply chain and a specialized distribution channel to fulfill customers’ expectant demand for service and quality. Our major competitors include 3M, Henkel, ITW and Parker Hannifin.

RESEARCH AND DEVELOPMENT

We support our businesses with a major commitment to research and development, technical services and process engineering improvement. Our research and development centers are located in The Woodlands, Texas; Everberg, Belgium; Basel, Switzerland; Merrimack, New Hampshire; and Shanghai, China. Other process development/technical service centers are located in Deggendorf, Germany, Auburn Hills, Michigan and Derry, New Hampshire (Polyurethanes); and Monthey, Switzerland, MacIntosh, Alabama, Akron, Ohio and Panyu, China (Advanced Materials).

INTELLECTUAL PROPERTY RIGHTS

Proprietary protection of our processes, apparatuses and other technology and inventions is important to our businesses. We own approximately 2,485 unexpired patents and have approximately 965 patent applications (including provisionals) currently pending. While a presumption of validity exists with respect to issued U.S. patents, we cannot assure that any of our patents will not be challenged, invalidated, circumvented or rendered unenforceable. Furthermore, we cannot assure the issuance of any pending patent application, or that if patents do issue, that these patents will provide meaningful protection against competitors or against competitive technologies. Additionally, our competitors or other third parties may obtain patents that restrict or preclude our ability to lawfully produce or sell our products in a competitive manner.

We also rely upon unpatented proprietary know-how and continuing technological innovation and other trade secrets to develop and maintain our competitive position. There can be no assurance, however, that confidentiality and other agreements into which we enter and have entered will not be breached, that they will provide meaningful protection for our trade secrets or proprietary know-how, or that adequate remedies will be available in the event of an unauthorized use or disclosure of such trade secrets and know-how. In addition, there can be no assurance that others will not obtain knowledge of these trade secrets through independent development or other access by legal means.

In addition to our own patents and patent applications and proprietary trade secrets and know-how, we are a party to certain licensing arrangements and other agreements authorizing us to use trade secrets, know-how and related technology and/or operate within the scope of certain patents owned by other entities. We also have licensed or sub-licensed intellectual property rights to third parties.

We have associated brand names with a number of our products, and we have approximately 2,900 trademark registrations and 178 pending trademark applications globally. These registrations and applications include extensions of protection under the Madrid system for the international registration of marks. However, there can be no assurance that the trademark registrations will provide meaningful protection against the use of similar trademarks by competitors, or that the value of our trademarks will not be diluted.

Because of the breadth and nature of our intellectual property rights and our business, we do not believe that any single intellectual property right (other than certain trademarks for which we intend to maintain the applicable registrations) is material to our business. Moreover, we do not believe that the termination of intellectual property rights expected to occur over the next several years, either individually or in the aggregate, will materially adversely affect our business, financial condition or results of operations.

HUMAN CAPITAL MANAGEMENT

As of December 31, 2022, we employed approximately 7,000 associates in our operations around the world. Approximately 2,000 of these employees are located in the U.S., while approximately 5,000 are located in other countries.

We believe our employees are the foundation of our success. Our overall talent acquisition and retention strategy is designed to attract and retain diverse and qualified candidates to meet our performance goals on an ongoing basis and enable the success of our Company. Our key areas of focus include:

Health and Safety: Our global health and safety programs are designed around dedicated environmental, health and safety ("EHS") Standards and Procedures specifically tailored at the facility level to address the different jurisdictions and regulations, specific operating hazards and unique working environments. The Company's objectives focus on regulatory compliance and protection of people and the environment. Compliance with the EHS Standards and Procedures are evaluated through site self-audits as well as regularly scheduled Corporate EHS audits. In addition, other management systems applicable to many of our sites include third party verification of Responsible Care® and ISO 14001. A key metric used to assess the safety performance of our operations is the ASTM 2920 Level 1 injury rate, which follows a uniform international method for recording occupational injuries and illnesses. In the years ended December 31, 2022 and 2021, we had injury rates of 0.21 and 0.10, respectively.

Ethics and Compliance: At Huntsman our commitment to our values of Honesty, Integrity, Respect and Responsibility unite us globally and fosters high ethical standards in our relationships with each other, with our customers and with all those we do business with. Our Business Conduct Guidelines, along with the policies and procedures referenced within the guidelines, provide guidance for all employees on topics such as anti-corruption and bribery, anti-trust and competition law, discrimination including our policy on harassment and retaliation, privacy, appropriate use of company assets, protecting confidential information and reporting concerns and violations. The guidelines are used to reinforce our commitment to operating in a fair, honest, responsible and ethical manner and to emphasize the importance of having an open and welcoming environment in which all employees feel empowered to do what is right. Should potential violations of the guidelines, policies, procedures or the law occur, employees are encouraged to voice concerns promptly and are reminded that we do not tolerate retaliation against anyone who reports a potential violation in good faith. All employees are required to complete the training on the Business Conduct Guidelines annually, and our Chief Compliance Officer reports matters related to the Business Conduct Guidelines to the Audit Committee of our Board of Directors on a quarterly basis.

Compensation and Benefits: Our policy is to competitively compensate our associates and to appropriately motivate associates to provide value to our shareholders. Our compensation philosophy is to align both short-term and long-term incentives with our strategic objectives and to take into account market forces, best practices, and the performance of our Company and the employee. We offer employees benefits that vary by country and are designed to meet or exceed local laws and to be competitive in the marketplace. Examples of benefits offered in the U.S. include a 401(k) plan with employer contributions, health benefits, business travel and life/disability insurance, supplemental voluntary insurance and paid time off.

Training and Talent Development: We are committed to the continued development of our workforce. We provide technical and leadership training to our associates, customers and suppliers who work for or with our products and services. Training is provided in a number of formats to accommodate the learner's style, pace, location, technological knowledge and access.

ENVIRONMENTAL, HEALTH AND SAFETY MATTERS

General

We are subject to extensive federal, state, local and international laws, regulations, rules and ordinances relating to occupational health and safety, process safety, pollution, protection of the environment and natural resources, product management and distribution, and the generation, storage, handling, transportation, treatment, disposal and remediation of hazardous substances and waste materials. In the ordinary course of business, we are subject to frequent environmental inspections and monitoring and occasional investigations by governmental enforcement authorities. In addition, our production facilities require operating permits that are subject to renewal, modification and, in certain circumstances, revocation. Actual or alleged violations of safety laws, environmental laws or permit requirements could result in restrictions or prohibitions on plant operations or product distribution, substantial civil or criminal sanctions, or injunctions limiting or prohibiting our operations altogether. In addition, some environmental laws may impose liability on a strict or joint and several basis. Moreover, changes in environmental regulations could inhibit or interrupt our operations, or require us to modify our facilities or operations and make significant environmental compliance expenditures. Accordingly, environmental or regulatory matters may cause us to incur significant unanticipated losses, costs or liabilities. Information related to EHS matters may also be found in other areas of this report including "—Item 1A. Risk Factors," "Note 2. Summary of Significant Accounting Policies—Environmental Expenditures" to our consolidated financial statements and "Note 21. Environmental Health and Safety Matters" to our consolidated financial statements.

Environmental, Health and Safety Systems

We are committed to achieving and maintaining compliance with all applicable EHS legal requirements, and we have developed policies and management systems that are intended to identify the multitude of EHS legal requirements applicable to our operations, enhance compliance with applicable legal requirements, improve the safety of our employees, contractors, community neighbors and customers and minimize the production and emission of wastes and other pollutants. We cannot guarantee, however, that these policies and systems will always be effective or that we will be able to manage EHS legal requirements without incurring substantial costs. Although EHS legal requirements are constantly changing and are frequently difficult to comply with, these EHS management systems are designed to assist us in our compliance goals while also fostering efficiency and improvement and reducing overall risk to us. For the years ended December 31, 2022, 2021 and 2020, our capital expenditures for EHS matters totaled $44 million, $36 million and $18 million, respectively, and our estimated capital expenditures for 2023 is expected to be $32 million.

Environmental Remediation

We have incurred, and we may in the future incur, liabilities to investigate and clean up waste or contamination at our current or former facilities or facilities operated by third parties at which we may have disposed of waste or other materials. Similarly, we may incur costs for the cleanup of waste that was disposed of prior to the purchase of our businesses. Under some circumstances, the scope of our liabilities may extend to damages to natural resources.

In cases where our potential liabilities arise from historical contamination based on operations and other events occurring prior to our ownership of a business or specific facility, we frequently obtain an indemnity agreement from the prior owner addressing remediation liabilities arising from pre-closing conditions. We have successfully exercised our rights under these contractual covenants for a number of sites and, where applicable, mitigated our ultimate remediation liabilities. We cannot assure you, however, that the liabilities for all such matters subject to indemnity will be honored by the prior owner or that our existing indemnities will be sufficient to cover our liabilities for such matters.

Based on available information and the indemnification rights we believe are likely to be available, we believe that the costs to investigate and remediate known contamination will not have a material effect on our financial statements. However, if such indemnities are not honored or do not fully cover the costs of investigation and remediation or we are required to contribute to such costs, then such expenditures may have a material effect on our financial statements. At the current time, we are unable to estimate the total cost, exclusive of indemnification benefits, to remediate contaminated sites.

Regulatory Matters

Greenhouse Gas Regulation and Climate Change

Globally, our operations are increasingly subject to regulations that seek to reduce emissions of greenhouse gases (“GHGs”), such as carbon dioxide and methane, which may be contributing to changes in the earth’s climate. At the Durban negotiations of the Conference of the Parties to the Kyoto Protocol in 2012, a limited group of nations, including the European Union (the “EU”), agreed to a second commitment period for the Kyoto Protocol, an international treaty that provides for reductions in GHG emissions. More significantly, the EU GHG Emissions Trading System (“ETS”), established pursuant to the Kyoto Protocol to reduce GHG emissions in the EU, continues in its fourth phase. The European Commission established a market stability reserve to address a surplus of allowances and improve the system’s resilience that started operating in 2019. In addition, the EU has set a binding target to reduce domestic GHG emissions by at least 40% below the 1990 level by 2030 and a binding target to increase the share of renewable energy to at least 32% of the EU’s energy consumption by 2030. In July 2021, the European Commission proposed legislation to increase the greenhouse gas emission reduction target to at least 55% and the renewable energy target to 40%.

In addition, at the 2015 United Nations Framework Convention on Climate Change in Paris, the U.S. and nearly 200 other nations entered into an international climate agreement, which went into effect in November 2016 (the “Paris Agreement”). Although the agreement does not create any binding obligations for nations to limit their GHG emissions, it does include pledges to voluntarily limit or reduce future emissions. The U.S. rejoined the Paris Agreement on February 19, 2021. In addition, in September 2021, U.S. President Biden publicly announced the Global Methane Pledge, a pact that aims to reduce global methane emissions at least 30% below 2020 levels by 2030. Since its formal launch at the United Nations Climate Change Conference (COP26), over 100 countries have joined the pledge.

Domestic efforts to curb GHG emissions are being led by the U.S. Environmental Protection Agency’s (the “EPA”) GHG regulations and similar programs of certain states. To the extent that our domestic operations are subject to the EPA’s GHG regulations, we may face increased capital and operating costs associated with new or expanded facilities. Significant expansions of our existing facilities or construction of new facilities may be subject to the Clean Air Act’s (the “CAA”) requirements for pollutants regulated under the Prevention of Significant Deterioration and Title V programs. Some of our facilities are also subject to the EPA’s Mandatory Reporting of Greenhouse Gases rule, and any further regulation may increase our operational costs. In April of 2022, the U.S. Securities and Exchange Commission (“SEC”) proposed new rules regarding the reporting of GHG emissions and impacts of such emissions and climate change generally on businesses subject to SEC reporting requirements. These rules, if adopted, could result in additional costs for preparing financial statements and additional liability. It is uncertain at this time whether the rules, as proposed, will be adopted and go into effect.

We are already managing and reporting GHG emissions, to varying degrees, as required by law for our sites in locations subject to U.S. federal and state requirements, Kyoto Protocol obligations and/or ETS requirements. Although these sites are subject to existing GHG legislation, few have experienced or anticipate significant cost increases as a result of these programs, although it is possible that GHG emission restrictions may increase over time. Potential consequences of such restrictions include capital requirements to modify assets to meet GHG emission restrictions and/or increases in energy costs above the level of general inflation, as well as direct compliance costs. Currently, however, it is not possible to estimate the likely financial impact of potential future regulation on any of our sites.

Finally, most scientists have concluded that increasing concentrations of GHGs in the earth’s atmosphere may produce climate changes that have significant physical effects, such as increased frequency and severity of storms, droughts, and floods and other climatic events. If any of those effects were to occur, they could have an adverse effect on our assets and operations.

AVAILABLE INFORMATION

We maintain an internet website at http://www.huntsman.com. 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 through our website as soon as reasonably practicable after we file these materials with the SEC. We also provide electronic or paper copies of our SEC filings free of charge upon request.

GLOSSARY OF CHEMICAL TERMS

BDO—butane diol
BLR—base liquid resin
DGA® Agent—DIGLYCOLAMINE® agent
DPA—diphenylamine
EDC—ethylene dichloride
EG—ethylene glycol
EO—ethylene oxide
MDA—methylene dioxy amphetamine
MDI—methyl diphenyl diisocyanate
MNB—mononitrobenzene
MTBE—methyl tertiary-butyl ether
PBT—polybutylene terephthalate
PO—propylene oxide
Polyols—a substance containing several hydroxyl groups. A diol, triol and tetrol contain two, three and four hydroxyl groups, respectively.
TDI—toluene diisocyanate
TPU—thermoplastic polyurethane
UPR—unsaturated polyester resin

ITEM 1A. RISK FACTORS

Any of the following risks could materially and adversely affect our business, results of operations, financial condition and liquidity.

RISKS RELATED TO OUR BUSINESS AND OPERATIONS

Our industry is affected by global economic factors, including risks associated with volatile economic conditions, and current economic conditions have had, and may continue to have, significant effects on our customers and suppliers and may in the future have a material adverse effect on our business, operating results, financial condition and stock price.

Our financial results are substantially dependent on overall economic conditions in the U.S., Europe and Asia. Declining economic conditions, or negative perceptions about economic conditions, could result in a substantial decrease in demand for our products and could adversely affect our business. The timing and extent of any changes to currently prevailing market conditions is uncertain, and supply and demand may be unbalanced at any time. The effects of global economic conditions in certain markets include, among other things, significant reductions in available capital and liquidity from credit markets, supply or demand driven inflationary pressures, and substantial fluctuations in currency values worldwide. Uncertain economic conditions and market instability make it particularly difficult for us to forecast demand trends. As a consequence, we may not be able to accurately predict future economic conditions or the effect of such conditions on our financial condition or results of operations. We can give no assurances as to the timing, extent or duration of the current or future economic cycles impacting the industries in which we operate.

Disruptions in production at our manufacturing facilities may have a material adverse impact on our business, results of operations and/or financial condition.

Manufacturing facilities in our industry are subject to planned and unplanned production shutdowns, turnarounds, outages and other disruptions. Any serious disruption at any of our facilities could impair our ability to use our facilities and have a material adverse impact on our revenues and increase our costs and expenses. Alternative facilities with sufficient capacity may not be available, may cost substantially more or may take a significant time to increase production or qualify with our customers, any of which could negatively impact our business, results of operations and/or financial condition. Long-term production disruptions may cause our customers to seek alternative supply which could further adversely affect our profitability.

Unplanned production disruptions may occur for external reasons including natural disasters, weather, disease, strikes, transportation interruption, government regulation, political unrest or terrorism, or internal reasons, such as fire, unplanned maintenance or other manufacturing problems. Any significant production disruption could have a material impact on our operations, operating results and financial condition.

In addition, we rely on a number of vendors, suppliers, and in some cases sole-source suppliers, service providers, toll manufacturers and collaborations with other industry participants to provide us with chemicals, feedstocks and other raw materials, along with energy sources and, in certain cases, facilities that we need to operate our business. If the business of these third parties is disrupted, some of these companies could be forced to reduce their output, shut down their operations or file for bankruptcy protection. If this were to occur, it could adversely affect their ability to provide us with the raw materials, energy sources or facilities that we need, which could materially disrupt our operations, including the production of certain of our products. Moreover, it could be difficult to find replacements for certain of our business partners without incurring significant delays or cost increases. If we are required to obtain alternate sources for raw materials because a supplier is unwilling or unable to perform under raw material supply agreements, if a supplier terminates its agreements with us, if we are unable to renew our existing contracts, or if we are unable to obtain new long-term supply agreements, we may not be able to obtain these raw materials in sufficient quantities, on economic terms, or in a timely manner, and we may not be able to enter into supply agreements on terms as favorable to us as our existing supply agreements, if at all. All of these risks could have a material adverse effect on our business, results of operations, financial condition and liquidity.

While we maintain business recovery plans that are intended to allow us to recover from natural disasters or other events that could disrupt our business, we cannot provide assurances that our plans would fully protect us from the effects of all such disasters or from events that might increase in frequency or intensity due to climate change. In addition, insurance may not adequately compensate us for any losses incurred as a result of natural or other disasters. In areas prone to frequent natural or other disasters, insurance may become increasingly expensive or not available at all. Furthermore, some potential climate-driven losses, particularly inundation due to sea-level rise, may pose long-term risks to our physical facilities such that operations cannot be restored in their current locations.

The markets for many of our products are cyclical and volatile, and we may experience depressed market conditions for such products.

The cyclicality in the markets for many of our products occurs as a result of alternating periods of tight supply, causing prices and margins to increase, followed by periods of lower capacity utilization, resulting in oversupply and declining prices and margins. The volatility these markets experience occurs as a result of changes in the demand for products as a consequence of global economic activity, changes in energy prices and changes in customers' requirements. For example, demand for our products depends in part on aerospace, housing and construction industries, which are cyclical in nature and have historically been impacted by downturns in the economy. The supply-demand balance is also impacted by capacity additions or reductions that result in changes in utilization rates. The cyclicality and volatility of our industry results in significant fluctuations in profits and cash flow from period to period and over the business cycle.

Our results of operations may be adversely affected by international business risks, including fluctuations in currency exchange rates, legal restrictions and taxes.

We conduct a majority of our business operations outside the U.S., and these operations are subject to risks normally associated with international operations. These risks include the need to convert currencies that may be received for our products into currencies in which we purchase raw materials or pay for services, which could result in a gain or loss depending on fluctuations in exchange rates. We transact business in many foreign currencies, including euros, Swiss francs, Chinese renminbi, Indian rupees, Brazilian reals and Thai bahts. We translate our local currency financial results into U.S. dollars based on average exchange rates prevailing during the reporting period or the exchange rate at the end of that period. During times of a strengthening U.S. dollar, our reported international sales and earnings may be reduced because the local currency may translate into fewer U.S. dollars. Because we currently have significant operations located outside the U.S., we are exposed to fluctuations in global currency rates which may result in gains or losses on our financial statements.

Other risks of international operations include trade barriers, tariffs, exchange controls, cash repatriation restrictions, national and regional labor strikes, social and political risks, general economic risks and required compliance with a variety of U.S. and foreign laws, including monetary policies, tax laws, the Foreign Corrupt Practices Act (and foreign equivalents), export controls and regulations administered by the Office of Foreign Assets Control. Any changes in tariffs or trade barriers could make our products less competitive compared to other producers not subject to the same tariffs or trade barriers. Any decision to repatriate cash as dividends could subject us to foreign and U.S. federal and state income taxes without any offsetting foreign tax credit relief. Although we maintain an anti-corruption compliance program throughout our company, violations of our compliance program may result in criminal or civil sanctions, including material monetary fines, penalties and other costs against us or our employees, and may have a material adverse effect on our business. Furthermore, in foreign jurisdictions where legal processes may vary from country to country, we may experience difficulty in enforcing agreements. In jurisdictions where bankruptcy laws and practices vary, we may experience difficulty collecting foreign receivables through foreign legal systems. The occurrence of these risks, among others, could disrupt the businesses of our international subsidiaries, which could significantly affect their ability to make distributions to us.

We operate in a significant number of jurisdictions, which contributes to the volatility of our effective tax rate. Changes in tax laws or the interpretation of tax laws in the jurisdictions in which we operate may affect our effective tax rate. For example, a number of countries, as well as organizations such as the Organization for Economic Cooperation and Development, support a global minimum tax initiative. Such countries and organizations are also actively considering changes to existing tax laws or have proposed new tax laws that could increase our tax obligations. In addition, generally accepted accounting principles in the U.S. ("GAAP" or "U.S. GAAP") have required us to place valuation allowances against our net operating losses and other deferred tax assets in certain tax jurisdictions. These valuation allowances result from analysis of positive and negative evidence supporting the realization of tax benefits. Negative evidence includes a cumulative history of pre-tax operating losses in specific tax jurisdictions. Changes in valuation allowances have resulted in material fluctuations in our effective tax rate. Economic conditions or changes in tax laws may dictate the continued imposition of current valuation allowances and, potentially, the establishment of new valuation allowances. While significant valuation allowances remain, our effective tax rate will likely continue to experience significant fluctuations. Furthermore, certain foreign jurisdictions may take actions to delay our ability to collect value-added tax refunds.

Significant price volatility or interruptions in supply of our raw materials and energy may result in increased costs that we may be unable to pass on to our customers, which could reduce our profitability.

We purchase a substantial portion of our raw materials and energy from third-party suppliers and their costs represent a substantial portion of our operating expenses. The prices for raw materials and energy generally follow price trends of, and vary with market conditions for, crude oil and natural gas feedstocks, which are highly volatile and cyclical. In particular, the impacts of COVID-19 have disrupted nearly every aspect of the global supply chain, and the resulting increases in energy costs and scarcity of raw materials has increased the cost of operating our business. While we attempt to match cost increases with corresponding product price increases or surcharges, we are not always able to raise product prices immediately or at all. Timing differences between raw material and energy prices, which may change daily, and contract product prices, which in many cases are negotiated only monthly or less often, have had and may continue to have a negative effect on our cash flow. Any cost increase that we are not able to pass on to our customers could have a material adverse effect on our business, results of operations, financial condition and liquidity.

In general, the feedstocks and other raw materials we consume are organic chemical commodity products that are readily available at market prices. There are, however, several raw materials for which there are only a limited number of suppliers or a single supplier. To mitigate potential supply constraints, we frequently enter into supply agreements with particular suppliers, evaluate alternative sources of supply and evaluate alternative technologies to avoid reliance on limited or sole-source suppliers. In addition, where supply relationships are concentrated, particular attention is paid by the parties to ensure strategic intentions are aligned to facilitate long-term planning. If certain of our suppliers are unable to meet their obligations under present supply agreements, we may be forced to pay higher prices to obtain the necessary raw materials from other sources and we may not be able to increase prices for our finished products to recoup the higher raw materials costs. Any interruption in the supply of raw materials could increase our costs or decrease our revenues, which could reduce our cash flow. The inability of a supplier to meet our raw material needs could have a material adverse effect on our financial statements and results of operations.

The number of sources for and availability of certain raw materials is also specific to the particular geographical region in which a facility is located. Political and economic instability in the countries from which we purchase our raw material supplies could adversely affect their availability. In addition, if raw materials become unavailable within a geographic area from which they are now sourced, then we may not be able to obtain suitable or cost-effective substitutes. We may also experience higher operating costs such as energy costs, which could affect our profitability. We may not always be able to increase our selling prices to offset the impact of any higher production costs or reduced production levels, which could reduce our earnings and decrease our liquidity.

Our results of operations and financial condition have been, and may in the future be, adversely impacted by COVID-19, and the duration and extent of such impacts remain uncertain.

COVID-19 has adversely affected the global economy and financial markets and has impacted our operations and financial results. In particular, certain of our key end markets, including aerospace, have been disproportionally impacted by the effects of COVID-19. The extent to which COVID-19 may continue to adversely impact our business depends on future developments, including:

The extent to which COVID-19 may continue to adversely impact our business depends on future developments, including:

- the duration, scope, severity and geographic spread of COVID-19 and its variants, including the extent of any future resurgences;
- governmental, business and individual actions that have been and continue to be taken in response to COVID-19, including social distancing, work-at-home, stay-at-home and shelter-in-place orders and shutdowns, travel restrictions and quarantines;
- the effects of COVID-19 on our customers, suppliers, supply chain and other business partners;
- our ability to provide our products and protect the health and well-being of our employees;
- our ability to increase prices and pass along to customers the additional cost we have experienced since the beginning of the COVID-19 pandemic;
- business disruptions caused by actual or potential plant, workplace and office closures, and an increased reliance on employees working from home, disruptions to or delays in ongoing product development, operations, staffing shortages, travel limitations, employee health issues, cyber security and data accessibility, or communication or mass transit disruptions, any of which could adversely impact our business operations or delay necessary interactions with local regulators, manufacturing sites and other important agencies and contractors;
- the risk that we could be exposed to liability, negative publicity or reputational harm related to any incidents of actual or perceived transmission of COVID-19 among employees at our facilities;
- the ability of our customers to pay for our products;
- the ability of our suppliers to provide raw materials;
- the impacts of COVID-19 on the financial markets and economic activity generally;
- our ability to access usual sources of liquidity on reasonable terms; and
- our ability to comply with the financial covenants in our debt agreements if a material and prolonged economic downturn results in increased indebtedness or substantially lower adjusted EBITDA.

Any failure to complete the proposed sale of our Textile Effects Business could materially adversely impact the market price of our common stock as well as our business, financial condition and results of operations.

On August 9, 2022, we entered into a definitive agreement to sell our Textile Effects Business to Archroma for a purchase price of $593 million in cash plus the assumption of underfunded pension liabilities, and we expect the net after tax cash proceeds to be approximately $540 million before fees and subject to certain customary purchase price adjustments as set forth in the purchase agreement. Completion of the proposed sale is subject to our and Archroma’s performance under the purchase agreement. Unanticipated developments could delay or prevent the transaction from closing, which could cause our common stock to experience negative reactions from the financial markets.

In addition, our ongoing businesses may be adversely affected, and we may be subject to certain risks and consequences, including, but not limited to, the following:

- execution of the proposed sale has required, and will continue to require, significant time and attention from management, which may postpone the execution of other initiatives that may have been beneficial to us;
- if the proposed sale is not completed, any litigation or judicial actions that may be instituted by or against us, our Board of Directors and others relating to the proposed sale or any settlement of such litigation or judicial action and any associated costs and expenses; and
- whether or not the proposed sale is completed, we may be responsible for certain costs and expenses, such as legal, accounting and other professional fees, which may be significant.

Any of these factors could have a material adverse effect on our financial condition, results of operations, cash flows and the price of our common stock.

Our efforts to grow and transform our businesses may require significant investments; if our strategies are unsuccessful, our business, results of operations and/or financial condition may be materially adversely affected.

We continuously evaluate opportunities for growth and change. These initiatives may involve making acquisitions, entering into partnerships and joint ventures, divesting assets, restructuring our existing operations and assets, creating new financial structures and building new facilities—any of which could require a significant investment and subject us to new kinds of risks. We may incur additional indebtedness to finance these opportunities. If our strategies for growth and change are not successful, we could face increased financial pressure, such as increased cash flow demands, reduced liquidity and diminished access to financial markets, and the equity value of our businesses could be diluted.

The implementation of strategies for growth and change may create additional risks, including:

- diversion of management time and attention away from existing operations;
- requiring capital investment that could otherwise be used for the operation and growth of our existing businesses;
- disruptions to important business relationships;
- increased operating costs;
- limitations imposed by various governmental entities; and
- difficulties due to lack of or limited prior experience in any new markets we may enter.

Our inability to mitigate these risks or other problems encountered in connection with our strategies for growth and change could have a material adverse effect on our business, results of operations and financial condition. In addition, we may fail to fully achieve the savings or growth projected for current or future initiatives notwithstanding the expenditure of substantial resources in pursuit thereof.

We may have difficulties integrating acquired businesses and as a result, our business, results of operations and/or financial condition may be materially adversely affected.

We have completed a number of acquisitions, and we expect to continue to acquire additional businesses and enter into joint ventures as part of our business strategy. Growth through acquisitions and joint ventures involves risks, including:

- inability to efficiently operate new businesses or to integrate acquired businesses and products;
- inability to accurately predict delays in realizing the costs and benefits of acquisitions, partnerships, or joint ventures;
- unexpected losses of customers or suppliers of an acquired or existing business;
- difficulties in retaining key employees of acquired businesses;
- difficulties in realizing projected synergies; and
- exposure to unanticipated liabilities, including unexpected environmental exposures, product liability or illegal activities conducted by an acquired company or a joint venture partner.

Our inability to address these risks could cause us to fail to realize the anticipated benefits of such acquisitions or joint ventures and could have a material adverse effect on our business, results of operations and financial condition.

The industries in which we compete are highly competitive, and we may not be able to compete effectively with our competitors that have greater financial resources, which could have a material adverse effect on our business, results of operations and financial condition.

The industries in which we operate are highly competitive. Among our competitors are some of the world's largest chemical companies. Changes in the competitive landscape could make it difficult for us to retain our competitive position in various products and markets throughout the world. Some of the companies with whom we compete may be able to produce products more economically than we can. Furthermore, some of our competitors have greater financial resources, which may enable them to invest significant capital into their businesses, including expenditures for research and development.

While we are engaged in a range of research and development programs to develop new products and processes, to improve and refine existing products and processes, and to develop new applications for existing products, the failure to develop new products, processes or applications could make us less competitive. Moreover, if any of our current or future competitors develops proprietary technology that enables them to produce products at a significantly lower cost, our technology could be rendered uneconomical or obsolete.

Further, it is possible that we could abandon certain products, processes, or applications due to potential infringement of third party intellectual property rights or that we could be named in future litigation for the infringement or misappropriation of a competitor's or other third party's intellectual property rights, which could include a claim for injunctive relief and damages, and, if so, such adverse results could have a material adverse effect on our business, results of operations and financial position. In addition, certain of our competitors in various countries in which we do business, including China, may be owned by or affiliated with members of local governments and political entities.

These competitors may get special treatment with respect to regulatory compliance and product registration, while certain of our products, including those based on new technologies, may be delayed or even prevented from entering into the local market.

Certain of our businesses use technology that is widely available. Accordingly, barriers to entry, apart from capital availability, may be low in certain product segments of our business. The entrance of new competitors into any of our businesses may reduce our ability to maintain margins or capture improving margins in circumstances where capacity utilization in the industry is increasing. Increased competition in any of our businesses could compel us to reduce the prices of our products, which could result in reduced margins and loss of market share and have a material adverse effect on our business, results of operations, financial condition and liquidity.

We are subject to risks relating to our information technology systems, and any technology disruption or cybersecurity incident could negatively affect our operations.

We rely on information technology systems across our operations, including for management, supply chain and financial information and various other processes and transactions. Our ability to effectively manage our business depends on the security, reliability and capacity of these systems. Our technology systems or the technology systems of third parties on which we rely, are vulnerable to disruption from circumstances beyond our control including fire, natural disasters, power outages, system failures, security breaches, espionage, cyber-attacks, viruses, theft and inadvertent release of information. Any such disruption to these Information technology systems could disrupt our operations or result in the disclosure of proprietary information about our business or confidential information concerning our customers or employees which could result in negative publicity/brand damage, violation of privacy laws, potential liability, including litigation/investigation/remediation or other legal actions against us or the imposition of penalties, fines, fees or liabilities, which may not be covered by our insurance policies. Any or all the above would potentially cause delays or cancellations of customer orders or impede the manufacture or shipment of products, processing of transactions or reporting of financial results.

While we have invested and will continue to invest in technology security initiatives and disaster recovery plans, we may not be able to implement measures that will protect against all the significant risks to our information technology systems. We have put in place security measures designed to protect against the misappropriation or corruption of our systems, intentional or unintentional disclosure of confidential information, or disruption of our operations. Current employees have, and former employees may have, access to a significant amount of information regarding our operations which could be disclosed to our competitors or otherwise used to harm us. Moreover, our operations in certain locations, such as China, may be particularly vulnerable to security attacks or other problems. Any breach of our security measures could result in unauthorized access to and misappropriation of our information, corruption of data or disruption of operations or transactions, any of which could have a material adverse effect on our business. In addition, we could be required to expend significant additional efforts to respond to information technology issues or to protect against threatened or actual security breaches.

Finally, data privacy is subject to frequently changing rules and regulations in countries where we do business. For example, the EU adopted a regulation that became effective in May 2018, the General Data Protection Regulation (“GDPR”), which requires companies to meet regulations regarding the handling of personal data. Our failure to successfully comply with GDPR requirements could result in substantial fines or penalties and legal liability which could tarnish our reputation.

Our operations involve risks that may increase our operating costs, which could reduce our profitability.

Although we take precautions to enhance the safety of our operations and minimize the risk of disruptions, our operations are subject to hazards inherent in the manufacturing and marketing of chemical and other products. These hazards include: chemical spills, pipeline leaks and ruptures, storage tank leaks, discharges or releases of toxic or hazardous substances or gases and other hazards incident to the manufacturing, processing, handling, transportation and storage of dangerous chemicals. We are also potentially subject to other hazards, including natural disasters and severe weather; explosions and fires; transportation problems, including interruptions, spills and leaks; mechanical failures; unscheduled downtimes; labor difficulties; remediation complications; and other risks. In addition, some equipment and operations at our facilities are owned or controlled by third parties who may not be fully integrated into our safety programs and over whom we are able to exercise limited control. Many potential hazards can cause bodily injury and loss of life, severe damage to or destruction of property and equipment and environmental damage, and may result in suspension of operations and the imposition of civil or criminal penalties and liabilities. Furthermore, we are subject to present and future claims with respect to workplace exposure, exposure of contractors on our premises as well as other persons located nearby, workers’ compensation and other matters.

We maintain property, business interruption, products liability and casualty insurance policies which we believe are in accordance with customary industry practices, as well as insurance policies covering other types of risks, including pollution legal liability insurance, but we are not fully insured against all potential hazards and risks incident to our business. Each of these insurance policies is subject to customary exclusions, deductibles and coverage limits, in accordance with industry standards and practices. As a result of market conditions, premiums and deductibles for certain insurance policies can increase substantially and, in some instances, certain insurance may become unavailable or available only for reduced amounts of coverage. If we were to incur a significant liability for which we were not fully insured, it could have a material adverse effect on our business, results of operations, financial condition and liquidity.

In addition, we are subject to various claims and litigation in the ordinary course of business. We are a party to various pending lawsuits and proceedings. For more information, see “—Item 3. Legal Proceedings” below.

Our operations, financial condition and liquidity could be adversely affected by legal claims against us, including antitrust claims.

We face risks arising from various legal actions, including matters relating to antitrust, product liability, intellectual property and environmental claims. It is possible that judgments could be rendered against us in these cases or others for which we could be uninsured or not covered by indemnity, or which may be beyond the amounts that we currently have reserved or anticipate incurring for such matters. Over the past few years, antitrust claims have been made against chemical companies. In this type of litigation, the plaintiffs generally seek injunctive relief, treble damages or the maximum damages allowed by state law, costs of suit and attorneys' fees, which may result in significant liabilities. An adverse outcome in any antitrust claim could be material and significantly impact our operations, financial condition, liquidity and business reputation.

Our business is exposed to risks associated with the creditworthiness of our suppliers, customers and business partners and the industries in which our suppliers, customers and business partners participate are cyclical in nature, both of which may adversely affect our business and results of operations.

Our business is exposed to risks associated with the creditworthiness of our key suppliers, customers and business partners and reductions in demand for our customers' products. During periods of economic disruption, more of our customers than normal may experience financial difficulties, including bankruptcies, restructurings and liquidations, which could affect our business by reducing sales, increasing our risk in extending trade credit to customers and reducing our profitability. A significant adverse change in a customer relationship or in a customer's financial position could cause us to limit or discontinue business with that customer, require us to assume more credit risk relating to that customer's receivables or limit our ability to collect accounts receivable from that customer.

Our business is dependent on our intellectual property. If our intellectual property rights cannot be enforced or our trade secrets become known to our competitors, our ability to compete may be adversely affected.

Proprietary protection of our processes, apparatuses and other technology is important to our business. While a presumption of validity exists with respect to patents issued to us in the U.S., there can be no assurance that any of our patents will not be challenged, invalidated, circumvented or rendered unenforceable. Furthermore, if any pending patent application filed by us does not result in an issued patent, or if patents are issued to us, but such patents do not provide meaningful protection of our intellectual property, then our ability to compete may be adversely affected. Additionally, our competitors or other third parties may obtain patents that restrict or preclude our ability to lawfully produce or sell our products in a competitive manner, which could have a material adverse effect on our business, results of operations, financial condition and liquidity.

We also rely upon unpatented proprietary know-how and continuing technological innovation and other trade secrets to develop and maintain our competitive position. While it is our policy to enter into agreements imposing confidentiality obligations upon our employees and third parties to protect our intellectual property, these confidentiality obligations may be breached, may not provide meaningful protection for our trade secrets or proprietary know-how, or adequate remedies may not be available in the event of an unauthorized access, use or disclosure of our trade secrets and know-how. In addition, others could obtain knowledge of our trade secrets through independent development or other access by legal means.

We may have to rely on judicial enforcement of our patents and other proprietary rights. We may not be able to effectively protect our intellectual property rights from misappropriation or infringement in countries where effective patent, trademark, trade secret and other intellectual property laws and judicial systems may be unavailable, or may not protect our proprietary rights to the same extent as U.S. law.

The failure of our patents or confidentiality agreements to protect our processes, apparatuses, technology, trade secrets or proprietary know-how or the failure of adequate legal remedies for related actions could have a material adverse effect on our business, results of operations, financial condition and liquidity.

Conflicts, military actions, terrorist attacks, political events, public health crises and general instability, along with increased security regulations related to our industry, could adversely affect our business.

Conflicts, military actions, terrorist attacks, political events and public health crises have precipitated economic instability and turmoil in international commerce and the global economy. The uncertainty and economic disruption resulting from hostilities, military action or acts of terrorism may impact any or all of our facilities and operations or those of our suppliers or customers. Accordingly, any conflict, military action or terrorist attack that impacts us or any of our suppliers or customers, could have a material adverse effect on our business, results of operations, financial condition and liquidity. Furthermore, instability and turmoil, particularly in energy-producing nations, may result in raw material cost increases.

Changes in social, political, regulatory and economic conditions or in laws and policies governing foreign trade, manufacturing, development and investment in the territories and countries where we currently develop and sell products, could adversely affect our business. For example, a number of governments have instituted regulations attempting to increase the security of chemical plants and the transportation of hazardous chemicals, which could result in higher operating costs and could have a material adverse effect on our financial condition and liquidity.

Our pension and postretirement benefit plan obligations are currently underfunded, and under certain circumstances we may have to significantly increase the level of cash funding to some or all of these plans, which would reduce the cash available for our business.

We have unfunded and underfunded obligations under some of our domestic and foreign pension and postretirement benefit plans. The funded status of our pension plans is dependent upon many factors, including returns on invested assets, the level of certain market interest rates and the discount rates used to determine pension obligations. Unfavorable returns on the plan assets or unfavorable changes in applicable laws or regulations could materially change the timing and amount of required plan funding, which would reduce the cash available for our business. In addition, a decrease in the discount rate used to determine pension obligations could result in an increase in the valuation of pension obligations, which could affect the reported funding status of our pension plans and future contributions, as well as the periodic pension cost in subsequent fiscal years.

With respect to our domestic pension and postretirement benefit plans, the Pension Benefit Guaranty Corporation (“PBGC”) has the authority to terminate an underfunded tax-qualified pension plan under limited circumstances in accordance with the Employee Retirement Income Security Act of 1974, as amended. In the event our tax-qualified pension plans are terminated by the PBGC, we could be liable to the PBGC for the entire amount of the underfunding and, under certain circumstances, the liability could be senior to our notes. With respect to our foreign pension and postretirement benefit plans, the effects of underfunding depend on the country in which the pension and postretirement benefit plan is established. For example, in the U.K. and Germany semi-public pension protection programs have the authority in certain circumstances to assume responsibility for underfunded pension schemes, including the right to recover the amount of the underfunding from us.

RISKS RELATED TO REGULATION AND ENVIRONMENTAL ACTION

We are subject to many EHS regulations that may result in unanticipated costs or liabilities, which could reduce our profitability.

We are subject to extensive federal, state, local and foreign laws, regulations, rules and ordinances relating to pollution, protection of the environment and human health and safety, and the generation, storage, handling, transportation, treatment, disposal and remediation of hazardous substances and waste materials. Actual or alleged violations of EHS laws or permit requirements could result in restrictions or prohibitions on plant operations and substantial civil or criminal sanctions, as well as, under some EHS laws, the assessment of strict liability and/or joint and several liability.

Many of our products and operations are subject to the chemical control laws of the countries in which they are located. These laws include the regulation of chemical substances and inventories under the Toxic Substances Control Act (“TSCA”) in the U.S. and the Registration, Evaluation and Authorization of Chemicals (“REACH”) and the Classification, Labeling and Packaging of substances and mixtures (“CLP”) regulations in Europe. Analogous regimes exist in other parts of the world, including China, South Korea, and Taiwan. In addition, a number of countries where we operate, including the U.K., have adopted rules to conform chemical labeling in accordance with the globally harmonized system. Many of these foreign regulatory regimes are in the process of a multi-year implementation period for these rules.

Additional new laws and regulations may be enacted or adopted by various regulatory agencies globally. For example, TSCA reform legislation was enacted in June 2016, and the EPA has begun the process of issuing new chemical control regulations. EPA issued several final rules in 2017 and 2018 under the revised TSCA related to existing chemicals, including the following: (i) a rule to establish EPA’s process and criteria for identifying chemicals for risk evaluation; (ii) a rule to establish EPA’s process for evaluating high priority chemicals and their uses to determine whether or not they present an unreasonable risk to health or the environment; and (iii) a rule to require industry reporting of chemicals manufactured or processed in the U.S. over the past 10 years. In April 2020, EPA finalized revisions to its Chemical Data Reporting rule under TSCA, which changes reporting requirements. The EPA has also released its framework for approving new chemicals and new uses of existing chemicals. Under the framework, a new chemical or use presents an unreasonable risk if it exceeds set standards. Such a finding could result in either the issuance of rules restricting the use of the chemical being evaluated or in the need for additional testing. The costs of compliance with any new laws or regulations cannot be estimated until the manner in which they will be implemented has been more precisely defined.

Furthermore, governmental, regulatory and societal demands for increasing levels of product safety and environmental protection could result in increased pressure for more stringent regulatory control with respect to the chemical industry. In addition, these concerns could influence public perceptions regarding our products and operations, the viability of certain products, our reputation, the cost to comply with regulations, and the ability to attract and retain employees. Moreover, changes in EHS regulations could inhibit or interrupt our operations, or require us to modify our facilities or operations. Accordingly, environmental or regulatory matters may cause us to incur significant unanticipated losses, costs or liabilities, which could reduce our profitability. For example, several of our products are being evaluated under REACH and CLP regulations and actions thereunder could negatively impact sales.

We could incur significant expenditures in order to comply with existing or future EHS laws. Capital expenditures and costs relating to EHS matters will be subject to evolving regulatory requirements and will depend on the timing of the promulgation and enforcement of specific standards which impose requirements on our operations. Capital expenditures and costs beyond those currently anticipated may therefore be required under existing or future EHS laws.

Furthermore, we may be liable for the costs of investigating and cleaning up environmental contamination on or from our properties or at off-site locations where we disposed of or arranged for the disposal or treatment of hazardous materials, or from disposal activities that pre-dated our purchase of our businesses. We may therefore incur additional costs and expenditures beyond those currently anticipated to address all such known and unknown situations under existing and future EHS laws.

Regulatory requirements to reduce GHG or other emissions could have an adverse effect on our results of operations.

Our operations are increasingly subject to regulations that seek to reduce emissions of GHGs, such as carbon dioxide, methane and ethylene oxide, among others, which may be contributing to changes in the Earth's climate or potentially impacting health and welfare. There are existing efforts to address such emissions at the international, national, and regional levels. For example, the Paris Agreement, which entered into force in November 2016, resulted in voluntary commitments by numerous countries to reduce their GHG emissions. The U.S. rejoined the Paris Agreement on February 19, 2021. In addition, in September 2021, U.S. President Biden publicly announced the Global Methane Pledge, a pact that aims to reduce global methane emissions at least 30% below 2020 levels by 2030. Since its formal launch at the United Nations Climate Change Conference (COP26), over 100 countries have joined the pledge. The EU also regulates GHGs under the EU ETS and China has established its own country-wide GHG cap and trade program. In the U.S., the Biden Administration has announced plans to enact new rules to address power plant GHG emissions, but a proposed rule has not yet been released. Therefore, the final scope of any U.S. regulation of GHG emissions is uncertain at this time. Such rules and agreements may affect the long-term price and supply of electricity and natural gas and demand for products that contribute to energy efficiency and renewable energy. These various regulations and agreements may result in increased costs to purchased energy, additional capital costs for installation or modification of associated equipment, and additional costs associated directly with such emissions (such as cap and trade systems or carbon taxes), which are primarily related to energy use. Likewise, there are efforts aimed at curbing other risks associated with emissions or exposures to other substances, which could have similar impacts. Compliance with these regulations and any more stringent restrictions in the future may increase our operational costs.

In addition, most scientists have concluded that increasing concentrations of GHGs in the Earth's atmosphere may produce climate changes, such as increased frequency and severity of storms, droughts, floods and other climatic events. If any such effects were to occur in areas where we or our clients operate, they could have an adverse effect on our assets and operations.

We could incur significant expenditures in order to comply with existing or future EHS laws. Capital expenditures and costs relating to EHS matters will be subject to evolving regulatory requirements and will depend on the timing of the promulgation and enforcement of specific standards which impose requirements on our operations. Capital expenditures and costs beyond those currently anticipated may therefore be required under existing or future EHS laws.

Furthermore, we may be liable for the costs of investigating and cleaning up environmental contamination on or from our properties or at off-site locations where we disposed of or arranged for the disposal or treatment of hazardous materials or from disposal activities that pre-dated our purchase of our businesses. We may therefore incur additional costs and expenditures beyond those currently anticipated to address all such known and unknown situations under existing and future EHS laws.

RISKS RELATED TO INDEBTEDNESS

Changes in our credit ratings could increase our borrowing costs or negatively impact our ability to access debt capital markets.

We rely on access to the debt capital markets and other short-term borrowings to finance our operations. The major rating agencies routinely evaluate our credit profile and assign debt ratings. This evaluation is based on a number of factors, which include weighing our financial strength versus business, industry and financial risk. A decrease in the ratings assigned to us by ratings agencies may negatively impact our access to the debt capital markets and increase our borrowing costs. The addition of more debt to our capital structure could also impact our credit ratings. Failure to maintain an investment grade rating would adversely affect our borrowing costs and could adversely affect our access to the debt capital markets. Any limitation on our ability to continue to raise money in the debt capital markets could have a substantial negative effect on our liquidity. Further, if we are unable to generate sufficient cash flow or maintain access to adequate external financing, including from significant disruptions in the global credit markets, our operations and opportunities for growth would be negatively impacted, which could adversely impact our results of operations.

GENERAL RISK FACTORS

Certain provisions contained in our certificate of incorporation and bylaws could discourage a takeover attempt, which may reduce or eliminate the likelihood of a change of control transaction and, therefore, limit your ability to sell our common stock at a price higher than the current market value.

Certain provisions contained in our certificate of incorporation and bylaws, as well as certain provisions of Delaware law, could make it more difficult for a third party to acquire control of our Company, even if some of our stockholders were to consider such a change of control to be beneficial. Our certificate of incorporation also authorizes our Board of Directors to issue preferred stock without stockholder approval. Therefore, our Board of Directors could elect to issue preferred stock that has special voting or other rights that could make it even more difficult for a third party to acquire us, which may reduce or eliminate your ability to sell our common stock at a price higher than the current market value.

We have purchased, and may continue to purchase, a portion of our equity and debt securities, which could impact the market for our equity and debt securities and likely would negatively affect our liquidity.

Consistent with past practices, we may from time to time seek to repurchase or redeem our equity and debt securities in open market purchases, accelerated repurchase programs, privately negotiated transactions, tender offers, partial or full calls for redemption or otherwise. Any such repurchases or redemptions and the timing and amount thereof would depend on prevailing market conditions, liquidity requirements, contractual restrictions and other factors. Such transactions could negatively affect our liquidity.

ITEM 1B. UNRESOLVED STAFF COMMENTS

As of the date of this filing, we did not have any unresolved comments from the staff of the SEC.

ITEM 2. PROPERTIES

We own or lease chemical manufacturing and research facilities in the locations indicated in the list below, which we believe are adequate for our short-term and anticipated long-term needs. We own or lease office space and storage facilities throughout the U.S. and in many foreign countries. Our principal executive offices are located at 10003 Woodloch Forest Drive, The Woodlands, Texas 77380. The following is a list of our principal physical properties where manufacturing, research and main office facilities are located.

Location	Business segment	Description of facility
The Woodlands, Texas(1)	Various	Executive Offices, Operating Headquarters, Global Technology Center and Shared Services Center
Kraków, Poland(1)	Various	Global Business Center
Kuala Lumpur, Malaysia(1)	Various	Global Business Center
San Jose, Costa Rica(1)	Various	Global Business Center
Mumbai, India(1)	Various	Technology Center, Administrative Offices, Labs and Shared Services Center
Wynyard, U.K.(1)	Various	Administrative Offices
Caojing, China	Polyurethanes	MDI Finishing Facilities
Caojing, China(2)	Polyurethanes	Precursor MDI Manufacturing Facility
Auburn Hills, Michigan(1)	Polyurethanes	Polyurethane Research Facility
Arlington, Texas	Polyurethanes	Polyurethane Systems House
Azeglio, Italy	Polyurethanes	Polyurethane Systems House
Boisbriand, Canada	Polyurethanes	Polyurethane Systems House
Cartagena, Colombia	Polyurethanes	Polyurethane Systems House
Castelfranco Emilia, Italy	Polyurethanes	Polyurethane Systems House
Dammam, Saudi Arabia(3)	Polyurethanes	Polyurethane Systems House
Deer Park, Australia(1)	Polyurethanes	Polyurethane Systems House
Dubai, United Arab Emirates	Polyurethanes	Polyurethane Systems House
Gandaria, Jakarta, Indonesia	Polyurethanes	Polyurethane Systems House
Georgsmarienhütte, Germany	Polyurethanes	Polyurethane Systems House
Istanbul, Turkey	Polyurethanes	Polyurethane Systems House
King's Lynn, U.K.(1)	Polyurethanes	Polyurethane Systems House
Kuan Yin, Taiwan	Polyurethanes	Polyurethane Systems House
Obninsk, Russia	Polyurethanes	Polyurethane Systems House
Pune, India(1)	Polyurethanes	Polyurethane Systems House
Samutprakarn, Thailand(1)	Polyurethanes	Polyurethane Systems House
Tianjin, China(1)	Polyurethanes	Polyurethane Systems House
Tlalnepantla, Mexico	Polyurethanes	Polyurethane Systems House
Deggendorf, Germany	Polyurethanes	Polyurethane Systems House and Technology Center
Jinshan, China(1)	Polyurethanes	TPU Manufacturing Facility
Osnabrück, Germany	Polyurethanes	TPU Manufacturing Facility
Ringwood, Illinois(1)	Polyurethanes	TPU Manufacturing Facility
Derry, New Hampshire(1)	Polyurethanes	TPU Research Facility
Nanjing, China(4)	Polyurethanes	PO and MTBE Manufacturing Facilities
Houston, Texas(1)	Polyurethanes	Polyols Manufacturing Facility
Ho Chi Minh City, Vietnam(1)	Polyurethanes and Advanced Materials	Polyurethane Systems House and Formulating Facility
Wilton, U.K.	Polyurethanes	Aniline and Nitrobenzene Manufacturing Facilities
Rotterdam, The Netherlands(1)	Polyurethanes	MDI Manufacturing Facility, Polyols Manufacturing Facilities, Polyurethane Systems House and Shared Services Center
Geismar, Louisiana(5)	Polyurethanes and Performance Products	MDI, Nitrobenzene(5), Aniline(5), Polyols and Maleic Anhydride Manufacturing Facilities, Polyurethane Systems House
Everberg, Belgium	Polyurethanes and Performance Products	Polyurethane and Performance Products Regional Headquarters, Global Technology Center and Shared Service Center
Shanghai, China(1)	Polyurethanes, Performance Products and Advanced Materials	Polyurethanes, Performance Products and Advanced Materials Regional Headquarters, Global Technology Center, Shared Services Center and Polyurethane Systems House
Conroe, Texas	Performance Products	Amines Manufacturing Facility
Freeport, Texas(1)	Performance Products	Amines Manufacturing Facility
Jubail, Saudi Arabia(6)	Performance Products	Amines Manufacturing Facility
Jurong Island, Singapore(1)	Performance Products	Amines Manufacturing Facility
Llanelli, U.K.	Performance Products	Amines Manufacturing Facility
Petfurdo, Hungary	Performance Products	Amines Manufacturing Facility
Port Neches, Texas	Performance Products	Amines Manufacturing Facility

Moers, Germany(1)	Performance Products	Maleic Anhydride Manufacturing Facility
Pensacola, Florida(1)	Performance Products	Maleic Anhydride Manufacturing Facility
Ashtabula, Ohio	Advanced Materials	Formulating and Synthesis Facility
Duxford, U.K.	Advanced Materials	Formulating and Synthesis Facility
McIntosh, Alabama	Advanced Materials	Formulating and Synthesis Facility
Monthey, Switzerland	Advanced Materials	Formulating and Synthesis Facility
Panyu, China(7)	Advanced Materials	Formulating and Synthesis Facility
Rock Hill, South Carolina	Advanced Materials	Formulating and Synthesis Facility
Bad Saeckingen, Germany	Advanced Materials	Formulating Facility
East Lansing, Michigan	Advanced Materials	Formulating Facility
Harrison City, Pennsylvania	Advanced Materials	Formulating Facility
Los Angeles, California	Advanced Materials	Formulating Facility
Taboão da Serra, Brazil	Advanced Materials	Formulating Facility
Akron, Ohio	Advanced Materials	Synthesis Facility
Bergkamen, Germany	Advanced Materials	Synthesis Facility
Pamplona, Spain	Advanced Materials	Synthesis Facility
Merrimack, New Hampshire(1)	Advanced Materials	Research Facility
Basel, Switzerland(1)	Advanced Materials	Advanced Materials Regional Headquarters and Technology Center

(1) Leased land and/or building.
(2) 35% interest in SLIC, our unconsolidated manufacturing joint venture with BASF and three Chinese chemical companies.
(3) 51%-owned consolidated manufacturing joint venture with Basic Chemicals Industries Ltd.
(4) 49% interest in Nanjing Jinling Huntsman New Material Co., Ltd., our unconsolidated manufacturing joint venture with Sinopec.
(5) The ownership of the Geismar facility is as follows: we own 100% of the MDI, polyol and maleic anhydride facilities, and Rubicon, a consolidated manufacturing joint venture with Lanxess in which we own a 50% interest, owns the aniline and nitrobenzene facilities. Rubicon is a separate legal entity that operates both the assets that we own jointly with Lanxess and our wholly owned assets at Geismar.
(6) 50% interest in AAC, our consolidated manufacturing joint venture with the Zamil Group.
(7) 95%-owned consolidated manufacturing joint venture with Guangzhou Sheng’an Package Company Limited.

ITEM 3. LEGAL PROCEEDINGS

Texas Emissions Enforcement

On July 26, 2021, the Attorney General of the State of Texas filed a civil suit in the District Court of Travis County, Texas seeking civil penalties and attorney’s fees for alleged violations of the Texas Clean Air Act, Texas Commission on Environmental Quality regulations and facility permit terms. The complaint alleged multiple unauthorized emissions events and reporting discrepancies that occurred between December 2016 and June 2019 at our former manufacturing facility in Port Neches, Texas. While the state initially sought monetary relief between $250,000 and $1 million, additional allegations were added, which may result in a higher penalty. We completed the sale of our former Port Neches, Texas facility to Indorama Ventures Holdings L.P. on January 3, 2020. We believe that we are contractually indemnified for any defense costs and potential liability that may result from this action.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

INFORMATION ABOUT OUR EXECUTIVE OFFICERS

The following is information concerning our executive officers and significant employees as of the date of this report.

Peter R. Huntsman, age 59, is Chairman of the Board, President and Chief Executive Officer of our Company. Peter R. Huntsman has served as Chairman of the Board since January 2018 and as a director of our company and affiliated companies since 1994. Prior to his appointment in July 2000 as Chief Executive Officer, Mr. Huntsman had served as President and Chief Operating Officer since 1994. In 1987, Mr. Huntsman joined Huntsman Polypropylene Corporation as Vice President before serving as Senior Vice President and General Manager. Mr. Huntsman has also served as President of Olympus Oil, as Senior Vice President of Huntsman Chemical Corporation and as a Senior Vice President of Huntsman Packaging Corporation, a former subsidiary of our Company. Mr. Huntsman is a director or manager, as applicable, of Huntsman International and certain of our other subsidiaries. Mr. Huntsman currently serves as a director of Venator Materials PLC, which separated from our Company in 2017.

Phil Lister, age 50, is Executive Vice President and Chief Financial Officer. Mr. Lister was appointed to this position in July 2021. From May 2019 to June 2021, Mr. Lister served as Vice President, Corporate Development. From April 2011 to April 2019, Mr. Lister served in Huntsman's Polyurethanes division as Vice President, Global Finance and Controller, a role including divisional leadership of strategic planning as well as mergers and acquisitions. Prior to that, Mr. Lister served in numerous financial and business roles in Polyurethanes both in Europe and in the United States. Mr. Lister joined Huntsman in July 1999 with the ICI acquisition. Mr. Lister is a U.K. Chartered Management Accountant.

David Stryker, age 64, is Executive Vice President, General Counsel and Secretary. Mr. Stryker was appointed to this position in June 2013. Prior to joining Huntsman, Mr. Stryker served as Senior Vice President, General Counsel, Secretary and Chief Compliance Officer of the BASF Corporation since 2004. Previously, he was Associate General Counsel and Chief Compliance Officer at Siemens Corporation and, prior to that, a partner at the law firm of Kirkland & Ellis. Mr. Stryker started his legal career as a judicial clerk to the Honorable Robert H. Bork on the U.S. Court of Appeals for the D.C. Circuit.

Anthony P. Hankins, age 65, is Division President, Polyurethanes and Chief Executive Officer, Asia-Pacific. Mr. Hankins was appointed to these positions in March 2004 and February 2011, respectively. From May 2003 to February 2004, Mr. Hankins served as President, Performance Products, from January 2002 to April 2003, he served as Global Vice President, Rigids Division for our Polyurethanes segment, from October 2000 to December 2001, he served as Vice President—Americas for our Polyurethanes segment, and from March 1998 to September 2000, he served as Vice President—Asia-Pacific for our Polyurethanes segment. Mr. Hankins worked for ICI from 1980 to February 1998, when he joined our Company. At ICI, Mr. Hankins held numerous management positions in the plastics, fibers and polyurethanes businesses. He has extensive international experience, having held senior management positions in Europe, Asia and the U.S.

Chuck Hirsch, age 55, is Division President, Performance Products. Prior to his appointment to this position in July 2020, Mr. Hirsch served as Vice President–Commercial, Textile Effects based in Singapore since April 2014. Mr. Hirsch joined Huntsman in July 2009 and has served in multiple roles of increasing responsibility in the Textile Effects division. Prior to joining Huntsman, Mr. Hirsch held numerous positions with International Textile Group, Ciba Specialty Chemicals and Milliken & Company.

Scott J. Wright, age 51, is Division President, Advanced Materials. Mr. Wright was appointed to this position in June 2016. Prior to that time, Mr. Wright served as Vice President of Huntsman Advanced Materials—Europe, Middle East & Africa since 2011. Before joining Huntsman's Advanced Materials segment, Mr. Wright spent 15 years in Huntsman's former pigments and additives business in a number of roles of increasing responsibility including product development, business planning, marketing and sales. Prior to joining Huntsman in July 1999, Mr. Wright worked with ICI.

Rohit Aggarwal, age 55 is Division President, Textile Effects. Prior to his appointment to this position in July 2016, Mr. Aggarwal served as Vice President and Managing Director of Indian Subcontinent since July 2015. Mr. Aggarwal joined Huntsman in 2005 and has held various positions within the Advanced Materials and Textile Effects divisions. Mr. Aggarwal left the Company in 2013 to join Louis Dreyfus Commodities B.V. as Chief Executive Officer of Asia Region, a position he held until his return in 2015.

Brittany Benko, age 48, is Senior Vice President, Environmental, Health & Safety and Manufacturing Excellence. Prior to joining Huntsman in August 2020, Ms. Benko served as Vice President, Health, Safety, Environment and Regulatory at Southwestern Energy Company. Previously, Ms. Benko served in a variety of EHS roles with increasing responsibility at several companies including Anadarko Petroleum Corporation, Chesapeake Energy Corporation and BP.

R. Wade Rogers, age 57, is Senior Vice President, Global Human Resources and Chief Compliance Officer. Mr. Rogers has held the position of Senior Vice President, Global Human Resources since August 2009. From May 2004 to August 2009, Mr. Rogers served as Vice President, Global Human Resources, from October 2003 to May 2004, Mr. Rogers served as Director, Human Resources—Americas and from August 2000 to October 2003, he served as Director, Human Resources for our Polymers and Base Chemicals businesses. From the time he joined Huntsman in 1994 to August 2000, Mr. Rogers served as Area Manager, Human Resources—Jefferson County Operations. Prior to joining Huntsman, Mr. Rogers held a variety of positions with Texaco Chemical Company.

Steven C. Jorgensen, age 54, is Vice President and Controller. Prior to his appointment to this position in August 2021, Mr. Jorgensen served as Vice President Finance and Controller in Huntsman's Performance Products division since January 2017, as Vice President of Accounting Shared Services and Internal Controls since February 2012, as Vice President of Internal Audit and Internal Controls since May 2007 and other positions since joining Huntsman in May 2004. Prior to joining Huntsman, Mr. Jorgensen served as an Internal Audit Manager at General Electric Consumer Finance and a Senior Audit Manager at Deloitte & Touche LLP. Mr. Jorgensen is a Certified Public Accountant.

Twila Day, age 61, is Vice President and Chief Information Officer. Ms. Day was appointed to this position upon joining Huntsman in November 2018. Prior to joining Huntsman, Ms. Day was Managing Director, National Practice Lead for Technology Services, and a member of the executive committee at Alvarez & Marsal. Previously, Ms. Day served at SYSCO Corporation for more than 20 years in a variety of positions, culminating in her appointment as Senior Vice President Information Technology and Chief Information Officer.

Kevin C. Hardman, age 59, is Vice President, Tax. Mr. Hardman served as Chief Tax Officer from 1999 until he was appointed to his current position in 2002. Prior to joining Huntsman in 1999, Mr. Hardman was a tax Senior Manager with the accounting firm of Deloitte & Touche LLP, where he worked for 10 years. Mr. Hardman is a Certified Public Accountant and holds a master's degree in tax accounting.

Ivan Marcuse, age 46, is Vice President, Investor Relations. Prior to joining Huntsman in April 2017, Mr. Marcuse served as Director, Equity Research, Specialty Chemicals for KeyBanc Capital Markets Inc. from August 2011 to February 2017. Previously, he was Vice President, Equity Research, Building Products and Materials, for Northcoast Research. Mr. Marcuse is a CFA charterholder and holds a master's degree in business administration.

Claire Mei, age 48, is Vice President and Treasurer. Ms. Mei was appointed to this role upon joining Huntsman in August of 2018. Prior to joining Huntsman, Ms. Mei served as Vice President and Treasurer at Chobani Global Holdings since November 2016. Previously, Ms. Mei served in a variety of treasury and financial roles with increasing responsibility at several companies including Kraft Foods, PepsiCo, and Hyatt Corporation. Ms. Mei was also a management consultant with McKinsey & Company in Shanghai, China. Ms. Mei holds a master's degree in business administration.

Pierre Poukens, age 60, is Vice President, Internal Audit, a position he has held since February 2012. Mr. Poukens was Director of Internal Audit from April 2005 to January 2012 and joined Huntsman as Internal Audit Manager in January 2000. Prior to joining Huntsman, Mr. Poukens held various accounting and auditing positions with European companies in Belgium. Mr. Poukens is a Certified Internal Auditor.

Nooshin Vaughn, age 49, is Vice President, Financial Planning and Analysis. Ms. Vaughn was appointed to this position effective June 2018. Ms. Vaughn previously served as Director, Investor Relations. Prior to that, Ms. Vaughn held numerous roles in finance, accounting and information technology. Prior to joining Huntsman in 1997, Ms. Vaughn worked for the accounting firm of Deloitte & Touche LLP. Ms. Vaughn is a Certified Public Accountant.

PART II

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

Market Information and Holders

Our common stock is listed on the New York Stock Exchange under the symbol "HUN." As of February 7, 2023, there were approximately 93 stockholders of record and the closing price of our common stock on the New York Stock Exchange was $32.75 per share.

Dividends

The payment of dividends is a business decision made by our Board of Directors from time to time based on our earnings, financial position and prospects, and such other considerations as our Board of Directors considers relevant. Accordingly, while management currently expects that we will continue to pay the quarterly cash dividend, our dividend practice may change at any time.

Securities Authorized for Issuance Under Equity Compensation Plans

See "Part III. Item 11. Executive Compensation" for information relating to our equity compensation plans.

Purchases of Equity Securities by the Company

The following table provides information with respect to shares of our common stock that we repurchased as part of our share repurchase program and shares of restricted stock granted under our stock incentive plans that we withheld upon vesting to satisfy our tax withholding obligations during the three months ended December 31, 2022.

	Total number of shares purchased	Average price paid per share(1)	Total number of shares purchased as part of publicly announced plans or programs(2)	Approximate dollar value of shares that may yet be purchased under the plans or programs(2)
October 1 - October 31	1,888,511	$ 26.48	1,888,511	$ 1,097,000,000
November 1 - November 30	3,839,893	27.57	3,839,893	991,000,000
December 1 - December 31	3,400,174	27.68	3,400,174	897,000,000
Total	9,128,578	27.39	9,128,578	

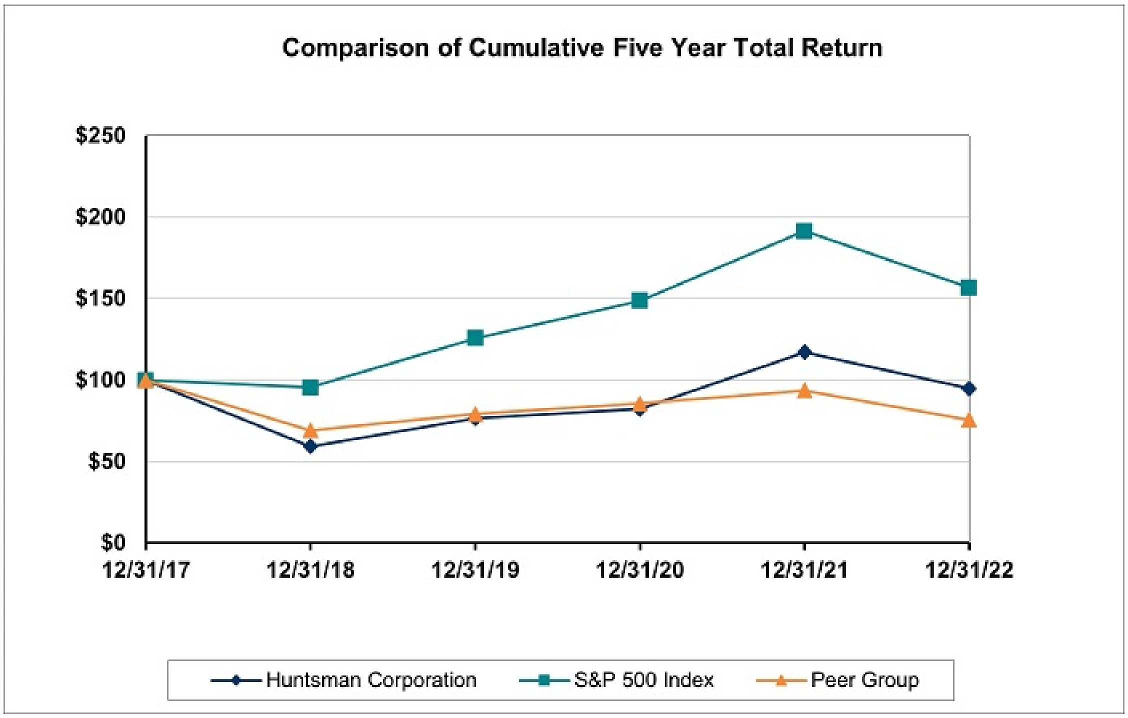
(1) Represents net purchase price per share, exclusive of any fees or commissions.

(2) On October 26, 2021, our Board of Directors announced a new share repurchase program of $1 billion. In conjunction with the inception of this program, we retired our prior share repurchase program. On March 25, 2022, our Board of Directors increased the authorization of our existing share prepurchase program from $1 billion of repurchases to $2 billion. Similar to our prior share repurchase program, the share repurchase program will be supported by our free cash flow generation. Repurchases may be made in the open market, including through accelerated share repurchase programs, or in privately negotiated transactions, and repurchases may be commenced or suspended from time to time without prior notice. Shares of common stock acquired through the repurchase program are held in treasury at cost. During the fourth quarter of 2022, we repurchased 9,128,578 shares of our common stock for approximately $250 million, excluding commissions.

Performance Graph

The following performance graph compares the cumulative total return (including dividends) to the holders of our common stock from December 31, 2017 through December 31, 2022, with the cumulative total returns of (i) the S&P 500 Index and (ii) our 2022 performance peers, which consists of 12 chemical companies whose valuations are influenced by similar financial measures and against whom we compete for market share and investor capital (the "2022 Performance Peers"). The comparison assumes $100 was invested on December 31, 2017 in our common stock as well as in the S&P 500 Index and the 2022 Performance Peers and assumes reinvestment of dividends, as applicable. The figures in the graph below are rounded to the nearest dollar. All data in the graph have been provided by S&P Global. In accordance with SEC requirements, the return for each issuer has been weighted according to the respective issuer's stock market capitalization at the beginning of each period for which a return is indicated.

The 2022 Performance Peers consist of the following companies: Ashland Global Holdings Inc., BASF Corp, Celanese Corporation, Clariant AG, Covestro AG, Dow Inc., Eastman Chemical Company, Evonik, H.B. Fuller Company, Lanxess AG, Trinseo S.A. and Westlake Chemical Corp. The 2022 Performance Peers are used to evaluate our total stockholder return relative to them and pay performance share units based on our performance. More information about how the 2022 Performance Peers are used to pay performance share units will be disclosed in the definitive Proxy Statement for our 2023 Annual Meeting of Stockholders.



ITEM 6. SELECTED FINANCIAL DATA

[RESERVED]

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

Results of Operations

As discussed in "Note 4. Discontinued Operations and Business Dispositions—Discontinued Operations—Sale of Textile Effects Business" to our consolidated financial statements, the results from continuing operations primarily exclude the results of our Textile Effects Business for all periods presented. For each of our Company and Huntsman International, the following tables set forth our consolidated results of operations for the years ended December 31, 2022, 2021 and 2020 (dollars in millions, except per share amounts).

Huntsman Corporation

	December 31,			Percent change	
	2022	2021	2020	2022 vs 2021	2021 vs 2020
Revenues	$ 8,023	$ 7,670	$ 5,421	5%	41%
Cost of goods sold	6,477	6,086	4,444	6%	37%
Gross profit	1,546	1,584	977	(2)%	62%
Operating expenses	788	813	504	(3)%	61%
Restructuring, impairment and plant closing costs	86	40	41	115%	(2)%
Operating income	672	731	432	(8)%	69%
Interest expense, net	(62)	(67)	(86)	(7)%	(22)%
Equity in income of investment in unconsolidated affiliates	67	143	42	(53)%	240%
Fair value adjustments to Venator investment, net and related loss on disposal	(12)	(28)	(88)	(57)%	(68)%
Loss on early extinguishment of debt	—	(27)	—	(100)%	NM
(Costs) income associated with the Albemarle Settlement, net	(3)	465	—	NM	NM
Other income, net	35	29	31	21%	(6)%
Income from continuing operations before income taxes	697	1,246	331	(44)%	276%
Income tax expense	(186)	(191)	(42)	(3)%	355%
Income from continuing operations	511	1,055	289	(52)%	265%
Income from discontinued operations, net of tax	12	49	777	(76)%	(94)%
Net income	523	1,104	1,066	(53)%	4%
Reconciliation of net income to adjusted EBITDA:					
Net income attributable to noncontrolling interests	(63)	(59)	(32)	7%	84%
Interest expense, net from continuing operations	62	67	86	(7)%	(22)%
Income tax expense from continuing operations	186	191	42	(3)%	355%
Income tax expense from discontinued operations	19	21	246	(10)%	(91)%
Depreciation and amortization of continuing operations	281	278	267	1%	4%
Depreciation and amortization of discontinued operations	12	18	16	(33)%	13%
Other adjustments:					
Business acquisition and integration expenses and purchase accounting inventory adjustments	12	22	31		
EBITDA from discontinued operations(2)	(43)	(88)	(1,039)		
Fair value adjustments to Venator investment, net and related loss on disposal	12	28	88		
Loss on early extinguishment of debt	—	27	—		
Certain legal and other settlements and related expenses	7	13	5		
Costs (income) associated with the Albemarle Settlement, net	3	(465)	—		
Gain on sale of businesses/assets	—	(30)	(280)		
Income from transition services arrangements	(2)	(8)	(7)		
Certain nonrecurring information technology project implementation costs	5	8	6		
Amortization of pension and postretirement actuarial losses	49	74	64		
Plant incident remediation (credits) costs	(4)	—	2		
Restructuring, impairment and plant closing and transition costs(3)	96	45	44		
Adjusted EBITDA(1)	$ 1,155	$ 1,246	$ 605	(7)%	106%
Net cash provided by operating activities from continuing operations	$ 892	$ 915	$ 231	(3)%	296%
Net cash (used in) provided by investing activities from continuing operations	(260)	(508)	1,474	(49)%	NM
Net cash used in financing activities	(994)	(977)	(655)	2%	49%
Capital expenditures from continuing operations	(272)	(326)	(237)	(17)%	38%

Huntsman International

	December 31,			Percent change	
	2022	2021	2020	2022 vs 2021	2021 vs 2020
Revenues	$ 8,023	$ 7,670	$ 5,421	5%	41%
Cost of goods sold	6,477	6,086	4,444	6%	37%
Gross profit	1,546	1,584	977	(2)%	62%
Operating expenses	784	806	498	(3)%	62%
Restructuring, impairment and plant closing costs	86	40	41	115%	(2)%
Operating income	676	738	438	(8)%	68%
Interest expense, net	(62)	(67)	(88)	(7)%	(24)%
Equity in income of investment in unconsolidated affiliates	67	143	42	(53)%	240%
Fair value adjustments to Venator investment, net and related loss on disposal	(12)	(28)	(88)	(57)%	(68)%
Loss on early extinguishment of debt	—	(27)	—	(100)%	NM
(Costs) income associated with the Albemarle Settlement, net	(3)	465	—	NM	NM
Other income, net	34	26	28	31%	(7)%
Income from continuing operations before income taxes	700	1,250	332	(44)%	277%
Income tax expense	(188)	(192)	(42)	(2)%	357%
Income from continuing operations	512	1,058	290	(52)%	265%
Income from discontinued operations, net of tax	12	49	777	(76)%	(94)%
Net income	524	1,107	1,067	(53)%	4%
Reconciliation of net income to adjusted EBITDA:					
Net income attributable to noncontrolling interests	(63)	(59)	(32)	7%	84%
Interest expense, net from continuing operations	62	67	88	(7)%	(24)%
Income tax expense (benefit) from continuing operations	188	192	42	(2)%	357%
Income tax expense from discontinued operations	19	21	246	(10)%	(91)%
Depreciation and amortization of continuing operations	281	278	267	1%	4%
Depreciation and amortization of discontinued operations	12	18	16	(33)%	13%
Other adjustments:					
Business acquisition and integration expenses and purchase accounting inventory adjustments	12	22	31		
EBITDA from discontinued operations[2]	(43)	(88)	(1,039)		
Fair value adjustments to Venator investment, net and related loss on disposal	12	28	88		
Loss on early extinguishment of debt	—	27	—		
Certain legal and other settlements and related expenses	7	13	5		
Costs (income) associated with the Albemarle Settlement, net	3	(465)	—		
Gain on sale of businesses/assets	—	(30)	(280)		
Income from transition services arrangements	(2)	(8)	(7)		
Certain nonrecurring information technology project implementation costs	5	8	6		
Amortization of pension and postretirement actuarial losses	49	76	67		
Plant incident remediation (credits) costs	(4)	—	2		
Restructuring, impairment and plant closing and transition costs[3]	96	45	44		
Adjusted EBITDA[1]	$ 1,158	$ 1,252	$ 611	(8)%	105%
Net cash provided by operating activities from continuing operations	$ 895	$ 918	$ 233	(3)%	294%
Net cash (used in) provided by investing activities from continuing operations	(1,277)	(710)	1,748	80%	NM
Net cash provided by (used in) financing activities	22	(778)	(933)	NM	(17)%
Capital expenditures from continuing operations	(272)	(326)	(237)	(17)%	38%

Huntsman Corporation

	Year ended December 31, 2022			Year ended December 31, 2021			Year ended December 31, 2020		
	Gross	Tax and other(4)	Net	Gross	Tax and other(4)	Net	Gross	Tax and other(4)	Net
Reconciliation of net income to adjusted net income									
Net income			$ 523			$ 1,104			$ 1,066
Net income attributable to noncontrolling interests			(63)			(59)			(32)
Business acquisition and integration expenses and purchase accounting inventory adjustments	$ 12	$ (2)	10	$ 22	$ (6)	16	$ 31	$ (6)	25
Income from discontinued operations(2)(5)	(43)	31	(12)	(88)	39	(49)	(1,039)	262	(777)
Fair value adjustments to Venator investment, net and related loss on disposal	12	—	12	28	—	28	88	(9)	79
Loss on early extinguishment of debt	—	—	—	27	(6)	21	—	—	—
Certain legal and other settlements and related expenses	7	(2)	5	13	(3)	10	5	(1)	4
Costs (income) associated with the Albemarle Settlement, net	3	(1)	2	(465)	55	(410)	—	—	—
Gain on sale of businesses/assets	—	—	—	(30)	3	(27)	(280)	31	(249)
Income from transition services arrangements	(2)	—	(2)	(8)	2	(6)	(7)	2	(5)
Certain nonrecurring information technology project implementation costs	5	(1)	4	8	(2)	6	6	(1)	5
Amortization of pension and postretirement actuarial losses	49	(11)	38	74	(16)	58	64	(14)	50
Plant incident remediation (credits) costs	(4)	1	(3)	—	—	—	2	—	2
Establishment of significant deferred tax asset valuation allowance(6)	—	49	49	—	—	—	—	—	—
Restructuring, impairment and plant closing and transition costs(3)	96	(23)	73	45	(11)	34	44	(11)	33
Adjusted net income(1)			$ 636			$ 726			$ 201
Weighted average shares-basic			201.0			219.2			220.6
Weighted average shares-diluted			203.0			221.4			221.9
Basic net income attributable to Huntsman Corporation per share:									
Income from continuing operations			$ 2.23			$ 4.55			$ 1.17
Income from discontinued operations			0.06			0.22			3.52
Net income			$ 2.29			$ 4.77			$ 4.69
Diluted net income attributable to Huntsman Corporation per share:									
Income from continuing operations			$ 2.21			$ 4.50			$ 1.16
Income from discontinued operations			0.06			0.22			3.50
Net income			$ 2.27			$ 4.72			$ 4.66
Other non-GAAP measures:									
Diluted adjusted net income per share(1)			$ 3.13			$ 3.28			$ 0.91
Net cash provided by operating activities from continuing operations			$ 892			$ 915			$ 231
Capital expenditures from continuing operations			(272)			(326)			(237)
Free cash flow from continuing operations(1)			$ 620			$ 589			$ (6)
Effective tax rate			27%			15%			13%
Impact of non-GAAP adjustments(7)			(7)%			3%			5%
Adjusted effective tax rate(1)			20%			18%			18%
Other cash flow measure:									
Net cash proceeds from the Albemarle Settlement(8)			$ 78			$ 333			$ —
Taxes paid on sale of businesses(9)			—			(3)			(257)

NM—Not meaningful

(1) See "—Non-GAAP Financial Measures."
(2) Includes the gain on the sale of our Chemical Intermediates Businesses in 2020.
(3) Includes costs associated with transition activities relating primarily to our Corporate program to optimize our global approach to leverage shared services capabilities as well as our 2020 acquisition of CVC Thermoset Specialties, a North American specialty chemical manufacturer serving the industrial composites, adhesives and coatings markets ("CVC Thermoset Specialties Acquisition").
(4) The income tax impacts, if any, are computed on the pre-tax adjustments using a with and without approach.
(5) In addition to income tax impacts, this adjusting item is also impacted by depreciation and amortization expense and interest expense.
(6) During the year ended December 31, 2022, we established a $49 million significant deferred tax asset valuation allowance in The Netherlands. We eliminated the effect of this significant change in deferred tax asset valuation allowances from our presentation of adjusted net income to allow investors to better compare our ongoing financial performance from period to period.
(7) For details regarding the tax impacts of our non-GAAP adjustments, please see the reconciliation of our net income to adjusted net income noted above.
(8) Represents net cash proceeds received in connection with the arbitration award we won on October 28, 2021 in excess of $600 million against Albemarle Corporation ("Albemarle") for fraud and breach of contract (the "Albemarle Settlement"). On November 4, 2021, Albemarle agreed to waive any appeal and pay $665 million to us.
(9) Represents the taxes paid in connection with the sale of the Chemical Intermediates Businesses and the sale of the India-based DIY business. For more information, see "Note 4. Discontinued Operations and Business Dispositions" to our consolidated financial statements.

Non-GAAP Financial Measures

Our consolidated financial statements are prepared in accordance with U.S. GAAP, which we supplement with certain non-GAAP financial information. These non-GAAP measures should not be considered in isolation or as a substitute for the related U.S. GAAP measures, and other companies may define such measures differently. We encourage investors to review our financial statements and the reconciliation of the non-GAAP financial measures to the most directly comparable U.S. GAAP financial measures in their entirety and not to rely on any single financial measure. These non-GAAP measures exclude the impact of certain income and expenses that we do not believe are indicative of our core operating results.

Adjusted EBITDA

Our management uses adjusted EBITDA to assess financial performance. Adjusted EBITDA is defined as net income of Huntsman Corporation or Huntsman International, as appropriate, before interest, income tax, depreciation and amortization, net income attributable to noncontrolling interests and certain Corporate and other items, as well as eliminating the following adjustments: (a) business acquisition and integration expenses and purchase accounting inventory adjustments; (b) EBITDA from discontinued operations; (c) fair value adjustments to Venator investment, net and related loss on disposal; (d) loss on early extinguishment of debt; (e) certain legal and other settlements and related expenses; (f) costs (income) associated with the Albemarle Settlement, net; (g) gain on sale of businesses/assets; (h) income from transition services arrangements related to the sale of our Chemical Intermediates Businesses to Indorama; (i) certain nonrecurring information technology project implementation costs; (j) amortization of pension and postretirement actuarial losses; (k) plant incident remediation (credits) costs; and (l) restructuring, impairment and plant closing and transition costs. Starting in the fourth quarter of 2021, we began to include income and costs associated with the Albemarle Settlement, net in our adjustments since such income and costs represents a one-time legal settlement and does not reflect our ongoing financial performance. We believe that net income of Huntsman Corporation or Huntsman International, as appropriate, is the performance measure calculated and presented in accordance with U.S. GAAP that is most directly comparable to adjusted EBITDA.

We believe adjusted EBITDA is useful to investors in assessing the businesses' ongoing financial performance and provides improved comparability between periods through the exclusion of certain items that management believes are not indicative of the businesses' operational profitability and that may obscure underlying business results and trends. However, this measure should not be considered in isolation or viewed as a substitute for net income of Huntsman Corporation or Huntsman International, as appropriate, or other measures of performance determined in accordance with U.S. GAAP. Moreover, adjusted EBITDA as used herein is not necessarily comparable to other similarly titled measures of other companies due to potential inconsistencies in the methods of calculation. Our management believes this measure is useful to compare general operating performance from period to period and to make certain related management decisions. Adjusted EBITDA is also used by securities analysts, lenders and others in their evaluation of different companies because it excludes certain items that can vary widely across different industries or among companies within the same industry. For example, interest expense can be highly dependent on a company's capital structure, debt levels and credit ratings. Therefore, the impact of interest expense on earnings can vary significantly among companies. In addition, the tax positions of companies can vary because of their differing abilities to take advantage of tax benefits and because of the tax policies of the various jurisdictions in which they operate. As a result, effective tax rates and tax expense can vary considerably among companies. Finally, companies employ productive assets of different ages and utilize different methods of acquiring and depreciating such assets. This can result in considerable variability in the relative costs of productive assets and the depreciation and amortization expense among companies.

Nevertheless, our management recognizes that there are material limitations associated with the use of adjusted EBITDA in the evaluation of our Company as compared to net income of Huntsman Corporation or Huntsman International, as appropriate, which reflects overall financial performance. For example, we have borrowed money in order to finance our operations and interest expense is a necessary element of our costs and ability to generate revenue. Our management compensates for the limitations of using adjusted EBITDA by using this measure to supplement U.S. GAAP results to provide a more complete understanding of the factors and trends affecting the business rather than U.S. GAAP results alone.

Adjusted Net Income

Adjusted net income is computed by eliminating the after tax amounts related to the following from net income attributable to Huntsman Corporation: (a) business acquisition and integration expenses and purchase accounting inventory adjustments; (b) income from discontinued operations; (c) fair value adjustments to Venator investment, net and related loss on disposal; (d) loss on early extinguishment of debt; (e) certain legal and other settlements and related expenses; (f) costs (income) associated with the Albemarle Settlement, net; (g) gain on sale of businesses/assets; (h) income from transition services arrangements associated with the sale of our Chemical Intermediates Businesses to Indorama; (i) certain nonrecurring information technology project implementation costs; (j) amortization of pension and postretirement actuarial losses; (k) plant incident remediation (credits) costs; (l) establishment of significant deferred tax asset valuation allowance; and (m) restructuring, impairment and plant closing and transition costs. Basic adjusted net income per share excludes dilution and is computed by dividing adjusted net income by the weighted average number of shares outstanding during the period. Adjusted diluted net income per share reflects all potential dilutive common shares outstanding during the period and is computed by dividing adjusted net income by the weighted average number of shares outstanding during the period increased by the number of additional shares that would have been outstanding as dilutive securities. Adjusted net income and adjusted net income per share amounts are presented solely as supplemental information.

We believe adjusted net income is useful to investors in assessing the businesses' ongoing financial performance and provides improved comparability between periods through the exclusion of certain items that management believes are not indicative of the businesses' operational profitability and that may obscure underlying business results and trends.

Free Cash Flow

We believe free cash flow from continuing operations is an important indicator of our liquidity as it measures the amount of cash we generate. Management internally uses a free cash flow measure: (a) to evaluate our liquidity, (b) evaluate strategic investments, (c) plan stock buyback and dividend levels and (d) evaluate our ability to incur and service debt.

Adjusted Effective Tax Rate

We believe that the effective tax rate of Huntsman Corporation or Huntsman International, as appropriate, is the performance measure calculated and presented in accordance with U.S. GAAP that is most directly comparable to adjusted effective tax rate. We believe our adjusted effective tax rate provides improved comparability between periods through the exclusion of certain items, such as, business acquisition and integration expenses and purchase accounting inventory adjustments, certain legal and other settlements and related expenses, gains on sale of businesses/assets and certain tax only items, including tax law changes not yet enacted and certain changes in valuation allowances that we believe are not indicative of the businesses' operational profitability and that may obscure underlying business results and trends.

Our forward-looking adjusted effective tax rate is calculated based on our forecast effective tax rate, and the range of our forward-looking adjusted effective tax rate equals the range of our forecast effective tax rate. We disclose forward-looking adjusted effective tax rate because we cannot adequately forecast certain items and events that may or may not impact us in the near future, such as business acquisition and integration expenses and purchase accounting inventory adjustments, certain legal and other settlements and related expenses, gains on sale of businesses/assets and certain tax only items, including tax law changes not yet enacted. Each of such adjustment has not yet occurred, is out of our control and/or cannot be reasonably predicted. In our view, our forward-looking adjusted effective tax rate represents the forecast effective tax rate on our underlying business operations but does not reflect any adjustments related to the items noted above that may occur and can cause our effective tax rate to differ.

Year Ended December 31, 2022 Compared with Year Ended December 31, 2021

For the year ended December 31, 2022, income from continuing operations attributable to Huntsman Corporation was $448 million, a decrease of $548 million from $996 million in the 2021 period. For the year ended December 31, 2022, income from continuing operations attributable to Huntsman International was $449 million, a decrease of $550 million from $999 million in the 2021 period. The decreases noted above were the result of the following items:

- Revenues for the year ended December 31, 2022 increased by $353 million, or 5%, as compared with the 2021 period. The increase was primarily due to higher average selling prices in all our segments, partially offset by lower sales volumes in all our segments. See "—Segment Analysis" below.

- Gross profit for the year ended December 31, 2022 decreased by $38 million, or 2%, as compared with the 2021 period. The decrease resulted from lower gross profit in our Polyurethanes segment, partially offset by higher gross profits in our Performance Products and Advanced Materials segments. See "—Segment Analysis" below.

- Our operating expenses and the operating expenses of Huntsman International for the year ended December 31, 2022 decreased by $25 million and $22 million, respectively, or 3% for both, as compared with the 2021 period, primarily related to lower selling, general and administrative costs.

- Restructuring, impairment and plant closing costs for the year ended December 31, 2022 increased by $46 million, or 115%, as compared with the 2021 period. For more information on restructuring activities, see "Note 12. Restructuring, Impairment and Plant Closing Costs" to our consolidated financial statements.

- Interest expense, net for the year ended December 31, 2022 decreased by $5 million, or 7%, as compared with the 2021 period, primarily related to the redemption in full of our 2021 Senior Notes in the first quarter of 2021.

- Equity in income of investment in unconsolidated affiliates for the year ended December 31, 2022 decreased to $67 million from $143 million in the 2021 period. The decrease was primarily attributable to a decrease in income at our PO/MTBE joint venture in China, in which we hold a 49% interest.

- Fair values adjustments to our investment in Venator and the related option to sell our remaining Venator shares was a net loss of $12 million for the year ended December 31, 2022 as compared with a net loss of $28 million in the 2021 period. For more information, see "Note 4. Discontinued Operations and Business Dispositions—Separation and Deconsolidation of Venator" to our consolidated financial statements.

- Loss on early extinguishment of debt was nil for the year ended December 31, 2022 as compared with $27 million in the 2021 period, primarily due to the redemption in full of our 2022 Senior Notes in the second quarter of 2021. See "Note. 14. Debt—Notes" to our consolidated financial statements.

- (Costs) income associated with the Albemarle Settlement, net was $(3) million for the year ended December 31, 2022 as compared with $465 million for the year ended December 31, 2021 and was related to the arbitration award we won on October 28, 2021 in excess of $600 million against Albemarle for fraud and breach of contract.

- Our income tax expense for the year ended December 31, 2022 decreased to $186 million from $191 million in the 2021 period. The income tax expense of Huntsman International for the year ended December 31, 2022 decreased to $188 million from $192 million in the 2021 period. The decrease in income tax expense was primarily due to a decrease in income from continuing operations before income taxes offset by an increase in valuation allowance. Our income tax expense is significantly affected by the mix of income and losses in the tax jurisdictions in which we operate, along with the impact of valuation allowances in certain tax jurisdictions. For more information concerning income taxes, see "Note 19. Income Taxes" to our consolidated financial statements.

Segment Analysis

Year Ended December 31, 2022 Compared with Year Ended December 31, 2021

(Dollars in millions)	Year ended December 31, 2022	Year ended December 31, 2021	Percent change favorable (unfavorable)
Revenues			
Polyurethanes	$ 5,067	$ 5,019	1%
Performance Products	1,713	1,485	15%
Advanced Materials	1,277	1,198	7%
Total reportable segments' revenues	8,057	7,702	5%
Intersegment eliminations	(34)	(32)	NM
Total	$ 8,023	$ 7,670	5%
Huntsman Corporation			
Adjusted EBITDA(1)			
Polyurethanes	$ 628	$ 879	(29)%
Performance Products	469	359	31%
Advanced Materials	233	204	14%
Total reportable segments' adjusted EBITDA	1,330	1,442	(8)%
Corporate and other	(175)	(196)	11%
Total	$ 1,155	$ 1,246	(7)%
Huntsman International			
Adjusted EBITDA(1)			
Polyurethanes	$ 628	$ 879	(29)%
Performance Products	469	359	31%
Advanced Materials	233	204	14%
Total reportable segments' adjusted EBITDA	1,330	1,442	(8)%
Corporate and other	(172)	(190)	9%
Total	$ 1,158	$ 1,252	(8)%

NM—Not meaningful

(1) For more information, including reconciliation of total reportable segments' adjusted EBITDA to income from continuing operations before income taxes of Huntsman Corporation or Huntsman International, as appropriate, see "Note 26. Operating Segment Information" to our consolidated financial statements.

	Year ended December 31, 2022 vs 2021			
	Average selling prices(1)			
	Local currency	Foreign currency translation impact	Sales volumes(2)	Mix and other
Period-over-period increase (decrease)				
Polyurethanes	16%	(5)%	(10)%	—
Performance Products	27%	(3)%	(11)%	2%
Advanced Materials	20%	(5)%	(19)%	11%

(1) Excludes revenues from tolling arrangements, byproducts and raw materials.
(2) Excludes sales volumes of byproducts and raw materials.

Polyurethanes

The increase in revenues in our Polyurethanes segment for 2022 compared to 2021 was primarily due to higher MDI average selling prices, partially offset by lower sales volumes and the negative impact of weaker major international currencies against the U.S. dollar. MDI average selling prices increased in Europe and the Americas regions. Sales volumes decreased due to lower demand across all our regions and across all markets, other than automotive. The decrease in segment adjusted EBITDA was primarily due to lower sales volumes, lower MDI margins in Europe and Asia, the negative impact of weaker major international currencies against the U.S. dollar and lower equity earnings from our minority-owned joint venture in China. These negative impacts were partially offset by lower fixed costs across all regions and higher MDI margins in the Americas.

Performance Products

The increase in revenues in our Performance Products segment for 2022 compared to 2021 was due to higher average selling prices, partially offset by lower sales volumes. Average selling prices increased across all product lines primarily in response to an increase in raw material costs. Sales volumes decreased across all regions primarily due to slowing construction activity, fewer wind power installations in China and reduced demand in the coatings, adhesives and other industrial markets. The increase in segment adjusted EBITDA was primarily due to increased sales revenue and margins, partially offset by higher fixed costs.

Advanced Materials

The increase in revenues in our Advanced Materials segment for 2022 compared to 2021 was primarily due to higher average selling prices, partially offset by lower sales volumes. Average selling prices increased across all of our end market segments primarily in response to higher raw material, energy and logistics costs as well as improved sales mix. Although sales volumes increased in our aerospace market, overall sales volumes decreased due to lower volumes in our non-aerospace markets resulting from deselection of lower margin business and weaker end market demand, particularly in the fourth quarter of 2022. The increase in segment adjusted EBITDA was primarily due to higher sales prices and improved sales mix.

Corporate and other

Corporate and other includes unallocated corporate overhead, unallocated foreign currency exchange gains and losses, last-in first-out ("LIFO") inventory valuation reserve adjustments, loss on early extinguishment of debt, unallocated restructuring, impairment and plant closing costs, nonoperating income and expense and gains and losses on the disposition of corporate assets. For 2022, adjusted EBITDA from Corporate and other for Huntsman Corporation increased by $21 million to a loss of $175 million from a loss of $196 million for 2021. For 2022, adjusted EBITDA from Corporate and other for Huntsman International increased by $18 million to a loss of $172 million from a loss of $190 million for 2021. The increase in adjusted EBITDA from Corporate and other resulted primarily from an increase in unallocated foreign currency exchange gains and a decrease in corporate overhead costs and LIFO valuation losses.

Year Ended December 31, 2021 Compared with Year Ended December 31, 2020

For the year ended December 31, 2021, income from continuing operations attributable to Huntsman Corporation was $996 million, an increase of $739 million from $257 million in the 2020 period. For the year ended December 31, 2021, income from continuing operations attributable to Huntsman International was $999 million, an increase of $741 million from $258 million in the 2020 period. The increases noted above were the result of the following items:

- Revenues for the year ended December 31, 2021 increased by $2,249 million, or 41%, as compared with the 2020 period. The increase was primarily due to higher average selling prices as well as higher sales volumes in all our segments.

- Gross profit for the year ended December 31, 2021 increased by $607 million, or 62%, as compared with the 2020 period. The increase resulted from higher gross profits in all our segments.

- Our operating expenses and the operating expenses of Huntsman International for the year ended December 31, 2021 increased by $309 million and $308 million, respectively, or 61% and 62%, respectively, as compared with the 2020 period, primarily related to higher selling, general and administrative costs and the gain on sale of our India-based DIY business in 2020. See "Note 4. Discontinued Operations and Business Dispositions—Sale of India-Based-Do-It-Yourself Consumer Adhesives Business" to our consolidated financial statements.

- Our interest expense, net and the interest expense, net of Huntsman International for the year ended December 31, 2021, decreased by $19 million and $21 million, respectively, or 22% and 24%, respectively, as compared with the 2020 period, primarily related to the redemption in full of our 2021 Senior Notes in the first quarter of 2021.

- Equity in income of investment in unconsolidated affiliates for the year ended December 31, 2021 increased to $143 million from $42 million in the 2020 period. The increase was primarily attributable to an increase in income at our PO/MTBE joint venture in China, in which we hold a 49% interest.

- Fair value adjustments to our investment in Venator and the related option to sell our remaining Venator shares and the related loss on disposal was a net loss of $28 million for the year ended December 31, 2021 as compared with a net loss of $88 million in the 2020 period. For more information, see "Note 4. Discontinued Operations and Business Dispositions—Separation and Deconsolidation of Venator" to our consolidated financial statements.

- Loss on early extinguishment of debt was $27 million for the year ended December 31, 2021 as compared with nil in the 2020 period, primarily due to the redemption in full of our 2022 Senior Notes in the second quarter of 2021. See "Note. 14. Debt—Notes" to our consolidated financial statements.

- Income associated with the Albemarle Settlement, net was $465 million for the year ended December 31, 2021 related to the arbitration award we won on October 28, 2021 in excess of $600 million against Albemarle for fraud and breach of contract.

- Our income tax expense for the year ended December 31, 2021 increased to $191 million from $42 million in the 2020 period. The income tax expense of Huntsman International for the year ended December 31, 2021 increased to $192 million from $42 million in the 2020 period. The increase in income tax expense was primarily due to an increase in income from continuing operations before income taxes. Our income tax expense is significantly affected by the mix of income and losses in the tax jurisdictions in which we operate, along with the impact of valuation allowances in certain tax jurisdictions. For more information concerning income taxes, see "Note 19. Income Taxes" to our consolidated financial statements.

For an analysis of our segments' results of operations for the fiscal years ended December 31, 2021 and 2020, see "Part II. Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations" of our Annual Report on Form 10-K for the fiscal year ended December 31, 2021 filed with the SEC on February 15, 2022.

Selected Quarterly Financial Data

For each of our Company and Huntsman International, the following tables set forth a summary of selected quarterly financial data for the years ended December 31, 2022 and 2021 (dollars in millions). The results of our Textile Effects Business are reported as discontinued operations for all periods presented.

Huntsman Corporation

	Three months ended			
	March 31, 2022	**June 30, 2022**	**September 30, 2022**	**December 31, 2022**
Revenues	$ 2,192	$ 2,170	$ 2,011	$ 1,650
Gross profit	515	492	349	190
Income from continuing operations	222	229	116	(56)
Net income	240	242	115	(74)
Net income attributable to Huntsman Corporation	223	228	100	(91)

	Three months ended			
	March 31, 2021	**June 30, 2021**	**September 30, 2021**	**December 31, 2021**
Revenues	$ 1,644	$ 1,817	$ 2,097	$ 2,112
Gross profit	345	379	437	423
Income from continuing operations	87	155	219	594
Net income	100	172	225	607
Net income attributable to Huntsman Corporation	83	156	209	597

Huntsman International

	Three months ended			
	March 31, 2022	**June 30, 2022**	**September 30, 2022**	**December 31, 2022**
Revenues	$ 2,192	$ 2,170	$ 2,011	$ 1,650
Gross profit	515	492	349	190
Income from continuing operations	225	230	115	(58)
Net income	243	243	114	(76)
Net income attributable to Huntsman International	226	229	99	(93)

	Three months ended			
	March 31, 2021	**June 30, 2021**	**September 30, 2021**	**December 31, 2021**
Revenues	$ 1,644	$ 1,817	$ 2,097	$ 2,112
Gross profit	345	379	437	423
Income from continuing operations	89	156	219	594
Net income	102	173	225	607
Net income attributable to Huntsman International	85	157	209	597

Liquidity and Capital Resources

The following is a discussion of our liquidity and capital resources and generally does not include separate information with respect to Huntsman International in accordance with General Instruction I of Form 10-K.

Cash Flows For Year Ended December 31, 2022 Compared with Year Ended December 31, 2021

Net cash provided by operating activities from continuing operations for 2022 and 2021 was $892 million and $915 million, respectively. The decrease in net cash provided by operating activities from continuing operations during 2022 compared with 2021 was primarily attributable to decreased operating income as described in "—Results of Operations" above, partially offset by a net cash inflow of $357 million related to changes in operating assets and liabilities for 2022 as compared with 2021. The decrease in net cash provided by operating activities from continuing operations noted above includes the receipt of the final arbitration award of $332.5 million, partially offset by the payment of legal fees and taxes of approximately $255 million in 2022 associated with the Albemarle Settlement as compared with $332.5 million in net proceeds associated with the Albemarle Settlement received in 2021.

Net cash used in investing activities from continuing operations for 2022 and 2021 was $260 million and $508 million, respectively. During 2022 and 2021, we paid $272 million and $326 million, respectively, for capital expenditures, including $100 million during 2021, on a new MDI splitter in Geismar, Louisiana. During 2021, we received $43 million for the sale of businesses, primarily due to the receipt of $28 million pursuant to an earnout provision in connection with the sale of our India-based DIY business. See "Note 4. Discontinued Operations and Business Dispositions—Sale of India-Based Do-It-Yourself Consumer Adhesives Business" to our consolidated financial statements. During 2021, we paid $245 million for the acquisition of businesses, primarily related to approximately $242 million paid for the acquisition of Gabriel Performance Products, net of cash acquired. See "Note 3. Business Combinations and Acquisitions—Acquisition of Gabriel Performance Products" to our consolidated financial statements.

Net cash used in financing activities for 2022 and 2021 was $994 million and $977 million, respectively. During 2022 and 2021, we paid $1,005 million and $200 million for repurchases of our common stock, respectively. During 2022, we had net borrowings of $219 million under our 2022 Revolving Credit Facility. During 2021, we redeemed in full €445 million (approximately $541 million) in aggregate principal amount of our 2021 Senior Notes, and we redeemed in full $400 million in aggregate principal amount of our 2022 Senior Notes. Additionally, during 2021, we issued $400 million in aggregate principal amount of our 2031 Senior Notes and received borrowings of approximately 177 million SAR (approximately $47 million) related to funding on a new term loan facility of our consolidated 50%-owned joint venture, AAC. See "Note 14. Debt—Direct and Subsidiary Debt—Variable Interest Entity Debt" to our consolidated financial statements.

Free cash flow from continuing operations for 2022 and 2021 were proceeds of cash of $620 million and $589 million, respectively. The increase in free cash flow from continuing operations was primarily attributable to a decrease in cash used for capital expenditures during 2022 as compared with 2021, despite the decrease in cash provided by operating activities from continuing operations during 2022 as compared with 2021, which included a decrease of approximately $255 million in net proceeds associated with the Albemarle Settlement.

Cash Flows For Year Ended December 31, 2021 Compared with Year Ended December 31, 2020

Net cash provided by operating activities from continuing operations for 2021 and 2020 was $915 million and $231 million, respectively. The increase in net cash provided by operating activities from continuing operations during 2021 compared with 2020 was primarily attributable to increased operating income as described in "—Results of Operations" above, including $332.5 million in proceeds associated with the Albemarle Settlement, partially offset by a net cash outflow of $42 million related to changes in operating assets and liabilities for 2021 as compared with 2020.

Net cash (used in) provided by investing activities from continuing operations for 2021 and 2020 was $(508) million and $1,474 million, respectively. During 2021 and 2020, we paid $326 million and $237 million, respectively, for capital expenditures, including $100 million and $54 million during 2021 and 2020, respectively, on a new MDI splitter in Geismar, Louisiana. During 2021, we received $43 million for the sale of businesses, primarily due to the receipt of $28 million pursuant to an earnout provision in connection with the sale of our India-based DIY business. In January 2020, we received approximately $1.92 billion for the sale of our Chemical Intermediates Businesses, and in November 2020, we received approximately $257 million for the sale of our India-based DIY business. See "Note 4. Discontinued Operations and Business Dispositions—Discontinued Operations—Sale of Chemical Intermediates Businesses" and "Note 4. Discontinued Operations and Business Dispositions—Sale of India-Based Do-It-Yourself Consumer Adhesives Business" to our consolidated financial statements. During 2021, we paid $245 million for the acquisition of businesses, primarily related to approximately $242 million paid for the Gabriel Acquisition, net of cash acquired. During 2020, we paid approximately $650 million in connection with the Icynene-Lapolla Acquisition and the CVC Thermoset Specialties Acquisition, net of cash acquired. See "Note 3. Business Combinations and Acquisitions" to our consolidated financial statements. In December 2020, we completed the sale of approximately 42.4 million ordinary shares of Venator and received approximately $99 million. See "Note 4. Discontinued Operations and Business Dispositions—Separation and Deconsolidation of Venator" to our consolidated financial statements. During the year ended December 31, 2020, we entered into a sale and leaseback agreement to sell certain properties in Basel, Switzerland, for which we received approximately $73 million in proceeds from the sale of assets.

Net cash used in financing activities for 2021 and 2020 was $977 million and $655 million, respectively. The increase in net cash used in financing activities was primarily due to the redemption in full of €445 million (approximately $541 million) in aggregate principal amount of our 2021 Senior Notes and the redemption in full of $400 million in aggregate principal amount of our 2022 Senior Notes during 2021. During 2021 and 2020, we paid $200 million and $96 million, respectively, for repurchases of our common stock. During 2021, we issued $400 million in aggregate principal amount of our 2031 Senior Notes and received borrowings of approximately 177 million SAR (approximately $47 million) related to funding on a new term loan facility of our consolidated 50%-owned joint venture, AAC. See "Note 14. Debt—Direct and Subsidiary Debt—Variable Interest Entity Debt" to our consolidated financial statements. During 2020, we repaid a total of $203 million on our 2018 $1.2 billion senior unsecured credit facility and repaid in full $109 million on our 364-day term loan facility (the "2019 Term Loan").

Free cash flow from continuing operations for 2021 and 2020 were proceeds of cash of $589 million and use of cash of $6 million, respectively. The increase in free cash flow from continuing operations was primarily attributable to the increase in cash provided by operating activities from continuing operations, including $332.5 million in proceeds associated with the Albemarle Settlement, partially offset by an increase in cash used for capital expenditures during 2021 as compared with 2020.

Changes in Financial Condition

The following information summarizes our working capital (dollars in millions):

	December 31, 2022	December 31, 2021	(Decrease) increase	Percent change
Cash and cash equivalents	$ 654	$ 1,041	$ (387)	(37)%
Accounts and notes receivable, net	834	1,015	(181)	(18)%
Inventories	995	1,038	(43)	(4)%
Receivable associated with the Albemarle Settlement	—	333	(333)	(100)%
Other current assets	190	155	35	23%
Current assets held for sale (1)	472	346	126	36%
Total current assets	3,145	3,928	(783)	(20)%
Accounts payable	961	1,114	(153)	(14)%
Accrued liabilities	429	713	(284)	(40)%
Current portion of debt	66	12	54	450%
Current operating lease liabilities	51	49	2	4%
Current liabilities held for sale (1)	194	163	31	19%
Total current liabilities	1,701	2,051	(350)	(17)%
Working capital	$ 1,444	$ 1,877	$ (433)	(23)%

(1) Held for sale assets and liabilities are those of our Textile Effects Business. Total assets and liabilities held for sale as of December 31, 2022 are classified as current as we anticipate the sale of our Textile Effects Business will close in February 2023. For more information, see "Note 4. Discontinued Operations and Business Dispositions—Discontinued Operations—Sale of Textile Effects Business" to our consolidated financial statements.

Our working capital decreased by $433 million as a result of the net impact of the following significant changes:

- The decrease in cash and cash equivalents of $387 million resulted from the matters identified on our consolidated statements of cash flows. See also "—Cash Flows Year Ended December 31, 2022 Compared with Year Ended December 31, 2021."

- Accounts and notes receivable, net decreased by $181 million primarily due to lower revenues in the fourth quarter of 2022 compared to the fourth quarter of 2021.

- Inventories decreased by $43 million primarily due to lower inventory costs and volumes.

- Receivable associated with the Albemarle Settlement decreased to nil due to the receipt of the final arbitration award payment of $332.5 million during the second quarter of 2022.

- Accounts payable decreased by $153 million primarily due to lower inventory purchases.

- Accrued liabilities decreased by $284 million primarily due to lower accrued compensation, current income taxes and approximately $200 million of legal fees associated with the Albemarle Settlement, offset by an increase in restructuring and plant closing reserves.

- Current portion of debt increased by $54 million primarily due to net borrowings of $55 million under our 2022 Revolving Credit Facility that are classified as short term.

Short-Term Liquidity

We depend upon our cash, our 2022 $1.2 billion senior unsecured revolving credit facility (“2022 Revolving Credit Facility”), our U.S. accounts receivable securitization program (“U.S. A/R Program”) and European accounts receivable securitization program (“EU A/R Program” and collectively with the U.S. A/R Program, “A/R Programs”) and other debt instruments to provide liquidity for our operations and working capital needs. As of December 31, 2022, we had $1,847 million of combined cash and unused borrowing capacity, consisting of $654 million in cash, $1,132 million in availability under our 2022 Revolving Credit Facility and $61 million in availability under our A/R Programs. Our liquidity can be significantly impacted by various factors. The following matters are expected to have a significant impact on our liquidity:

- During 2023, we expect to spend between approximately $240 million to $250 million on capital expenditures. Our future expenditures include certain environmental, health and safety upgrades; expansions of our existing manufacturing and other facilities; certain cost reduction projects, including those described below; and certain information technology expenditures. We expect to fund capital expenditures with cash provided by operations.
- During 2023, we expect to make contributions to our pension and postretirement benefit plans of approximately $37 million.
- From January 1, 2023 through February 7, 2023, we repurchased 691,326 shares of our common stock for approximately $21 million under our share repurchase program.
- On August 9, 2022, we entered into a definitive agreement to sell our Textile Effects Business to Archroma for a purchase price of $593 million in cash plus the assumption of underfunded pension liabilities, and we expect the net after tax cash proceeds to be approximately $540 million before fees and subject to certain customary purchase price adjustments as set forth in the purchase agreement. We expect the transaction to close on February 28, 2023.

Long-Term Liquidity

- During 2020, management implemented cost realignment and synergy plans. In connection with these plans, we remain committed to achieving annualized cost savings and synergy benefits of approximately $140 million during 2023, as previously communicated. During 2021, management implemented additional cost realignment plans, and in connection with these plans, we expect to achieve further annualized cost savings of approximately $100 million by the end of 2023. Associated with these plans, we expect cash costs of approximately $225 million, including approximately $30 million of capital expenditures, through 2024, of which we have spent approximately $140 million to date.
- In early November 2022, we announced our commitment and specific plans to further realign our cost structure beyond the current in-progress cost optimization programs with additional restructuring in Europe. The new program includes exiting and consolidating certain facilities, workforce relocation to lower cost locations and further personnel rationalization. In connection with this program, we currently expect to achieve annualized cost savings of approximately $40 million by the end of 2023. Associated with this program, we expect cash costs of approximately $65 million, including approximately $15 million of capital expenditures, through 2024.
- On April 29, 2022, a New Orleans jury awarded us approximately $94 million in our long-running court battle against Praxair/Linde, one of the industrial gas suppliers to our Geismar, Louisiana MDI manufacturing site. The case was filed after Praxair refused to properly maintain its own Geismar facility and then repeatedly failed to supply our requirements for industrial gas needed to manufacture MDI under long-term supply contracts that expired in 2013. After adding mandatory pre-judgment and post-judgment interest to the award, we expect damages to exceed $125 million before deducting for taxes and legal fees. The award is subject to a pending appeal, and if affirmed, we expect to receive net proceeds of approximately $50 million to $60 million. We have not yet recognized the award in our consolidated statements of operations.
- On May 20, 2022, Huntsman International entered into the 2022 Revolving Credit Facility. Borrowings will bear interest at the rates specified in the credit agreement governing the 2022 Revolving Credit Facility, which will vary based on the type of loan and Huntsman International’s debt ratings. Under the credit agreement, the interest rate margin and the commitment fee rates are also subject to adjustments based on the Company’s performance on specified sustainability target thresholds with respect to annual percentage reduction in operational greenhouse gas emissions intensity and annual percentage reduction in water consumption intensity. Unless previously terminated in accordance with its terms, the credit agreement will mature in May 2027. Huntsman International may increase the 2022 Revolving Credit Facility commitments up to an additional $500 million, subject to the satisfaction of certain conditions. See “Note 14. Debt—Direct and Subsidiary Debt—Revolving Credit Facility” to our consolidated financial statements.
- On February 17, 2023, our Board of Directors declared a $0.2375 per share cash dividend on our common stock. This represents an approximate 12% increase from the previous dividend.

As of December 31, 2022, we had $66 million classified as current portion of debt, including net borrowings of $55 million under our 2022 Revolving Credit Facility, debt at our variable interest entities of $9 million and certain other short-term facilities and scheduled amortization payments totaling $2 million. We intend to renew, repay or extend the majority of these short-term facilities in the next twelve months.

As of December 31, 2022, we had approximately $619 million of cash and cash equivalents, including restricted cash, held by our foreign subsidiaries, including our variable interest entities. With the exception of certain amounts that we expect to repatriate in the foreseeable future, we intend to use cash held in our foreign subsidiaries to fund our local operations. Nevertheless, we could repatriate additional cash as dividends and the repatriation of cash as a dividend would generally not be subject to U.S. taxation. However, such repatriation may potentially be subject to limited foreign withholding taxes.

For more information regarding our debt, see “Note 14. Debt” to our consolidated financial statements.

Critical Accounting Estimates

This discussion and analysis of financial condition and results of operations is based on our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States of America. The preparation of financial statements requires us to make judgments, estimates and assumptions that involve a significant level of estimation and uncertainty and are reasonably likely to have a material impact on our financial condition and/or results of operations. Summarized below are our critical accounting estimates.

Income Taxes

Deferred income taxes reflect the net effects of temporary differences between assets and liabilities for financial and tax reporting purposes. We evaluate deferred tax assets to determine whether it is more likely than not that they will be realized; valuation allowances are recorded to offset deferred tax assets unlikely to be realized. Valuation allowances are reviewed each period on a tax jurisdiction basis to analyze whether there is sufficient positive or negative evidence to support a change in judgment about the realizability of the related deferred tax assets. These conclusions require significant judgment. In evaluating the objective evidence that historical results provide, we consider cumulative income or losses during the applicable three-year period. Cumulative losses incurred over the three-year period limits our ability to consider other evidence, such as our projections for the future. Changes in expected future taxable income and tax planning strategies in applicable jurisdictions affect our assessment of the realization of deferred tax assets. Our judgments regarding valuation allowances are also influenced by factors outside of business results, including the costs and risks associated with any tax planning strategy associated with utilizing a deferred tax asset. As of December 31, 2022, we had total valuation allowances of $169 million, which represents an increase of $38 million from the prior year, and we have a recognized a net deferred tax liability of $103 million. See “Note 19. Income Taxes” to our consolidated financial statements for more information regarding our deferred tax assets and valuation allowances.

Employee Benefit Programs

We sponsor several contributory and non-contributory defined benefit plans, covering employees primarily in the U.S., the U.K., The Netherlands, Belgium and Switzerland, but also covering employees in a number of other countries. We fund the material plans through trust arrangements (or local equivalents) where the assets are held separately from us. We also sponsor unfunded postretirement plans which provide medical and, in some cases, life insurance benefits covering certain employees in the U.S. and Canada. Amounts recorded in our consolidated financial statements are recorded based upon actuarial valuations performed by various independent actuaries. Inherent in these valuations are numerous assumptions regarding expected long-term rates of return on plan assets, discount rates, compensation increases, mortality rates and health care cost trends. Each of these critical estimates are subject to uncertainty and are assessed by us using historical data, as well as projections of future conditions. These assumptions and changes during the period are described in “Note 18. Employee Benefit Plans” to our consolidated financial statements.

We retain third party actuaries to assist us with judgments necessary to make assumptions on which our employee pension and postretirement benefit plan obligations and expenses are based. The effect of a 1% change in three key assumptions is summarized as follows (dollars in millions):

Assumptions	Statement of operations(1)	Balance sheet impact(2)
Discount rate		
—1% increase	$ (35)	$ (227)
—1% decrease	47	255
Expected long-term rates of return on plan assets		
—1% increase	(31)	—
—1% decrease	31	—
Rate of compensation increase		
—1% increase	9	24
—1% decrease	(5)	(22)

(1) Estimated (decrease) increase on 2022 net periodic benefit cost

(2) Estimated (decrease) increase on December 31, 2022 pension and postretirement liabilities and accumulated other comprehensive loss

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We are exposed to market risks, such as changes in interest rates, foreign exchange rates and commodity prices. From time to time, we enter into transactions, including transactions involving derivative instruments, to manage certain of these exposures. We also hedge our net investment in certain European operations. Changes in the fair value of the hedge in the net investment of certain European operations are recorded in accumulated other comprehensive loss. For more information on interest rate risk, foreign exchange rate risk and commodity prices risk, see “Note 15. Derivative Instruments and Hedging Activities” to our consolidated financial statements.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

Our consolidated financial statements required by this item are included on the pages immediately following the Index to Consolidated Financial Statements appearing on page F-1.

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

Our management, with the participation of our chief executive officer and chief financial officer, has evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act) as of December 31, 2022. Based on this evaluation, our chief executive officer and chief financial officer have concluded that, as of December 31, 2022, our disclosure controls and procedures were effective, in that they ensure that information required to be disclosed by us in the reports that we file or submit under the Exchange Act is (1) recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and (2) accumulated and communicated to our management, including our chief executive officer and chief financial officer, as appropriate to allow timely decisions regarding required disclosure.

Changes in Internal Control Over Financial Reporting

No changes to our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) occurred during the quarter ended December 31, 2022 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Management's Report on Internal Control Over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting. Our internal control framework and processes for our Company and Huntsman International are designed to provide reasonable assurance to management, Huntsman International's Board of Managers and our Board of Directors regarding the reliability of financial reporting and the preparation of our consolidated financial statements in accordance with accounting principles generally accepted in the United States of America.

Our internal control over financial reporting for our Company and Huntsman International 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 our Company and Huntsman International;

- provide reasonable assurance that transactions are recorded properly to allow for the preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of our Company and Huntsman International are being made only in accordance with authorizations of management and Directors of our Company and Huntsman International;

- provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on our consolidated financial statements; and

- provide reasonable assurance as to the detection of fraud.

Because of its inherent limitations, a system of internal control over financial reporting can provide only reasonable assurance and may not prevent or detect misstatements. Further, because of changing conditions, effectiveness of internal control over financial reporting may vary over time.

Our management assessed the effectiveness of our internal control over financial reporting for our Company and Huntsman International and concluded that, as of December 31, 2022, such internal control is effective. In making this assessment, management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in *Internal Control—Integrated Framework (2013)*.

Our independent registered public accounting firm, Deloitte & Touche LLP, with direct access to our Board of Directors through our Audit Committee, have audited our consolidated financial statements prepared by our Company and have issued an attestation report on internal control over financial reporting for our Company.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and Board of Directors of Huntsman Corporation

Opinion on Internal Control over Financial Reporting

We have audited the internal control over financial reporting of Huntsman Corporation and subsidiaries (the "Company") as of December 31, 2022, based on criteria established in *Internal Control — Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control — Integrated Framework (2013)* issued by COSO.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated financial statements as of and for the year ended December 31, 2022, of the Company and our report dated February 21, 2023, expressed an unqualified opinion on those financial statements.

Basis for Opinion

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

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

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

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

/s/ DELOITTE & TOUCHE LLP

Houston, Texas
February 21, 2023

ITEM 9B. OTHER INFORMATION

None.

ITEM 9C. DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS

Not applicable.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Information relating to our Directors (including identification of our Audit Committee's financial expert(s)) and executive officers will be disclosed in the definitive Proxy Statement for our Annual Meeting of Stockholders and is incorporated herein by reference. See also the information regarding executive officers of the registrant set forth in Part I under the caption "Information about Our Executive Officers" in reliance on General Instruction G to Form 10-K.

Code of Ethics

We have adopted a code of ethics, as defined by Item 406(b) of Regulation S-K under the Exchange Act, that applies to our principal executive officer, principal financial officer and principal accounting officer or controller. A copy of the code of ethics is posted on our website, at www.huntsman.com. We intend to disclose any amendments to, or waivers from, our code of ethics on our website.

ITEM 11. EXECUTIVE COMPENSATION

Information relating to executive compensation and our equity compensation plans will be disclosed in the definitive Proxy Statement for our Annual Meeting of Stockholders and is incorporated herein by reference.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

Information with respect to beneficial ownership of our common stock by each Director and all Directors and officers of our Company as a group will be disclosed in the definitive Proxy Statement for our Annual Meeting of Stockholders and is incorporated herein by reference.

Information relating to any person who beneficially owns in excess of five percent of the total outstanding shares of our common stock will be disclosed in the definitive Proxy Statement for our Annual Meeting of Stockholders and is incorporated herein by reference.

Information with respect to compensation plans under which equity securities are authorized for issuance will be disclosed in the definitive Proxy Statement for our Annual Meeting of Stockholders and is incorporated herein by reference.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

Information with respect to certain relationships and related transactions will be disclosed in the definitive Proxy Statement for our Annual Meeting of Stockholders and is incorporated herein by reference.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

Information with respect to principal accountant fees and services, and the disclosure of the Audit Committee's pre-approval policies and procedures are contained in the definitive Proxy Statement for our Annual Meeting of Stockholders and are incorporated herein by reference.

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PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) Documents filed with this report.

1. Consolidated Financial Statements:

See Index to Consolidated Financial Statements on page F-1

2. Financial Statement Schedules:

Other than as stated on the Index to Consolidated Financial Statements on page F-1 with respect to Schedule I, financial statement schedules are omitted because they are not required or are not applicable or the required information is shown in the consolidated financial statements or notes thereto.

3. Exhibits:

The exhibits to this report are listed on the Exhibit Index below.

(b) Description of exhibits.

EXHIBIT INDEX

		Incorporated by Reference		
Number	**Description**	**Form**	**Exhibit**	**Filing Date**
2.1	Equity and Asset Purchase Agreement, dated as of August 9, 2022, by and among Huntsman, Archroma, Archroma Germany and solely for purposes set forth in the Purchase Agreement, the Archroma Financing Party.	8-K	2.1	August 9, 2022
3.1	Amended and Restated Certificate of Incorporation of Huntsman Corporation	8-K	3.1	May 12, 2014
3.2	Sixth Amended and Restated Bylaws of Huntsman Corporation dated as of June 16, 2020 (as amended by Amendment to Sixth Amended and Restated Bylaws of Huntsman Corporation, effective as of October 28, 2020)	10-K	3.2	February 12, 2021
4.1	Form of stock certificate of Huntsman Corporation	S-1	4.68	February 8, 2005
4.2	Indenture, dated as of March 31, 2015, by and among Huntsman International LLC, the guarantors named therein, Citibank, N.A., London Branch, as paying agent, transfer agent, registrar and authenticating agent, and Wilmington Trust, National Association, as trustee	8-K	4.1	April 2, 2015
4.3	Form of 4.25% Senior Notes due 2025 (included as Exhibit A to Exhibit 4.2)	8-K	4.1	April 2, 2015
4.4	Indenture, dated as of March 13, 2019, by and between Huntsman International LLC and Wilmington Trust, National Association, as trustee.	8-K	4.1	March 13, 2019
4.5	First Supplemental Indenture, dated as of March 13, 2019, by and between Huntsman International LLC and Wilmington Trust, National Association, as trustee.	8-K	4.2	March 13, 2019
4.6	Form of 4.500% Senior Notes due 2029 (included as Exhibit A to Exhibit 4.5)	8-K	4.3	March 13, 2019
4.7	Second Supplemental Indenture, dated as of May 26, 2021, by and between Huntsman International LLC and Wilmington Trust, National Association, as trustee	8-K	4.2	May 26, 2021
4.8	Form of 2.950% Senior Notes due 2031 (included as Exhibit A to Exhibit 4.7)	8-K	4.3	May 26, 2021
4.9	Description of Securities	10-K	4.14	February 13, 2020
10.1	Employment Agreement with Anthony Hankins	S-1/A	10.27	January 28, 2005
10.2	Form of Indemnification Agreement	S-1/A	10.25	February 8, 2005
10.3	Amended and Restated Huntsman Supplemental Executive Retirement Plan	8-K	10.1	December 30, 2005
10.4	Huntsman Supplemental Executive MPP Plan	8-K	10.2	December 30, 2005
10.5	Amended and Restated Huntsman Supplemental Savings Plan	8-K	10.3	December 30, 2005
10.6	Huntsman Outside Directors Elective Deferral Plan	8-K	10.4	December 30, 2005
10.7	First Amendment to Huntsman Supplemental Executive Retirement Plan	10-K	10.32	February 22, 2008
10.8	First Amendment to Huntsman Supplemental Executive MPP Plan	10-K	10.33	February 22, 2008
10.9	First Amendment to Huntsman Supplemental Savings Plan	10-K	10.34	February 22, 2008
10.10	Second Amendment to Huntsman Supplemental Savings Plan	10-K	10.35	February 22, 2008
10.11	First Amendment to Huntsman Outside Directors Elective Deferral Plan	10-K	10.36	February 22, 2008

10.12	U.S. Receivables Loan Agreement dated as of October 16, 2009	8-K	10.1	October 22, 2009
10.13	U.S. Contribution Agreement dated as of October 16, 2009 between Huntsman International LLC and Huntsman Receivables Finance II LLC	8-K	10.2	October 22, 2009
10.14	Second Amendment to Huntsman Supplemental Executive Retirement Plan	10-K	10.38	February 17, 2011
10.15	Third Amendment to Huntsman Supplemental Executive Retirement Plan	10-K	10.39	February 17, 2011
10.16	Form of Nonqualified Stock Option Agreement effective for grants from February 2, 2011 to May 5, 2016	10-K	10.42	February 17, 2011
10.17	Form of Restricted Stock Unit Agreement for Outside Directors effective for grants from February 2, 2011 to May 5, 2016	10-K	10.43	February 17, 2011
10.18	Master Amendment No. 2 to the U.S. Receivables Loan Agreement, U.S. Servicing Agreement and Transaction Documents dated as of April 18, 2011	8-K	10.1	April 20, 2011
10.19	Second Amendment to Huntsman Outside Directors Elective Deferral Plan	10-Q	10.5	May 5, 2011
10.20	Third Amendment to Huntsman Outside Directors Elective Deferral Plan	10-Q	10.6	May 5, 2011
10.21	Master Amendment No. 3 to the U.S. Receivables Loan Agreement, U.S. Servicing Agreement and Transaction Documents dated as of April 29, 2013	8-K	10.1	May 2, 2013
10.22	Huntsman Corporation Stock Incentive Plan (amended and restated)	8-K	10.1	May 12, 2014
10.23	Amendment to the Huntsman Corporation Stock Incentive Plan Nonqualified Stock Option Agreement effective for grants through May 5, 2016	10-K	10.66	February 18, 2015
10.24	Master Amendment No. 4 to the U.S. Receivables Loan Agreement, U.S. Servicing Agreement and Transaction Documents and Waiver, dated as of March 30, 2015	8-K	10.2	April 2, 2015
10.25	Huntsman Corporation 2016 Stock Incentive Plan	8-K	10.1	May 11, 2016
10.26	Form of Nonqualified Stock Option Agreement effective for grants from May 5, 2016 to January 31, 2017	S-8	99.1	May 31, 2016
10.27	Form of Phantom Share Agreement	10-K	10.66	February 15, 2017
10.28	Form of Performance Share Unit Award Agreement	10-K	10.67	February 15, 2017
10.29	Form of Nonqualified Stock Option Agreement	10-K	10.68	February 15, 2017
10.30	Form of Restricted Stock Agreement	10-K	10.69	February 15, 2017
10.31	Form of Stock Unit Agreement for Outside Directors	10-K	10.70	February 15, 2017
10.32	Form of Notice of Award of Common Stock	10-K	10.71	February 15, 2017
10.33	Master Amendment No. 6 to the U.S. Receivables Loan Agreement, U.S. Servicing Agreement, U.S Receivables Purchase Agreement and Transaction Documents dated as of April 21, 2017	10-Q	10.2	April 26, 2017
10.34	Credit Agreement, dated May 21, 2018, between Huntsman International LLC, JPMorgan Chase Bank, N.A., as administrative agent, Bank of America, N.A. and Citibank, N.A. as co-syndication agents, and Goldman Sachs Bank USA and PNC Bank, National Association, as co-documentation agents, and the lenders thereto.	8-K	10.1	May 23, 2018
10.34	Master Amendment No. 7 to the U.S. Receivables Loan Agreement, U.S. Servicing Agreement, U.S. Receivables Purchase Agreement and Transaction Documents, dated as of April 18, 2019	10-K	10.41	April 24, 2019
10.35	Amended and Restated European Contribution Agreement, dated as of April 18, 2019	10-K	10.41	February 12, 2021
10.36	Master Amendment No. 8 to the U.S. Receivables Loan Agreement, U.S. Servicing Agreement, U.S. Receivables Purchase Agreement and Transaction Documents, dated as of December 3, 2019	10-K	10.52	February 13, 2020
10.37	Huntsman Executive Severance Plan (as amended and restated effective February 19, 2020)	8-K	10.1	February 19, 2020
10.38	Second Amended and Restated Severance Agreement dated February 19, 2020, between Huntsman Corporation and Peter R. Huntsman	8-K	10.2	February 19, 2020
10.39	Master Amendment No. 9 to the U.S. Receivables Loan Agreement, U.S. Servicing Agreement, U.S. Receivables Purchase Agreement and Transaction Documents and Waiver, dated as of October 30, 2020	10-K	10.45	February 12, 2021
10.40	Master Amendment No. 10 to U.S. Receivables Loan Agreement, U.S. Servicing Agreement, U.S. Receivables Purchase Agreement and Transaction Documents, dated as of July 1, 2021	10-Q	10.1	July 30, 2021
10.41	Amended and restated European Receivables Loan Agreement, dated as of July 1, 2021	10-Q	10.2	July 30, 2021
10.42	Credit Agreement, dated May 20, 2022, between Huntsman International LLC, Citibank, N.A., as administrative agent, Citibank, N.A., BOFA Securities, Inc., PNC Capital Markets LLC, TD Securities (USA) LLC and Truist Securities, Inc., as Co-Sustainability Structuring Agents, Bank of America, N.A., PNC Bank, National Association, The Toronto Dominion Bank, New York Branch and Truist Bank, as co-syndication agents, and BMO Harris Bank N.A., Industrial and Commercial Bank of China Limited, New York Branch JPMorgan Chase Bank, N.A. and MUFG Bank, Ltd, as co-documentation agents, and the lenders thereto	8-K	10.1	May 23, 2022
21.1*	Subsidiaries of Huntsman Corporation			
23.1*	Consent of Independent Registered Public Accounting Firm			
23.2*	Consent of Independent Registered Public Accounting Firm			
31.1*	Certification of Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002			
31.2*	Certification of Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002			
32.1*	Certification of Chief Executive Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002			
32.2*	Certification of Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002			
101.INS*	XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.			
101.SCH*	Inline XBRL Taxonomy Extension Schema			
101.CAL*	Inline XBRL Taxonomy Extension Calculation Linkbase			
101.LAB*	Inline XBRL Taxonomy Extension Label Linkbase			
101.PRE*	Inline XBRL Taxonomy Extension Presentation Linkbase			
101.DEF*	Inline XBRL Taxonomy Extension Definition Linkbase			
104*	The cover page from this Annual Report on Form 10-K, formatted in Inline XBRL and contained in Exhibit 101			

* Filed herewith.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrants have duly caused this report to be signed on their behalf by the undersigned, thereunto duly authorized.

Dated: February 21, 2023

HUNTSMAN CORPORATION
HUNTSMAN INTERNATIONAL LLC

By: /s/ PHILIP M. LISTER
Philip M. Lister
Executive Vice President and Chief Financial Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of Huntsman Corporation in the capacities indicated on the 21st day of February 2023.

/s/ PETER R. HUNTSMAN Peter R. Huntsman *Chairman, President and Chief Executive Officer (Principal Executive Officer)*	/s/ PHILIP M. LISTER Philip M. Lister *Executive Vice President and Chief Financial Officer (Principal Financial Officer)*
/s/ STEVEN C. JORGENSEN Steven C. Jorgensen *Vice President and Controller (Authorized Signatory and Principal Accounting Officer)*	/s/ DR. MARY C. BECKERLE Dr. Mary C. Beckerle *Director*
/s/ SONIA DULÁ Sonia Dulá *Chair of the Compensation Committee and Director*	/s/ CYNTHIA L. EGAN Cynthia L. Egan *Vice Chair, Lead Independent Director of the Board and Chair of the Nominating and Corporate Governance Committee*
/s/ CURTIS E. ESPELAND Curtis E. Espeland *Director*	/s/ DANIELE FERRARI Daniele Ferrari *Director*
/s/ JEANNE MCGOVERN Jeanne McGovern *Chair of the Audit Committee and Director*	/s/ JOSÉ MUÑOZ José Muñoz *Director*
/s/ DAVID B. SEWELL David B. Sewell *Director*	/s/ U.S. NAVY RETIRED VICE ADMIRAL JAN E. TIGHE U.S. Navy Retired Vice Admiral Jan E. Tighe *Chair of the Sustainability Committee and Director*

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of Huntsman International LLC in the capacities indicated on the 21st day of February 2023.

/s/ PETER R. HUNTSMAN Peter R. Huntsman *President, Chief Executive Officer and Manager (Principal Executive Officer)*	/s/ PHILIP M. LISTER Philip M. Lister *Executive Vice President, Chief Financial Officer and Manager (Principal Financial Officer)*
/s/STEVEN C. JORGENSEN Steven C. Jorgensen *Vice President and Controller (Authorized Signatory and Principal Accounting Officer)*	/s/ DAVID M. STRYKER David M. Stryker *Executive Vice President, General Counsel, Secretary and Manager*

HUNTSMAN CORPORATION AND SUBSIDIARIES
HUNTSMAN INTERNATIONAL LLC AND SUBSIDIARIES
INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and Board of Directors of Huntsman Corporation

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Huntsman Corporation and subsidiaries (the "Company") as of December 31, 2022 and 2021, the related consolidated statements of operations, comprehensive income, equity, and cash flows, for each of the three years in the period ended December 31, 2022, and the related notes and the schedule listed in the Index on page F-1 (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2022, in conformity with accounting principles generally accepted in the United States of America.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control—Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated February 21, 2023, expressed an unqualified opinion on the Company's internal control over financial reporting.

Basis for Opinion

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

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

Critical Audit Matter

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

Income Taxes—Realizability of Deferred Tax Assets—Refer to Notes 2 and 19 to the financial statements

Critical Audit Matter Description

The Company recognizes deferred income taxes for tax attributes and for differences between the financial statement and tax carrying amounts of assets and liabilities at enacted statutory tax rates in effect for the years in which the deferred tax liability or asset are expected to be settled or realized. A valuation allowance is provided to offset deferred tax assets if, based upon the available evidence, it is more likely than not that some or all of the deferred tax assets will not be realized. The Company files tax returns in multiple jurisdictions with complex tax laws and regulations. Valuation allowances are evaluated on a tax jurisdiction basis to analyze whether there is sufficient positive or negative evidence to support a change in judgment about the realizability of the related deferred tax assets for each jurisdiction. In evaluating the objective evidence that historical results provide, the Company considers cumulative income or losses during the applicable three-year period. Cumulative losses incurred over the three-year period limits the Company's ability to consider other evidence such as projections for the future. Changes in expected future taxable income and tax planning strategies in applicable jurisdictions affect the Company's assessment of the realization of deferred tax assets. The Company's judgments regarding valuation allowances are also influenced by factors outside of business results, including the costs and risks associated with any tax planning strategy associated with utilizing a deferred tax asset. The Company's valuation allowances as of December 31, 2022, were $169 million.

We identified management's determination that it is not more likely than not that sufficient taxable income will be generated in the future to realize some of its deferred tax assets as a critical audit matter because of the significant judgments and estimates management makes related to future taxable income. This required a high degree of auditor judgment and an increased extent of effort, including the need to involve our income tax specialists, when performing audit procedures to evaluate the reasonableness of management's estimates of future taxable income.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to estimated future taxable income and the determination of whether it is more likely than not that the deferred tax assets will be realized included the following, among others:

- We tested the effectiveness of controls over the valuation allowance for income taxes, including management's controls over the estimates of future taxable income and the determination of whether it is more likely than not that the deferred tax assets will be realized.

- With the assistance of our income tax specialists, we considered (1) the appropriateness of qualifying tax planning strategies, including that they were prudent, feasible and would more likely than not result in the realization of deferred tax assets and (2) the following sources of management's estimated future taxable income:

  – Estimates of future taxable income

  – Future reversals of existing temporary differences

  – Taxable income in historical periods (where carryback is permitted under the tax law)

- We tested the reasonableness of management's estimates of future taxable income by comparing the estimates to:

  – Historical taxable income

  – Internal communications to management and the Board of Directors

  – Forecasted information included in Company press releases as well as in analyst and industry reports for the Company and certain of its peer companies

- We evaluated whether the taxable income in prior carryback years was of the appropriate character and available under the tax law.

- We evaluated the reasonableness of the methods, assumptions, and judgments used by management to determine whether a valuation allowance was necessary.

/s/ DELOITTE & TOUCHE LLP

Houston, Texas
February 21, 2023

We have served as the Company's auditor since 1984.

HUNTSMAN CORPORATION AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
(In Millions, Except Share Amounts)

	December 31, 2022	December 31, 2021
ASSETS		
Current assets:		
Cash and cash equivalents(a)	$ 654	$ 1,041
Accounts and notes receivable (net of allowance for doubtful accounts of $14 and $12, respectively), ($272 and $324 pledged as collateral, respectively)(a)	813	988
Accounts receivable from affiliates	21	27
Inventories(a)	995	1,038
Receivable associated with the Albemarle Settlement	—	333
Other current assets	190	155
Current assets held for sale	472	346
Total current assets	3,145	3,928
Property, plant and equipment, net(a)	2,377	2,443
Investment in unconsolidated affiliates	425	470
Intangible assets, net	425	469
Goodwill	641	650
Deferred income taxes	147	180
Operating lease right-of-use assets	374	381
Other noncurrent assets(a)	686	689
Noncurrent assets held for sale	—	182
Total assets	$ 8,220	$ 9,392
LIABILITIES AND EQUITY		
Current liabilities:		
Accounts payable(a)	$ 907	$ 1,054
Accounts payable to affiliates	54	60
Accrued liabilities(a)	429	713
Current portion of debt(a)	66	12
Current operating lease liabilities(a)	51	49
Current liabilities held for sale	194	163
Total current liabilities	1,701	2,051
Long-term debt(a)	1,671	1,538
Deferred income taxes	250	161
Noncurrent operating lease liabilities(a)	336	346
Other noncurrent liabilities(a)	422	586
Noncurrent liabilities held for sale	—	151
Total liabilities	4,380	4,833
Commitments and contingencies (Notes 20 and 21)		
Equity		
Huntsman Corporation stockholders' equity:		
Common stock $0.01 par value, 1,200,000,000 shares authorized, 261,148,217 and 259,701,770 shares issued and 183,634,464 and 214,170,287 shares outstanding, respectively	3	3
Additional paid-in capital	4,156	4,102
Treasury stock, 77,513,753 and 45,531,489 shares, respectively	(1,937)	(934)
Unearned stock-based compensation	(35)	(25)
Retained earnings	2,705	2,435
Accumulated other comprehensive loss	(1,268)	(1,203)
Total Huntsman Corporation stockholders' equity	3,624	4,378
Noncontrolling interests in subsidiaries	216	181
Total equity	3,840	4,559
Total liabilities and equity	$ 8,220	$ 9,392

(a) At December 31, 2022 and December 31, 2021, respectively, $5 and $1 of cash and cash equivalents, $4 and $12 of accounts and notes receivable (net), $59 and $64 of inventories, $149 and $161 of property, plant and equipment (net), $29 and $23 of other noncurrent assets, $114 and $146 of accounts payable, $12 and $13 of accrued liabilities, $9 and $10 of current portion of debt, $9 and $6 of current operating lease liabilities, $26 and $35 of long-term debt, $19 and $20 of noncurrent operating lease and $25 and $46 of other noncurrent liabilities from consolidated variable interest entities are included in the respective Balance Sheets captions above. See "Note 8. Variable Interest Entities." These assets can only be used to settle obligations of the variable interest entities, and creditors of these liabilities do not have recourse to our general credit.

See accompanying notes to consolidated financial statements.

HUNTSMAN CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS
(In Millions, Except Share and Per Share Amounts)

	Year ended December 31, 2022	2021	2020
Revenues:			
Trade sales, services and fees, net	$ 7,797	$ 7,473	$ 5,306
Related party sales	226	197	115
Total revenues	8,023	7,670	5,421
Cost of goods sold	6,477	6,086	4,444
Gross profit	1,546	1,584	977
Operating expenses:			
Selling, general and administrative	711	739	670
Research and development	125	135	121
Restructuring, impairment and plant closing costs	86	40	41
Gain on sale of India-based DIY business	—	(28)	(247)
Other operating income, net	(48)	(33)	(40)
Total operating expenses	874	853	545
Operating income	672	731	432
Interest expense, net	(62)	(67)	(86)
Equity in income of investment in unconsolidated affiliates	67	143	42
Fair value adjustments to Venator investment, net and related loss on disposal	(12)	(28)	(88)
Loss on early extinguishment of debt	—	(27)	—
(Costs) income associated with the Albemarle Settlement, net	(3)	465	—
Other income, net	35	29	31
Income from continuing operations before income taxes	697	1,246	331
Income tax expense	(186)	(191)	(42)
Income from continuing operations	511	1,055	289
Income from discontinued operations, net of tax	12	49	777
Net income	523	1,104	1,066
Net income attributable to noncontrolling interests	(63)	(59)	(32)
Net income attributable to Huntsman Corporation	$ 460	$ 1,045	$ 1,034
Basic income per share:			
Income from continuing operations attributable to Huntsman Corporation common stockholders	$ 2.23	$ 4.55	$ 1.17
Income from discontinued operations attributable to Huntsman Corporation common stockholders, net of tax	0.06	0.22	3.52
Net income attributable to Huntsman Corporation common stockholders	$ 2.29	$ 4.77	$ 4.69
Weighted average shares	201.0	219.2	220.6
Diluted income per share:			
Income from continuing operations attributable to Huntsman Corporation common stockholders	$ 2.21	$ 4.50	$ 1.16
Income from discontinued operations attributable to Huntsman Corporation common stockholders, net of tax	0.06	0.22	3.50
Net income attributable to Huntsman Corporation common stockholders	$ 2.27	$ 4.72	$ 4.66
Weighted average shares	203.0	221.4	221.9
Amounts attributable to Huntsman Corporation:			
Income from continuing operations	$ 448	$ 996	$ 257
Income from discontinued operations, net of tax	12	49	777
Net income	$ 460	$ 1,045	$ 1,034

See accompanying notes to consolidated financial statements.

HUNTSMAN CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(In Millions)

	Year ended December 31,		
	2022	**2021**	**2020**
Net income	$ 523	$ 1,104	$ 1,066
Other comprehensive (loss) income, net of tax:			
Foreign currency translations adjustments	(228)	(92)	41
Pension and other postretirement benefits adjustments	158	240	(19)
Other, net	(7)	2	—
Other comprehensive (loss) income, net of tax	(77)	150	22
Comprehensive income	446	1,254	1,088
Comprehensive income attributable to noncontrolling interests	(51)	(66)	(38)
Comprehensive income attributable to Huntsman Corporation	$ 395	$ 1,188	$ 1,050

See accompanying notes to consolidated financial statements.

HUNTSMAN CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF EQUITY
(In Millions, Except Share Amounts)

	Huntsman Corporation Stockholders' Equity								
	Shares Common stock	Common stock	Additional paid-in capital	Treasury stock	Unearned stock-based compensation	Retained earnings	Accumulated other comprehensive loss	Noncontrolling interests in subsidiaries	Total equity
Beginning balance, January 1, 2020	224,295,868	$ 3	$ 4,008	$ (635)	$ (17)	$ 690	$ (1,362)	$ 137	$ 2,824
Net income	—	—	—	—	—	1,034	—	32	1,066
Other comprehensive income	—	—	—	—	—	—	16	6	22
Issuance of nonvested stock awards	—	—	18	—	(18)	—	—	—	—
Vesting of stock awards	960,406	—	5	—	—	—	—	—	5
Recognition of stock-based compensation	—	—	7	—	16	—	—	—	23
Repurchase and cancellation of stock awards	(287,247)	—	—	—	—	(8)	—	—	(8)
Stock options exercised	441,754	—	10	—	—	(7)	—	—	3
Treasury stock repurchased	(5,364,519)	—	—	(96)	—	—	—	—	(96)
Distributions to noncontrolling interests	—	—	—	—	—	—	—	(21)	(21)
Dividends declared on common stock ($0.65 per share)	—	—	—	—	—	(145)	—	—	(145)
Balance, December 31, 2020	220,046,262	3	4,048	(731)	(19)	1,564	(1,346)	154	3,673
Net income	—	—	—	—	—	1,045	—	59	1,104
Other comprehensive income	—	—	—	—	—	—	143	7	150
Issuance of nonvested stock awards	—	—	26	—	(26)	—	—	—	—
Vesting of stock awards	678,400	—	5	—	—	—	—	—	5
Recognition of stock-based compensation	—	—	6	—	20	—	—	—	26
Repurchase and cancellation of stock awards	(238,339)	—	—	—	—	(7)	—	—	(7)
Stock options exercised	738,362	—	17	—	—	(7)	—	—	10
Treasury stock repurchased	(7,054,398)	—	—	(203)	—	—	—	—	(203)
Distributions to noncontrolling interests	—	—	—	—	—	—	—	(39)	(39)
Dividends declared on common stock ($0.75 per share)	—	—	—	—	—	(160)	—	—	(160)
Balance, December 31, 2021	214,170,287	3	4,102	(934)	(25)	2,435	(1,203)	181	4,559
Net income	—	—	—	—	—	460	—	63	523
Other comprehensive loss	—	—	—	—	—	—	(65)	(12)	(77)
Issuance of nonvested stock awards	—	—	32	—	(32)	—	—	—	—
Vesting of stock awards	1,341,787	—	7	—	—	—	—	—	7
Recognition of stock-based compensation	—	—	3	—	22	—	—	—	25
Repurchase and cancellation of stock awards	(366,199)	—	—	—	—	(14)	—	—	(14)
Stock options exercised	470,853	—	12	—	—	(6)	—	—	6
Treasury stock repurchased	(31,982,264)	—	—	(1,003)	—	—	—	—	(1,003)
Distributions to noncontrolling interests	—	—	—	—	—	—	—	(16)	(16)
Dividends declared on common stock ($0.85 per share)	—	—	—	—	—	(170)	—	—	(170)
Balance, December 31, 2022	183,634,464	$ 3	$ 4,156	$ (1,937)	$ (35)	$ 2,705	$ (1,268)	$ 216	$ 3,840

See accompanying notes to consolidated financial statements.

HUNTSMAN CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In Millions)

	Year ended December 31,		
	2022	2021	2020
Operating activities:			
Net income	$ 523	$ 1,104	$ 1,066
Less: Income from discontinued operations, net of tax	(12)	(49)	(777)
Income from continuing operations	511	1,055	289
Adjustments to reconcile income from continuing operations to net cash provided by operating activities from continuing operations:			
Equity in income of investment in unconsolidated affiliates	(67)	(143)	(42)
Unrealized losses on fair value adjustments to Venator investment, net and related loss on disposal	12	28	88
Cash received from return on investment in unconsolidated subsidiary	71	57	19
Depreciation and amortization	281	278	267
Noncash lease expense	63	64	57
Gain on disposal of businesses/assets	—	(28)	(281)
Loss on early extinguishment of debt	—	27	—
Noncash restructuring and impairment charges	6	18	7
Deferred income taxes	89	(39)	175
Stock-based compensation	29	30	26
Other, net	(39)	(11)	5
Changes in operating assets and liabilities:			
Accounts and notes receivable	146	(313)	99
Inventories	(6)	(342)	130
Receivable associated with the Albemarle Settlement	333	(333)	—
Other current assets	(44)	39	(66)
Other noncurrent assets	(52)	(189)	(55)
Accounts payable	(84)	346	11
Accrued liabilities	(304)	296	(132)
Taxes paid on Chemical Intermediates Businesses	—	—	(231)
Other noncurrent liabilities	(53)	75	(135)
Net cash provided by operating activities from continuing operations	892	915	231
Net cash provided by operating activities from discontinued operations	22	37	22
Net cash provided by operating activities	914	952	253
Investing activities:			
Capital expenditures	(272)	(326)	(237)
Cash received from sale of businesses	—	43	2,181
Acquisition of businesses, net of cash acquired	—	(245)	(650)
Cash received from the sale of Venator shares	—	—	99
Proceeds from sale of assets	—	—	75
Insurance proceeds for recovery of property damage	5	8	—
Other	7	12	6
Net cash (used in) provided by investing activities from continuing operations	(260)	(508)	1,474
Net cash used in investing activities from discontinued operations	(19)	(16)	(11)
Net cash (used in) provided by investing activities	(279)	(524)	1,463
Financing activities:			
Net borrowings (repayments) on revolving loan facilities	219	(8)	(203)
Proceeds from issuance of long-term debt	—	447	—
Repayments of long-term debt	(12)	(990)	(21)
Repayments of short-term debt	—	—	(109)
Repayments of notes payable	—	—	(32)
Costs of early extinguishment of debt	—	(26)	—
Dividends paid to common stockholders	(171)	(159)	(144)
Distributions paid to noncontrolling interests	(16)	(40)	(44)
Repurchase of common stock	(1,005)	(200)	(96)
Repurchase and cancellation of stock awards	(14)	(7)	(8)
Proceeds from issuance of common stock	6	10	3
Other	(1)	(4)	(1)
Net cash used in financing activities	(994)	(977)	(655)
Effect of exchange rate changes on cash	(28)	(3)	7
(Decrease) increase in cash and cash equivalents	(387)	(552)	1,068
Cash and cash equivalents from continuing operations at beginning of period	1,041	1,593	525
Cash and cash equivalents at end of period	$ 654	$ 1,041	$ 1,593
Supplemental cash flow information:			
Cash paid for interest	$ 66	$ 82	$ 90
Cash paid for income taxes	194	106	316

As of December 31, 2022, 2021 and 2020, the amount of capital expenditures in accounts payable was $32 million, $55 million and $70 million, respectively. For the years ended December 31, 2021 and 2020, the amounts of cash paid for taxes in connection with the sale of the Chemical Intermediates Businesses and the India-based DIY business were nil and $231 million, respectively, and $3 million and $26 million, respectively.

See accompanying notes to consolidated financial statements.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Members and Board of Managers of Huntsman International LLC

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Huntsman International LLC and subsidiaries ("Huntsman International") as of December 31, 2022 and 2021, the related consolidated statements of operations, comprehensive income, equity, and cash flows, for each of the three years in the period ended December 31, 2022, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of Huntsman International as of December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2022, in conformity with accounting principles generally accepted in the United States of America.

Basis for Opinion

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

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

Critical Audit Matter

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

Income Taxes—Realizability of Deferred Tax Assets—Refer to Notes 2 and 19 to the financial statements

Critical Audit Matter Description

Huntsman International recognizes deferred income taxes for tax attributes and for differences between the financial statement and tax carrying amounts of assets and liabilities at enacted statutory tax rates in effect for the years in which the deferred tax liability or asset are expected to be settled or realized. A valuation allowance is provided to offset deferred tax assets if, based upon the available evidence, it is more likely than not that some or all of the deferred tax assets will not be realized. Huntsman International files tax returns in multiple jurisdictions with complex tax laws and regulations. Valuation allowances are evaluated on a tax jurisdiction basis to analyze whether there is sufficient positive or negative evidence to support a change in judgment about the realizability of the related deferred tax assets for each jurisdiction. In evaluating the objective evidence that historical results provide, Huntsman International considers cumulative income or losses during the applicable three-year period. Cumulative losses incurred over the three-year period limits Huntsman International's ability to consider other evidence such as projections for the future. Changes in expected future taxable income and tax planning strategies in applicable jurisdictions affect Huntsman International's assessment of the realization of deferred tax assets. Huntsman International's judgments regarding valuation allowances are also influenced by factors outside of business results, including the costs and risks associated with any tax planning strategy associated with utilizing a deferred tax asset. Huntsman International's valuation allowances as of December 31, 2022, were $169 million.

We identified management's determination that it is not more likely than not that sufficient taxable income will be generated in the future to realize some of its deferred tax assets as a critical audit matter because of the significant judgments and estimates management makes related to future taxable income. This required a high degree of auditor judgment and an increased extent of effort, including the need to involve our income tax specialists, when performing audit procedures to evaluate the reasonableness of management's estimates of future taxable income.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to estimated future taxable income and the determination of whether it is more likely than not that the deferred tax assets will be realized included the following, among others:

- We tested the effectiveness of controls over the valuation allowance for income taxes, including management’s controls over the estimates of future taxable income and the determination of whether it is more likely than not that the deferred tax assets will be realized.

- With the assistance of our income tax specialists, we considered (1) the appropriateness of qualifying tax planning strategies, including that they were prudent, feasible and would more likely than not result in the realization of deferred tax assets and (2) the following sources of management’s estimated future taxable income:

  – Estimates of future taxable income

  – Future reversals of existing temporary differences

  – Taxable income in historical periods (where carryback is permitted under the tax law)

- We tested the reasonableness of management’s estimates of future taxable income by comparing the estimates to:

  – Historical taxable income

  – Internal communications to management and the Board of Managers

  – Forecasted information included in Huntsman International’s press releases as well as in analyst and industry reports for Huntsman International and certain of its peer companies

- We evaluated whether the taxable income in prior carryback years was of the appropriate character and available under the tax law.

- We evaluated the reasonableness of the methods, assumptions, and judgments used by management to determine whether a valuation allowance was necessary.

/s/ DELOITTE & TOUCHE LLP

Houston, Texas
February 21, 2023

We have served as Huntsman International’s auditor since 1984.

HUNTSMAN INTERNATIONAL LLC AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
(In Millions, Except Unit Amounts)

	December 31, 2022	December 31, 2021
ASSETS		
Current assets:		
Cash and cash equivalents(a)	$ 654	$ 1,039
Accounts and notes receivable (net of allowance for doubtful accounts of $14 and $12, respectively), ($272 and $324 pledged as collateral, respectively)(a)	813	988
Accounts receivable from affiliates	21	269
Inventories(a)	995	1,038
Receivable associated with the Albemarle Settlement	—	333
Other current assets	196	153
Current assets held for sale	472	346
Total current assets	3,151	4,166
Property, plant and equipment, net(a)	2,377	2,443
Investment in unconsolidated affiliates	425	470
Intangible assets, net	425	469
Goodwill	641	650
Deferred income taxes	147	180
Operating lease right-of-use assets	374	381
Other noncurrent assets(a)	686	690
Noncurrent assets held for sale	—	182
Total assets	$ 8,226	$ 9,631
LIABILITIES AND EQUITY		
Current liabilities:		
Accounts payable(a)	$ 907	$ 1,051
Accounts payable to affiliates	54	62
Accrued liabilities(a)	427	704
Current portion of debt(a)	66	12
Current operating lease liabilities(a)	51	49
Current liabilities held for sale	194	163
Total current liabilities	1,699	2,041
Long-term debt(a)	1,671	1,538
Deferred income taxes	254	163
Noncurrent operating lease liabilities(a)	336	346
Other noncurrent liabilities(a)	414	573
Noncurrent liabilities held for sale	—	151
Total liabilities	4,374	4,812
Commitments and contingencies (Notes 20 and 21)		
Equity		
Huntsman International LLC members' equity:		
Members' equity, 2,728 units issued and outstanding	3,759	3,732
Retained earnings	1,130	2,093
Accumulated other comprehensive loss	(1,253)	(1,187)
Total Huntsman International LLC members' equity	3,636	4,638
Noncontrolling interests in subsidiaries	216	181
Total equity	3,852	4,819
Total liabilities and equity	$ 8,226	$ 9,631

(a) At December 31, 2022 and December 31, 2021, respectively, $5 and $1 of cash and cash equivalents, $4 and $12 of accounts and notes receivable (net), $59 and $64 of inventories, $149 and $161 of property, plant and equipment (net), $29 and $23 each of other noncurrent assets, $114 and $146 of accounts payable, $12 and $13 of accrued liabilities, $9 and $10 of current portion of debt, $9 and $6 of current operating lease liabilities, $26 and $35 of long-term debt, $19 and $20 of noncurrent operating lease and $25 and $46 of other noncurrent liabilities from consolidated variable interest entities are included in the respective Balance Sheets captions above. See "Note 8. Variable Interest Entities." These assets can only be used to settle obligations of the variable interest entities, and creditors of these liabilities do not have recourse to our general credit.

See accompanying notes to consolidated financial statements.

HUNTSMAN INTERNATIONAL LLC AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS
(In Millions)

	Year ended December 31,		
	2022	**2021**	**2020**
Revenues:			
Trade sales, services and fees, net	$ 7,797	$ 7,473	$ 5,306
Related party sales	226	197	115
Total revenues	8,023	7,670	5,421
Cost of goods sold	6,477	6,086	4,444
Gross profit	1,546	1,584	977
Operating expenses:			
Selling, general and administrative	707	732	664
Research and development	125	135	121
Restructuring, impairment and plant closing costs	86	40	41
Gain on sale of India-based DIY business	—	(28)	(247)
Other operating income, net	(48)	(33)	(40)
Total operating expenses	870	846	539
Operating income	676	738	438
Interest expense, net	(62)	(67)	(88)
Equity in income of investment in unconsolidated affiliates	67	143	42
Fair value adjustments to Venator investment, net and related loss on disposal	(12)	(28)	(88)
Loss on early extinguishment of debt	—	(27)	—
(Costs) income associated with the Albemarle Settlement, net	(3)	465	—
Other income, net	34	26	28
Income from continuing operations before income taxes	700	1,250	332
Income tax expense	(188)	(192)	(42)
Income from continuing operations	512	1,058	290
Income from discontinued operations, net of tax	12	49	777
Net income	524	1,107	1,067
Net income attributable to noncontrolling interests	(63)	(59)	(32)
Net income attributable to Huntsman International LLC	$ 461	$ 1,048	$ 1,035

See accompanying notes to consolidated financial statements.

HUNTSMAN INTERNATIONAL LLC AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(In Millions)

	Year ended December 31,		
	2022	**2021**	**2020**
Net income	$ 524	$ 1,107	$ 1,067
Other comprehensive (loss) income, net of tax:			
Foreign currency translations adjustment	(229)	(91)	41
Pension and other postretirement benefits adjustments	158	242	(16)
Other, net	(7)	2	—
Other comprehensive (loss) income, net of tax	(78)	153	25
Comprehensive income	446	1,260	1,092
Comprehensive income attributable to noncontrolling interests	(51)	(66)	(38)
Comprehensive income attributable to Huntsman International LLC	$ 395	$ 1,194	$ 1,054

See accompanying notes to consolidated financial statements.

HUNTSMAN INTERNATIONAL LLC AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF EQUITY
(In Millions, Except Unit Amounts)

	Huntsman International LLC Members				Noncontrolling interests in subsidiaries	Total equity
	Members' equity		Retained earnings	Accumulated other comprehensive loss		
	Units	Amount				
Beginning balance, January 1, 2020	2,728	$ 3,675	$ 312	$ (1,352)	$ 137	$ 2,772
Net income	—	—	1,035	—	32	1,067
Other comprehensive income	—	—	—	19	6	25
Dividends paid to parent	—	—	(144)	—	—	(144)
Contribution from parent	—	26	—	—	—	26
Distributions to noncontrolling interests	—	—	—	—	(21)	(21)
Balance, December 31, 2020	2,728	3,701	1,203	(1,333)	154	3,725
Net income	—	—	1,048	—	59	1,107
Other comprehensive income	—	—	—	146	7	153
Dividends paid to parent	—	—	(158)	—	—	(158)
Contribution from parent	—	31	—	—	—	31
Distributions to noncontrolling interests	—	—	—	—	(39)	(39)
Balance, December 31, 2021	2,728	3,732	2,093	(1,187)	181	4,819
Net income	—	—	461	—	63	524
Other comprehensive loss	—	—	—	(66)	(12)	(78)
Dividends paid to parent	—	—	(168)	—	—	(168)
Contribution from parent	—	27	—	—	—	27
Distributions to noncontrolling interests	—	—	—	—	(16)	(16)
Distribution to parent	—	—	(1,256)	—	—	(1,256)
Balance, December 31, 2022	2,728	$ 3,759	$ 1,130	$ (1,253)	$ 216	$ 3,852

See accompanying notes to consolidated financial statements.

HUNTSMAN INTERNATIONAL LLC AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In Millions)

	Year ended December 31, 2022	2021	2020
Operating activities:			
Net income	$ 524	$ 1,107	$ 1,067
Less: Income from discontinued operations, net of tax	(12)	(49)	(777)
Income from continuing operations	512	1,058	290
Adjustments to reconcile income from continuing operations to net cash provided by operating activities from continuing operations:			
Equity in income of investment in unconsolidated affiliates	(67)	(143)	(42)
Unrealized losses on fair value adjustments to Venator investment, net and related loss on disposal	12	28	88
Cash received from return on investment in unconsolidated subsidiary	71	57	19
Depreciation and amortization	281	278	267
Noncash lease expense	63	64	57
Gain on disposal of businesses/assets	—	(28)	(281)
Loss on early extinguishment of debt	—	27	—
Noncash restructuring and impairment charges	6	18	7
Deferred income taxes	91	(40)	175
Noncash compensation	27	29	25
Other, net	(37)	(13)	5
Changes in operating assets and liabilities:			
Accounts and notes receivable	146	(313)	99
Inventories	(6)	(342)	130
Receivable associated with the Albemarle Settlement	333	(333)	—
Other current assets	(51)	47	(66)
Other noncurrent assets	(52)	(189)	(55)
Accounts payable	(84)	343	9
Accrued liabilities	(297)	292	(132)
Taxes paid on sale of Chemical Intermediates Businesses	—	—	(231)
Other noncurrent liabilities	(53)	78	(131)
Net cash provided by operating activities from continuing operations	895	918	233
Net cash provided by operating activities from discontinued operations	22	37	22
Net cash provided by operating activities	917	955	255
Investing activities:			
Capital expenditures	(272)	(326)	(237)
Cash received from sale of businesses	—	43	2,181
Acquisition of businesses, net of cash acquired	—	(245)	(650)
Cash received from the sale of Venator shares	—	—	99
(Increase) decrease in receivable from affiliate	(1,017)	(203)	273
Proceeds from sale of assets	—	—	75
Insurance proceeds for recovery of property damage	5	8	—
Other, net	7	13	7
Net cash (used in) provided by investing activities from continuing operations	(1,277)	(710)	1,748
Net cash used in investing activities from discontinued operations	(19)	(16)	(11)
Net cash (used in) provided by investing activities	(1,296)	(726)	1,737
Financing activities:			
Net borrowings (repayments) on revolving loan facilities	219	(8)	(203)
Proceeds from issuance of long-term debt	—	447	—
Repayments of long-term debt	(12)	(990)	(21)
Repayments of short-term debt	—	—	(109)
Repayments of notes payable to affiliate	—	—	(380)
Repayments of notes payable	—	—	(32)
Costs of early extinguishment of debt	—	(26)	—
Dividends paid to parent	(168)	(158)	(144)
Distributions paid to noncontrolling interests	(16)	(40)	(44)
Other	(1)	(3)	—
Net cash provided by (used in) financing activities	22	(778)	(933)
Effect of exchange rate changes on cash	(28)	(3)	7
(Decrease) increase in cash and cash equivalents	(385)	(552)	1,066
Cash and cash equivalents from continuing operations at beginning of period	1,039	1,591	525
Cash and cash equivalents at end of period	$ 654	$ 1,039	$ 1,591
Supplemental cash flow information:			
Cash paid for interest	$ 66	$ 82	$ 90
Cash paid for income taxes	194	106	316

As of December 31, 2022, 2021 and 2020, the amount of capital expenditures in accounts payable was $32 million, $55 million and $70 million, respectively. For the years ended December 31, 2021 and 2020, the amounts of cash paid for taxes in connection with the sale of the Chemical Intermediates Businesses and the India-based DIY business were nil and $231 million, respectively, and $3 million and $26 million, respectively.

See accompanying notes to consolidated financial statements.

HUNTSMAN CORPORATION AND SUBSIDIARIES
HUNTSMAN INTERNATIONAL LLC AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. GENERAL

Definitions

For convenience in this report, the terms "Company," "our" or "we" may be used to refer to Huntsman Corporation and, unless the context otherwise requires, its subsidiaries and predecessors. In this report, "Huntsman International" refers to Huntsman International LLC (our wholly-owned subsidiary) and, unless the context otherwise requires, its subsidiaries; "AAC" refers to Arabian Amines Company, our consolidated manufacturing joint venture with the Zamil Group; "HPS" refers to Huntsman Polyurethanes Shanghai Ltd. (our consolidated splitting joint venture with Shanghai Chlor-Alkali Chemical Company, Ltd); and "SLIC" refers to Shanghai Liengheng Isocyanate Company (our unconsolidated manufacturing joint venture with BASF and three Chinese chemical companies).

In this report, we may use, without definition, the common names of competitors or other industry participants. We may also use the common names or abbreviations for certain chemicals or products.

Description of Business

We are a global manufacturer of diversified organic chemical products. We operate in three segments: Polyurethanes, Performance Products and Advanced Materials. Our products comprise many different chemicals and formulations, which we market globally to a wide range of consumers that consist primarily of industrial and building product manufacturers. Our products are used in a broad range of applications, including those in the adhesives, aerospace, automotive, coatings and construction, construction products, durable and non-durable consumer products, electronics, insulation, packaging, power generation and refining. Many of our products offer effects such as premium insulation in homes and buildings and the light weighting of airplanes and automobiles that help conserve energy. We are a leading global producer in many of our key product lines, including MDI, amines, maleic anhydride and epoxy-based polymer formulations.

Our company, a Delaware corporation, was formed in 2004 to hold the Huntsman businesses, which were founded by Jon M. Huntsman. Mr. Huntsman founded the predecessor to our Company in 1970 as a small polystyrene plastics packaging company. Since then, we have transformed through a series of acquisitions and divestitures and now own a global portfolio of businesses with a primary focus on improving energy efficiency. On August 9, 2022, we entered into a definitive agreement to sell our Textile Effects Business to Archroma. We expect the transaction to close on February 28, 2023. Beginning in the third quarter of 2022, the results of our Textile Effects Business are reported as discontinued operations for all periods presented. For more information, see "Note 4. Discontinued Operations and Business Dispositions—Discontinued Operations—Sale of Textile Effects Business." On January 3, 2020, we completed the sale of our Chemical Intermediates Businesses to Indorama. For more information, see "Note 4. Discontinued Operations and Business Dispositions—Discontinued Operations—Sale of Chemical Intermediates Businesses." We operate all of our businesses through Huntsman International, our wholly-owned subsidiary. Huntsman International is a Delaware limited liability company and was formed in 1999.

Huntsman Corporation and Huntsman International Financial Statements

Except where otherwise indicated, these notes relate to the consolidated financial statements for both our Company and Huntsman International. The differences between our consolidated financial statements and Huntsman International's consolidated financial statements relate primarily to different capital structures and purchase accounting recorded at our Company for the 2003 step-acquisition of Huntsman International Holdings LLC, the former parent company of Huntsman International that was merged into Huntsman International in 2005.

Huntsman International declared and paid to us a distribution in the form of certain affiliate accounts receivable in the fourth quarter of 2022.

Recent Developments

Dividend Increase

On February 17, 2023, our Board of Directors declared a $0.2375 per share cash dividend on our common stock. This represents an approximate 12% increase from the previous dividend.

European Restructuring Program

In early November 2022, we announced our commitment and specific plans to further realign our cost structure beyond the current in-progress cost optimization programs with additional restructuring in Europe. The new program includes exiting and consolidating certain facilities, workforce relocation to lower cost locations and further personnel rationalization. For more information, see "Note 12. Restructuring, Impairment and Plant Closing Costs."

Other Significant Developments During 2022

Other significant developments that occurred during 2022 were as follows:

- On August 9, 2022, we entered into a definitive agreement to sell our Textile Effects Business to Archroma for a purchase price of $593 million in cash plus the assumption of underfunded pension liabilities, and we expect the net after tax cash proceeds to be approximately $540 million before fees and subject to certain customary purchase price adjustments as set forth in the purchase agreement. We expect the transaction to close on February 28, 2023. Beginning in the third quarter of 2022, we reported the results of our Textile Effects Business as discontinued operations. For more information, see "Note 4. Discontinued Operations and Business Dispositions—Discontinued Operations—Sale of Textile Effects Business."

- On May 20, 2022, Huntsman International entered into the 2022 Revolving Credit Facility. Borrowings will bear interest at the rates specified in the credit agreement governing the 2022 Revolving Credit Facility, which will vary based on the type of loan and Huntsman International's debt ratings. Under the credit agreement, the interest rate margin and the commitment fee rates are also subject to adjustments based on the Company's performance on specified sustainability target thresholds with respect to annual percentage reduction in operational greenhouse gas emissions intensity and annual percentage reduction in water consumption intensity. Unless previously terminated in accordance with its terms, the credit agreement will mature in May 2027. Huntsman International may increase the 2022 Credit Revolving Facility commitments up to an additional $500 million, subject to the satisfaction of certain conditions. See "Note 14. Debt—Direct and Subsidiary Debt—Revolving Credit Facility."

- On April 29, 2022, a New Orleans jury awarded us approximately $94 million in our long-running court battle against Praxair/Linde, one of the industrial gas suppliers to our Geismar, Louisiana MDI manufacturing site. The case was filed after Praxair refused to properly maintain its own Geismar facility and then repeatedly failed to supply our requirements for industrial gas needed to manufacture MDI under long-term supply contracts that expired in 2013. After adding mandatory pre-judgment and post-judgment interest to the award, we expect damages to exceed $125 million before deducting for taxes and legal fees. The award is subject to a pending appeal, and if affirmed, we expect to receive net proceeds of approximately $50 million to $60 million. We have not yet recognized the award in our consolidated statements of operations.

- On March 25, 2022, our Board of Directors increased the authorization of our existing share repurchase program from $1 billion to $2 billion. During the year ended December 31, 2022, we repurchased 31,982,264 shares of our common stock for approximately $1,003 million, including commissions, under this share repurchase program. As of December 31, 2022, approximately $897 million of share repurchases remain under this share repurchase program. See "Note 22. Huntsman Corporation Stockholders' Equity—Share Repurchase Program."

- On February 14, 2022, our Board of Directors declared a $0.2125 per share cash dividend on our common stock. This represents a 13% increase from the previous dividend.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Carrying Value of Long-Lived Assets

We review long-lived assets 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 upon current and anticipated undiscounted cash flows, and we recognize an impairment when such estimated cash flows are less than the carrying value of the asset. Measurement of the amount of impairment, if any, is based upon the difference between carrying value and fair value. Fair value is generally estimated by discounting estimated future cash flows using a discount rate commensurate with the risks involved or selling price of assets held for sale.

Cash and Cash Equivalents

We consider cash in checking accounts and cash in short-term highly liquid investments with original maturities of three months or less at the date of purchase to be cash and cash equivalents.

Cost of Goods Sold

We classify the costs of manufacturing and distributing our products as cost of goods sold. Manufacturing costs include variable costs, primarily raw materials and energy, and fixed expenses directly associated with production. Manufacturing costs also include, among other things, plant site operating costs and overhead (including depreciation), production planning and logistics costs, repair and maintenance costs, plant site purchasing costs, and engineering and technical support costs. Distribution, freight and warehousing costs are also included in cost of goods sold.

Derivatives and Hedging Activities

All derivatives, whether designated in hedging relationships or not, are recorded on our balance sheets at fair value. If the derivative is designated as a fair value hedge, the changes in the fair value of the derivative and the hedged items are recognized in earnings. If the derivative is designated as a cash flow hedge, changes in the fair value of the derivative are recorded in accumulated other comprehensive loss, to the extent effective, and will be recognized in the income statement when the hedged item affects earnings. Changes in the fair value of the hedge in the net investment of certain international operations are recorded in other comprehensive income (loss), to the extent effective. The effectiveness of a cash flow hedging relationship is established at the inception of the hedge, and after inception we perform effectiveness assessments at least every three months. A derivative designated as a cash flow hedge is determined to be effective if the change in value of the hedge divided by the change in value of the hedged item is within a range of 80% to 125%. Hedge ineffectiveness in a cash flow hedge occurs only if the cumulative gain or loss on the derivative hedging instrument exceeds the cumulative change in the expected future cash flows on the hedged transaction. For a derivative that does not qualify or has not been designated as a hedge, changes in fair value are recognized in earnings.

Environmental Expenditures

Environmental related restoration and remediation costs are recorded as liabilities when site restoration and environmental remediation and clean-up obligations are either known or considered probable and the related costs can be reasonably estimated. Other environmental expenditures that are principally maintenance or preventative in nature are recorded when expended and incurred and are expensed or capitalized as appropriate. See "Note 21. Environmental, Health and Safety Matters."

Equity Method Investments

We account for our equity investments where we own a non-controlling interest, but exercise significant influence, under the equity method of accounting. Under the equity method of accounting, our original cost of the investment is adjusted for our share of equity in the earnings of the equity investee and reduced by dividends and distributions of capital received, unless the fair value option is elected, in which case the investment balance is marked to fair value each reporting period and the impact of changes in fair value of the equity investment are reported in earnings.

Foreign Currency Translation

The accounts of our operating subsidiaries outside of the U.S., unless they are operating in highly inflationary economic environments, consider the functional currency to be the currency of the economic environment in which they operate. Accordingly, assets and liabilities are translated at rates prevailing at the balance sheet date. Revenues, expenses, gains and losses are translated at a weighted average rate for the period. Cumulative translation adjustments are recorded to equity as a component of accumulated other comprehensive loss.

If a subsidiary operates in an economic environment that is considered to be highly inflationary (100% cumulative inflation over a three-year period), the U.S. dollar is considered to be the functional currency and gains and losses from remeasurement to the U.S. dollar from the local currency are included in the statement of operations. Where a subsidiary's operations are effectively run, managed, financed and contracted in U.S. dollars, such as certain finance subsidiaries outside of the U.S., the U.S. dollar is considered to be the functional currency.

Foreign currency transaction gains and losses are recorded in other operating income, net in our consolidated statements of operations and were gains of $18 million, $9 million and $3 million for the years ended December 31, 2022, 2021 and 2020, respectively.

Income Taxes

We use the asset and liability method of accounting for income taxes. Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial and tax reporting purposes. We evaluate deferred tax assets to determine whether it is more likely than not that they will be realized. Valuation allowances are reviewed on a tax jurisdiction basis to analyze whether there is sufficient positive or negative evidence to support a change in judgment about the realizability of the related deferred tax assets for each jurisdiction. These conclusions require significant judgment. In evaluating the objective evidence that historical results provide, we consider the cyclicality of businesses and cumulative income or losses during the applicable period. Cumulative losses incurred over the period limits our ability to consider other subjective evidence such as our projections for the future. Changes in expected future income in applicable jurisdictions could affect the realization of deferred tax assets in those jurisdictions.

Accounting for uncertainty in income taxes prescribes a recognition threshold and measurement attribute for the financial statement recognition and measurement of a tax position taken or expected to be taken in a tax return. The application of income tax law is inherently complex. We are required to determine if an income tax position meets the criteria of more-likely-than-not to be realized based on the merits of the position under tax law, in order to recognize an income tax benefit. This requires us to make significant judgments regarding the merits of income tax positions and the application of income tax law. Additionally, if a tax position meets the recognition criteria of more-likely-than-not we are required to make judgments and apply assumptions to measure the amount of the tax benefits to recognize. These judgments are based on the probability of the amount of tax benefits that would be realized if the tax position was challenged by the taxing authorities. Interpretations and guidance surrounding income tax laws and regulations change over time. As a consequence, changes in assumptions and judgments can materially affect amounts recognized in our consolidated financial statements. See "Note 19. Income Taxes."

Intangible Assets and Goodwill

Intangible assets are stated at cost (fair value at the time of acquisition) and are amortized using the straight-line method over the estimated useful lives or the life of the related agreement as follows:

	In years
Patents and technology	5 - 30
Trademarks	9 - 30
Licenses and other agreements	5 - 15
Other intangibles	5 - 20

Goodwill represents costs in excess of fair values assigned to the underlying net assets of acquired businesses. Goodwill is not subject to any method of amortization, but is tested for impairment annually (at the beginning of the third quarter) and when events and circumstances change that would more likely than not reduce the fair value of a reporting unit below its carrying amount. When the fair value is less than the carrying value of the related reporting unit, we are required to reduce the amount of goodwill through a charge to earnings. Fair value is estimated using the market approach, as well as the income approach based on discounted cash flow projections. Goodwill has been assigned to reporting units for purposes of impairment testing.

During 2022, goodwill decreased by approximately $9 million due to changes in foreign currency exchange rates. During 2021, goodwill increased by approximately $115 million due to the addition of our acquired businesses, as well as a net increase of approximately $2 million due to changes in foreign currency exchange rates. See "Note 3. Business Combinations and Acquisitions—Acquisition of Gabriel Performance Products."

Inventories

Inventories are stated at the lower of cost or market, with cost determined using average cost, LIFO and first-in first-out methods for different components of inventory.

Leases

The determination of whether a contract is or contains a lease is performed at the lease inception date. Lease right-of-use assets and lease liabilities are recognized at the lease commencement date based on the present value of lease payments over the lease term, using incremental borrowing rates as the implicit rates are not readily determinable for our leases. The incremental borrowing rates are determined on a collateralized basis and vary from lease to lease depending on the country where the leased asset exists and the term of the lease arrangement. We combine lease components with non-lease components and account for them as a single lease component for all classes of underlying assets, except for leases of manufacturing and research facilities and administrative offices. For these assets, non-lease components are separated from lease components and accounted for as normal operating expenses. See "Note 9. Leases."

Legal Costs

We expense legal costs, including those legal costs incurred in connection with a loss contingency, as incurred.

Net Income Per Share Attributable to Huntsman Corporation

Basic income per share excludes dilution and is computed by dividing net income attributable to Huntsman Corporation by the weighted average number of shares outstanding during the period. Diluted income per share reflects all potential dilutive common shares outstanding during the period and is computed by dividing net income attributable to Huntsman Corporation by the weighted average number of shares outstanding during the period increased by the number of additional shares that would have been outstanding as potential dilutive securities.

Basic and diluted income per share is determined using the following information (in millions):

	Year ended December 31,		
	2022	2021	2020
Numerator:			
Income from continuing operations attributable to Huntsman Corporation	$ 448	$ 996	$ 257
Net income attributable to Huntsman Corporation	$ 460	$ 1,045	$ 1,034
Denominator:			
Weighted average shares outstanding	201.0	219.2	220.6
Dilutive shares:			
Stock-based awards	2.0	2.2	1.3
Total weighted average shares outstanding, including dilutive shares	203.0	221.4	221.9

Additional stock-based awards of 1.1 million, 1.1 million and 4.3 million weighted average equivalent shares of stock were outstanding during the years ended December 31, 2022, 2021 and 2020, respectively. However, these stock-based awards were not included in the computation of diluted earnings per share for the respective periods mentioned because the effect would be anti-dilutive.

Other Noncurrent Assets

Periodic maintenance and repairs applicable to major units of manufacturing facilities (a “turnaround”) are accounted for on the deferral basis by capitalizing the costs of the turnaround and amortizing the costs over the estimated period until the next turnaround.

Principles of Consolidation

Our consolidated financial statements include the accounts of our wholly owned and majority owned subsidiaries and any variable interest entities for which we are the primary beneficiary. All intercompany accounts and transactions have been eliminated.

Property, Plant and Equipment

Property, plant and equipment is stated at cost less accumulated depreciation. Depreciation is computed using the straight-line method over the estimated useful lives or lease term as follows:

	In years
Buildings	10 - 40
Plant and equipment	3 - 30
Furniture, fixtures and leasehold improvements	5 - 20

Interest expense capitalized as part of plant and equipment was $7 million, $11 million and $7 million for the years ended December 31, 2022, 2021 and 2020, respectively.

Normal maintenance and repairs of plant and equipment are charged to expense as incurred. Renewals, betterments and major repairs that materially extend the useful life of the assets are capitalized, and the assets replaced, if any, are retired.

Revenue Recognition

We generate substantially all of our revenue through product sales in the open market and long-term supply agreements in which revenue is recognized at a point in time. We recognize revenue when control of the promised goods is transferred to our customers. Control of goods usually passes to the customer at the time shipment is made. Revenue is measured as the amount that reflects the consideration that we expect to be entitled to in exchange for those goods. Sales, value add, and other taxes we collect concurrent with revenue-producing activities are excluded from revenue. Incidental items that are immaterial in the context of the contract are recognized as expense. We have elected to account for all shipping and handling activities as fulfillment costs. We have also elected to expense commissions when incurred as the amortization period of the commission asset that we would have otherwise recognized is less than one year.

Substantially all of our revenue is generated through product sales in which revenue is recognized at a point in time. At contract inception, we assess the goods and services, if any, promised in our contracts and identify a performance obligation for each promise to transfer to the customer a good or service that is distinct. In substantially all cases, a contract has a single performance obligation to deliver a promised good to the customer. Revenue is recognized when control of the product is transferred to the customer (i.e., when our performance obligation is satisfied), which typically occurs at shipment. Further, in determining whether control has transferred, we consider if there is a present right to payment and legal title, along with risks and rewards of ownership having transferred to the customer.

The amount of consideration we receive and revenue we recognize is based upon the terms stated in the sales contract, which may contain variable consideration such as discounts or rebates. We allocate the transaction price to each distinct product based on their relative standalone selling price. The product price as specified on the purchase order or in the sales contract is considered the standalone selling price as it is an observable input that depicts the price as if sold to a similar customer in similar circumstances. In order to estimate the applicable variable consideration, we use historical and current trend information to estimate the amount of discounts or rebates to which customers are likely to be entitled. Historically, actual discount or rebate adjustments relative to those estimated and included when determining the transaction price have not materially differed. Payment terms vary but are generally less than one year. As our standard payment terms are less than one year, we have elected to not assess whether a contract has a significant financing component. In the normal course of business, we do not accept product returns unless the item is defective as manufactured. We establish provisions for estimated returns based on an analysis of historical experience. See “Note 17. Revenue Recognition.”

Securitization of Accounts Receivable

Under our A/R Programs, we grant an undivided interest in certain of our trade receivables to the special purpose entities (“SPE”) in the U.S. and EU. This undivided interest serves as security for the issuance of debt. The A/R Programs provide for financing in both U.S. dollars, euros and British pounds. The amounts outstanding under our A/R Programs are accounted for as secured borrowings. See “Note 14. Debt—Direct and Subsidiary Debt—A/R Programs.”

Stock-Based Compensation

We measure the cost of employee services received in exchange for an award of equity instruments based on the grant-date fair value of the award. That cost, net of estimated forfeitures, will be recognized over the period during which the employee is required to provide services in exchange for the award. See “Note 23. Stock-Based Compensation Plan.”

Use of Estimates

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Accounting Pronouncements Adopted During 2022

There were no accounting pronouncements that we adopted during 2022.

Accounting Pronouncements Pending Adoption in Future Periods

Recently issued accounting pronouncements that become effective subsequent to 2022 either will not have a material impact on us or are not applicable to us.

3. BUSINESS COMBINATIONS AND ACQUISITIONS

Acquisition of Gabriel Performance Products

On January 15, 2021, we completed the acquisition of Gabriel Performance Products, a North American specialty chemical manufacturer of specialty additives and epoxy curing agents for the coatings, adhesives, sealants and composite end-markets (the “Gabriel Acquisition”), from funds affiliated with Audax Private Equity in an all-cash transaction of approximately $251 million. The purchase price was funded from available liquidity, and the acquired business has been integrated into our Advanced Materials segment. Transaction costs related to this acquisition were approximately $2 million in 2021 and were recorded in other operating income, net in our consolidated statements of operations.

We accounted for the Gabriel Acquisition using the acquisition method. As such, we analyzed the fair value of tangible and intangible assets acquired and liabilities assumed. The allocation of acquisition cost to the assets acquired and liabilities assumed is summarized as follows (dollars in millions):

Fair value of assets acquired and liabilities assumed:		
Cash paid for the Gabriel Acquisition	$	251
Cash	$	9
Accounts receivable		13
Inventories		23
Property, plant and equipment		50
Intangible assets		96
Goodwill		87
Accounts payable		(7)
Accrued liabilities		(3)
Deferred income taxes		(17)
Total fair value of net assets acquired	$	251

The valuation was finalized during the first quarter of 2022. Intangible assets acquired included in this allocation consist of trademarks, technology and trade secrets, which are being amortized over a period of 15 years. The goodwill recognized is attributable primarily to projected future profitable growth in our Advanced Materials specialty portfolio and synergies. We acquired approximately $94 million of goodwill that will be deductible for income tax purposes.

Acquisition of CVC Thermoset Specialties

On May 18, 2020, we completed the CVC Thermoset Specialties Acquisition, a North American specialty chemical manufacturer serving the industrial composites, adhesives and coatings markets. We acquired the business for $304 million from Emerald Performance Materials LLC, which is majority owned by affiliates of American Securities LLC, in an all-cash transaction funded from available liquidity. The acquired business is being integrated into our Advanced Materials segment. Transaction costs related to this acquisition were approximately $5 million for the year ended December 31, 2020 and were recorded in other operating income, net in our consolidated statements of operations.

We accounted for the CVC Thermoset Specialties Acquisition using the acquisition method. As such, we analyzed the fair value of tangible and intangible assets acquired and liabilities assumed. The allocation of acquisition cost to the assets acquired and liabilities assumed is summarized as follows (dollars in millions):

Fair value of assets acquired and liabilities assumed:		
Cash paid for the CVC Thermoset Specialties Acquisition	$	304
Accounts receivable	$	12
Inventories		37
Property, plant and equipment		67
Intangible assets		117
Goodwill		120
Accounts payable		(7)
Accrued liabilities		(1)
Deferred income taxes		(41)
Total fair value of net assets acquired	$	304

Intangible assets acquired consist primarily of trademarks, trade secrets and customer relationships, which are predominantly being amortized over a period of 20 years. The goodwill recognized is attributable primarily to projected future profitable growth in our Advanced Materials specialty portfolio and synergies. None of the goodwill arising from the acquisition is deductible for income tax purposes.

Acquisition of Icynene-Lapolla

On February 20, 2020, we completed the Icynene-Lapolla Acquisition, a leading North American manufacturer and distributor of spray polyurethane foam insulation systems for residential and commercial applications. We acquired the business from an affiliate of FFL Partners, LLC for $353 million in an all-cash transaction funded from available liquidity. The acquired business was integrated into our Polyurethanes segment. Transaction costs related to this acquisition were approximately $14 million for the year ended December 31, 2020 and were recorded in other operating income, net in our consolidated statements of operations.

We have accounted for the Icynene-Lapolla Acquisition using the acquisition method. As such, we analyzed the fair value of tangible and intangible assets acquired and liabilities assumed. The allocation of acquisition cost to the assets acquired and liabilities assumed is summarized as follows (dollars in millions):

Fair value of assets acquired and liabilities assumed:	
Cash paid for the Icynene-Lapolla Acquisition	$ 353
Cash	$ 7
Accounts receivable	36
Inventories	32
Prepaid expenses and other current assets	2
Property, plant and equipment	9
Intangible assets	130
Goodwill	167
Other noncurrent assets	4
Accounts payable	(14)
Accrued liabilities	(11)
Deferred income taxes	(9)
Total fair value of net assets acquired	$ 353

As a result of the final valuation of the assets and liabilities, reallocations were made during the first quarter of 2021 in certain current asset and liability, property, plant and equipment, intangible asset, goodwill, other noncurrent assets and deferred tax balances. Intangible assets acquired consist primarily of trademarks, trade secrets and customer relationships, which are predominantly being amortized over a period of 10 years. The goodwill recognized is attributable primarily to projected future profitable growth, penetration into downstream markets and synergies. None of the goodwill arising from the acquisition is deductible for income tax purposes.

Pro Forma Information For Acquisitions

If the Gabriel Acquisition, the CVC Thermoset Specialties Acquisition and the Icynene-Lapolla Acquisition were to have occurred on January 1, 2020, the following estimated pro forma revenues from continuing operations, net income and net income attributable to Huntsman Corporation and Huntsman International would have been reported (dollars in millions):

	Pro forma (unaudited) Year ended December 31,	
	2021(1)	**2020**
Revenues	$ 7,674	$ 5,583
Net income	1,092	1,054
Net income attributable to Huntsman Corporation	1,033	1,022

	Pro forma (unaudited) Year ended December 31,	
	2021(1)	**2020**
Revenues	$ 7,674	$ 6,180
Net income	1,095	1,055
Net income attributable to Huntsman International	1,036	1,023

(1) Includes pro forma information for the Gabriel Acquisition only.

4. DISCONTINUED OPERATIONS AND BUSINESS DISPOSITIONS

Discontinued Operations

Sale of Textile Effects Business

On August 9, 2022, we entered into a definitive agreement to sell our Textile Effects Business to Archroma for a purchase price of $593 million in cash plus the assumption of underfunded pension liabilities, and we expect the net after tax cash proceeds to be approximately $540 million before fees and subject to certain customary purchase price adjustments as set forth in the purchase agreement. We expect the transaction to close on February 28, 2023. Beginning in the third quarter of 2022, the results of our Textile Effects Business are reported as discontinued operations for all periods presented.

Sale of Chemical Intermediates Businesses

On January 3, 2020, we completed the sale of our Chemical Intermediates Businesses to Indorama in a transaction valued at approximately $2 billion, comprised of a cash purchase price of approximately $1.92 billion and the transfer of approximately $72 million in net underfunded pension and other post-employment benefit liabilities. In connection with this sale, we received proceeds of approximately $1.92 billion and recognized a net after-tax gain of $748 million in 2020. Additionally, in connection with this sale, we entered into long-term supply agreements with Indorama for certain raw materials at market prices supplied by our former Chemical Intermediates Businesses. In connection with this sale, we recognized approximately $19 million of income as a result of a liquidation of LIFO inventory.

During the year ended December 31, 2020, we paid $231 million of income taxes with respect to the gain on the sale of our Chemical Intermediates Businesses. With the sale of approximately 42.4 million ordinary shares we held in Venator to SK Capital Partners, LP completed on December 23, 2020, we offset the capital loss on the sale of the Venator shares against the capital gain realized on the sale of our Chemical Intermediates Businesses.

Financial Information for Discontinued Operations

The following table reconciles the carrying amounts of major classes of assets and liabilities of discontinued operations to total assets and liabilities of discontinued operations that are classified as held for sale in our consolidated balance sheets (dollars in millions):

	December 31, 2022	December 31, 2021
Carrying amounts of major classes of assets held for sale:		
Accounts receivable	$ 133	$ 171
Inventories	151	163
Other current assets	11	12
Total current assets		346
Property, plant and equipment, net	134	133
Deferred income taxes	13	26
Operating lease right-of-use assets	15	22
Other noncurrent assets	15	1
Total noncurrent assets		182
Total assets held for sale(1)	$ 472	$ 528
Carrying amounts of major classes of liabilities held for sale:		
Accounts payable	$ 63	$ 94
Accrued liabilities	47	67
Current operating lease liabilities	2	2
Total current liabilities		163
Noncurrent operating lease liabilities	17	24
Other noncurrent liabilities	65	127
Total noncurrent liabilities		151
Total liabilities held for sale(1)	$ 194	$ 314

(1) Held for sale assets and liabilities are those of our Textile Effects Business. Total assets and liabilities held for sale as of December 31, 2022 are classified as current as we anticipate the sale of our Textile Effects Business will close in February 2023.

The following table reconciles major line items constituting pretax income of discontinued operations to after-tax income of discontinued operations as presented in our consolidated statements of operations (dollars in millions):

	Year ended December 31,		
	2022	2021	2020
Major line items constituting pretax income of discontinued operations(1):			
Trade sales, services and fees, net(2)	$ 692	$ 783	$ 604
Cost of goods sold(2)(3)	531	592	437
Gain on sale of the Chemical Intermediates Businesses	—	—	978
Other expense items, net	130	121	122
Income from discontinued operations before income taxes	31	70	1,023
Income tax expense	(19)	(21)	(246)
Income from discontinued operations, net of tax	12	49	777
Net income attributable to noncontrolling interests	(3)	—	—
Net income attributable to discontinued operations	$ 9	$ 49	$ 777

(1) Discontinued operations primarily include our Textile Effects Business and Chemical Intermediates Businesses.
(2) Includes eliminations of trade sales, services and fees, net and cost of sales between continuing operations and discontinued operations.
(3) Includes $48 million of proceeds related to insurance recoveries during the year ended December 31, 2020.

Sale of India-Based Do-It-Yourself Consumer Adhesives Business

On November 3, 2020, we completed the sale of the India-based DIY business to Pidilite Industries Ltd. and received cash of approximately $257 million. In the second quarter of 2021, we received the full payment of $28 million pursuant to an earnout provision based on the DIY business's achievement of certain sales revenue targets in line with its 2019 performance. As a result, we recognized an additional pretax gain of $28 million in the second quarter of 2021, which was recorded in gain on sale of India-based DIY business in our consolidated statements of operations.

Separation and Deconsolidation of Venator

On December 23, 2020, we completed the sale of approximately 42.4 million ordinary shares of Venator Materials PLC ("Venator"). Concurrent with the sale of ordinary shares, we entered into an option agreement, pursuant to which we granted an option to funds advised by SK Capital Partners, LP to purchase the remaining approximate 9.7 million ordinary shares we hold in Venator at $2.15 per share. The option will expire on June 23, 2023 and will not be exercisable so long as such exercise would result in a default or an "Event of Default" under Venator's Term Loan Credit Agreement and Revolving Credit Agreement. We record this option at fair value with changes in fair value reported in earnings. We account for our remaining ownership interest in Venator as an investment in equity securities that are marked to fair value with changes in fair value reported in earnings. For the years ended December 31, 2022 and 2021, we recorded net losses of $12 million and $28 million, respectively, to record our investment in Venator and related option at fair value. For the year ended December 31, 2020, we recorded a loss of $88 million, primarily consisting of a loss of $43 million to record our investment in Venator at fair value, a loss of $12 million related to the sale of approximately 42.4 million Venator ordinary shares and a loss of $31 million on the write off of a receivable related to certain income tax benefits that were reduced upon the completion of the sale of Venator shares to SK Capital Partners, LP. These net losses were recorded in "Fair value adjustments to Venator investment, net" in our consolidated statements of operations.

5. INVENTORIES

Inventories consisted of the following (dollars in millions):

	December 31,	
	2022	2021
Raw materials and supplies	$ 241	$ 248
Work in progress	40	33
Finished goods	758	799
Total	1,039	1,080
LIFO reserves	(44)	(42)
Net inventories	$ 995	$ 1,038

For both December 31, 2022 and 2021, approximately 8% of inventories were recorded using the LIFO cost method.

6. PROPERTY, PLANT AND EQUIPMENT

The cost and accumulated depreciation of property, plant and equipment were as follows (dollars in millions):

Huntsman Corporation

	December 31,	
	2022	**2021**
Land	$ 94	$ 96
Buildings	570	590
Plant and equipment	5,092	4,864
Construction in progress	274	444
Total	6,030	5,994
Less accumulated depreciation	(3,653)	(3,551)
Net	$ 2,377	$ 2,443

Huntsman International

	December 31,	
	2022	**2021**
Land	$ 94	$ 96
Buildings	570	590
Plant and equipment	5,180	4,952
Construction in progress	274	444
Total	6,118	6,082
Less accumulated depreciation	(3,741)	(3,639)
Net	$ 2,377	$ 2,443

Depreciation expense from continuing operations for Huntsman Corporation and Huntsman International for 2022, 2021 and 2020 was $233 million, $231 million and $226 million, respectively.

7. INVESTMENT IN UNCONSOLIDATED AFFILIATES

Our ownership percentage and investment in unconsolidated affiliates were as follows (dollars in millions):

	December 31, 2022	December 31, 2021
Equity Method:		
BASF Huntsman Shanghai Isocyanate Investment BV (50%)(1)	$ 103	$ 115
Nanjing Jinling Huntsman New Material Co., Ltd. (49%)	282	318
Jurong Ningwu New Material Development Co., Ltd. (30%)	37	34
KPX Huntsman Polyurethanes Automotive Co., Ltd. (50%)(2)	3	3
Total investments	$ 425	$ 470

(1) We own 50% of BASF Huntsman Shanghai Isocyanate Investment BV. BASF Huntsman Shanghai Isocyanate Investment BV owns a 70% interest in SLIC, thus giving us an indirect 35% interest in SLIC.
(2) KPX Huntsman Polyurethanes Automotive Co., Ltd. was formed in September 2021.

All of our equity method investments are held by our Polyurethanes segment.

SUMMARIZED FINANCIAL INFORMATION OF UNCONSOLIDATED AFFILIATES

Summarized financial information of our unconsolidated affiliates as of December 31, 2022 and 2021 and for the years ended December 31, 2022, 2021 and 2020 is as follows (dollars in millions):

	December 31, 2022	December 31, 2021
Current assets	$ 454	$ 605
Non-current assets	870	1,001
Current liabilities	237	271
Non-current liabilities	126	277

	Year ended December 31, 2022	2021	2020(1)
Revenues	$ 2,410	$ 2,588	$ 3,544
Gross profit	243	470	338
Income (loss) from continuing operations	148	305	(2)
Net income (loss)	148	305	(2)

(1) We began accounting for our investment in Venator as an equity method investment in December of 2018 and then as an investment in equity securities in December of 2020 and thereafter. Therefore, the summarized financial data only includes information for Venator for the year ended December 31, 2020.

8. VARIABLE INTEREST ENTITIES

We evaluate our investments and transactions to identify variable interest entities for which we are the primary beneficiary. We hold a variable interest in the following joint ventures for which we are the primary beneficiary:

- Rubicon is our 50%-owned joint venture with Lanxess that manufactures products for our Polyurethanes and Performance Products segments. The structure of the joint venture is such that the total equity investment at risk is not sufficient to permit the joint venture to finance its activities without additional financial support. By virtue of the operating agreement with this joint venture, we purchase a majority of the output, absorb a majority of the operating costs and provide a majority of the additional funding.

- AAC is our 50%-owned joint venture with Zamil group that manufactures products for our Performance Products segment. As required in the operating agreement governing this joint venture, we purchase all of AAC’s production and sell it to our customers. Substantially all of the joint venture’s activities are conducted on our behalf.

During the year ended December 31, 2022, there were no changes in our variable interest entities.

Creditors of our variable interest entities have no recourse to our general credit. See "Note 14. Debt—Direct and Subsidiary Debt." As the primary beneficiary of these variable interest entities at December 31, 2022, the joint ventures' assets, liabilities and results of operations are included in our consolidated financial statements.

The following table summarizes the carrying amount of our variable interest entities' assets and liabilities included in our consolidated balance sheets as of December 31, 2022 and 2021 (dollars in millions):

	December 31,	
	2022	**2021**
Current assets	$ 73	$ 81
Property, plant and equipment, net	149	161
Operating lease right-of-use assets	28	26
Other noncurrent assets	140	148
Deferred income taxes	13	21
Total assets	$ 403	$ 437
Current liabilities	$ 144	$ 176
Long-term debt	26	35
Noncurrent operating lease liabilities	19	20
Other noncurrent liabilities	25	46
Total liabilities	$ 214	$ 277

The revenues, income from continuing operations before income taxes and net cash provided by operating activities for our variable interest entities are as follows (dollars in millions):

	Year ended December 31,		
	2022	**2021**	**2020**
Revenues	$ —	$ —	$ —
Income from continuing operations before income taxes	36	12	4
Net cash provided by operating activities	81	33	10

9. LEASES

We primarily lease manufacturing and research facilities, administrative offices, land, tanks, railcars and equipment. Leases with an initial term of 12 months or less are not recognized on the balance sheets; we recognize lease expense for these leases on a straight-line basis over the lease term. Our variable lease cost was approximately nil for each of the years ended December 31, 2022, 2021 and 2020, respectively. Our leases have remaining lives from one month to 35 years. Certain lease agreements include one or more options to renew, at our discretion, with renewal terms that can extend the lease term by approximately one year to 30 years or more. Renewal and termination options that we are reasonably certain to exercise have been included in the calculation of the lease right-of-use assets and lease liabilities. None of our lease agreements contain material residual value guarantees or material restrictions or covenants.

The components of operating lease expense, cash flows and supplemental noncash information from continuing operations are as follows (dollars in millions):

	Year ended December 31,		
	2022	**2021**	**2020**
Operating lease expense:			
Cost of goods sold	$ 37	$ 39	$ 34
Selling, general and administrative	21	22	20
Research and development	6	6	6
Total operating lease expense(1)	$ 64	$ 67	$ 60
Cash paid for amounts included in the measurement of lease liabilities:			
Operating cash flows from operating leases	$ 63	$ 63	$ 69
Supplemental noncash information:			
Leased assets obtained in exchange for new operating lease liabilities	$ 24	$ 18	$ 90

(1) Total operating lease expense includes short-term lease expense of approximately $1 million, $3 million and $3 million for the years ended December 31, 2022, 2021 and 2020, respectively.

The weighted-average lease term and discount rate for our operating leases from continuing operations are as follows:

	Year ended December 31,		
	2022	**2021**	**2020**
Weighted-average remaining lease term (in years)	10	10	11
Weighted-average discount rate	3.7%	3.7%	3.7%

The undiscounted future cash flows of operating lease liabilities from continuing operations as of December 31, 2022 are as follows (dollars in millions):

Year ending December 31,	
2023	$ 62
2024	50
2025	47
2026	45
2027	43
Thereafter	221
Total lease payments	468
Less imputed interest	(81)
Total	$ 387

As of December 31, 2022, we have additional leases, primarily for leases of office facilities and rail cars, that have not yet commenced of approximately $4 million. These leases will commence in 2023 with lease terms of up to 10 years.

During November 2020, we entered into a sale and leaseback agreement to sell certain properties in Basel, Switzerland for approximately CHF 67 million (approximately $73 million) and to lease those properties back. This transaction resulted in a gain of approximately CHF 30 million (approximately $33 million).

10. INTANGIBLE ASSETS

The gross carrying amount and accumulated amortization of intangible assets were as follows (dollars in millions):

Huntsman Corporation

	December 31, 2022			December 31, 2021		
	Carrying amount	Accumulated amortization	Net	Carrying amount	Accumulated amortization	Net
Patents, trademarks and technology	$ 468	$ 267	$ 201	$ 471	$ 253	$ 218
Licenses and other agreements	311	106	205	321	85	236
Other intangibles	51	32	19	47	32	15
Total	$ 830	$ 405	$ 425	$ 839	$ 370	$ 469

Huntsman International

	December 31, 2022			December 31, 2021		
	Carrying amount	Accumulated amortization	Net	Carrying amount	Accumulated amortization	Net
Patents, trademarks and technology	$ 468	$ 267	$ 201	$ 471	$ 253	$ 218
Licenses and other agreements	311	106	205	321	85	236
Other intangibles	59	40	19	55	40	15
Total	$ 838	$ 413	$ 425	$ 847	$ 378	$ 469

Amortization expense from continuing operations for Huntsman Corporation and Huntsman International was $40 million, $40 million and $33 million for the years ended December 31, 2022, 2021 and 2020, respectively.

Our and Huntsman International's estimated future amortization expense from continuing operations for intangible assets over the next five years is as follows (dollars in millions):

Year ending December 31,	
2023	$ 40
2024	40
2025	40
2026	39
2027	35

11. ACCRUED LIABILITIES

Accrued liabilities consisted of the following (dollars in millions):

Huntsman Corporation

	December 31, 2022	December 31, 2021
Payroll and related accruals	$ 93	$ 136
Restructuring and plant closing reserves	72	17
Income taxes	68	135
Taxes other than income taxes	44	49
Volume and rebate accruals	36	46
Legal fees payable related to the Albemarle Settlement	—	200
Other miscellaneous accruals	116	130
Total	$ 429	$ 713

Huntsman International

	December 31, 2022	December 31, 2021
Payroll and related accruals	$ 93	$ 136
Restructuring and plant closing reserves	72	17
Income taxes	68	129
Taxes other than income taxes	44	49
Volume and rebate accruals	36	46
Legal fees payable related to the Albemarle Settlement	—	200
Other miscellaneous accruals	114	127
Total	$ 427	$ 704

12. RESTRUCTURING, IMPAIRMENT AND PLANT CLOSING COSTS

As of December 31, 2022, 2021 and 2020, accrued restructuring costs by type of cost consisted of the following (dollars in millions):

	Workforce reductions	Non-cancelable lease and contract termination costs	Other Restructuring costs	Total
Accrued liabilities as of January 1, 2020	$ 8	$ 4	$ 2	$ 14
Charges	28	2	4	34
Payments	(13)	(6)	(6)	(25)
Accrued liabilities as of December 31, 2020	23	—	—	23
Charges	17	—	5	22
Payments	(15)	—	(4)	(19)
Accrued liabilities as of December 31, 2021	25	—	1	26
Charges	69	—	11	80
Payments	(18)	—	(12)	(30)
Accrued liabilities as of December 31, 2022	$ 76	$ —	$ —	$ 76

Details with respect to our reserves for restructuring, impairment and plant closing costs by segment are provided below (dollars in millions):

	Polyurethanes	Performance Products	Advanced Materials	Corporate and other	Total
Accrued liabilities as of January 1, 2020	$ —	$ —	$ 10	$ 4	$ 14
Charges	16	5	7	6	34
Payments	(4)	(3)	(8)	(10)	(25)
Accrued liabilities as of December 31, 2020	12	2	9	—	23
Charges (credits)	6	2	(1)	15	22
Payments	(9)	(3)	(3)	(4)	(19)
Accrued liabilities as of December 31, 2021	9	1	5	11	26
Charges	28	5	8	39	80
Payments	(13)	(1)	(3)	(13)	(30)
Accrued liabilities as of December 31, 2022	$ 24	$ 5	$ 10	$ 37	$ 76
Current portion of restructuring reserves	$ 24	$ 5	$ 10	$ 33	$ 72
Long-term portion of restructuring reserves	—	—	—	4	4

Details with respect to cash and noncash restructuring charges from continuing operations by initiative for the years ended December 31, 2022, 2021 and 2020 are provided below (dollars in millions):

Cash charges	$ 80
Noncash charges:	
Gain on sale of assets	(2)
Accelerated depreciation	6
Other noncash charges	2
Total 2022 restructuring, impairment and plant closing costs	$ 86
Cash charges	$ 22
Noncash charges:	
Gain on sale of assets	(3)
Accelerated depreciation	14
Other noncash charges	7
Total 2021 restructuring, impairment and plant closing costs	$ 40
Cash charges	$ 34
Noncash charges:	
Other noncash charges	7
Total 2020 restructuring, impairment and plant closing costs	$ 41

Restructuring Activities

Beginning in the fourth quarter of 2022, we implemented a restructuring program to further realign our cost structure beyond the current in-progress cost optimization programs with additional restructuring in Europe. The new program includes exiting and consolidating certain facilities, workforce relocation to lower cost locations and further personnel rationalization. In connection with this program, we recorded net restructuring expense of approximately $34 million for the year ended December 31, 2022, primarily related to workforce reductions. We expect to record further restructuring expenses of approximately $12 million through 2023.

Beginning in the third quarter of 2022, our Corporate function implemented restructuring programs to optimize our global approaches to leveraging managed services in various information technology functions and to align and optimize our supply chain and EHS processes and systems. In connection with these restructuring programs, we recorded net restructuring expense of approximately $19 million for the year ended December 31, 2022, primarily related to workforce reductions. We expect to record further restructuring expenses of approximately $1 million through 2023.

Beginning in the first quarter of 2021, our Corporate function implemented a restructuring program to optimize our global approach to leveraging shared services capabilities. During the second quarter of 2022, this program was further expanded to include additional geographies. In connection with this restructuring program, we recorded net restructuring expense of approximately $15 million and $16 million for the years ended December 31, 2022 and 2021, respectively, primarily related to workforce reductions. We expect to record further restructuring expenses of approximately $1 million through 2023.

Beginning in the third quarter of 2020, our Polyurethanes segment implemented a restructuring program to optimize its downstream footprint. During the second quarter of 2022, this optimization program was further expanded to include the entire Polyurethanes business. In connection with this restructuring program, we recorded net restructuring expense of approximately $10 million, $7 million and $12 million for the years ended December 31, 2022, 2021 and 2020, respectively. During 2022, this net expense primarily related to workforce reductions. During 2021, this net expense primarily related to workforce reductions and accelerated depreciation, partially offset by a gain on the sale of assets of approximately $3 million. During 2020, this expense primarily related to workforce reductions. We expect to record further restructuring expenses of approximately $4 million through 2023.

Beginning in the second quarter of 2020, our Advanced Materials segment implemented restructuring programs in connection with the CVC Thermoset Specialties Acquisition, the alignment of the segment's commercial organization and optimization of the segment's manufacturing processes. In connection with these restructuring programs, we recorded net restructuring expense of approximately $8 million, $10 million and $10 million for the years ended December 31, 2022, 2021 and 2020, respectively. During 2022 and 2021, this net expense primarily related to accelerated depreciation. During 2020, this net expense primarily related to workforce reductions and accelerated depreciation. We expect to record further restructuring expenses of approximately $3 million through the end of 2023.

Beginning in the second quarter of 2020, our Polyurethanes segment implemented a restructuring program to reorganize its spray polyurethane foam business to better position this business for efficiencies and growth in coming years. In connection with this restructuring program, we recorded net restructuring expense of approximately $9 million for the year ended December 31, 2020, primarily related to workforce reductions and accelerated depreciation.

Beginning in the second quarter of 2020, our Performance Products segment implemented a restructuring program, primarily related to workforce reductions, in response to the sale of our Chemical Intermediates Businesses to Indorama. In connection with this restructuring program, we recorded net restructuring expense of approximately $4 million for the year ended December 21, 2020.

13. OTHER NONCURRENT LIABILITIES

Other noncurrent liabilities consisted of the following (dollars in millions):

Huntsman Corporation

	December 31, 2022	December 31, 2021
Pension liabilities	$ 183	$ 320
Other postretirement benefits	42	55
Employee benefit accrual	38	44
Other	159	167
Total	$ 422	$ 586

Huntsman International

	December 31, 2022	December 31, 2021
Pension liabilities	$ 183	$ 320
Other postretirement benefits	42	55
Employee benefit accrual	38	44
Other	151	154
Total	$ 414	$ 573

14. DEBT

Outstanding debt, net of debt issuance costs, of consolidated entities consisted of the following (dollars in millions):

	December 31, 2022	December 31, 2021
Senior Credit Facilities:		
Revolving facility	$ 55	$ —
Amounts outstanding under A/R programs	166	—
Senior notes	1,455	1,473
Variable interest entities	35	45
Other	26	32
Total debt	$ 1,737	$ 1,550
Total current portion of debt	$ 66	$ 12
Long-term portion of debt	1,671	1,538
Total debt	$ 1,737	$ 1,550

Direct and Subsidiary Debt

Substantially all of our debt, including the facilities described below, has been incurred by our subsidiaries (primarily Huntsman International); Huntsman Corporation is not a guarantor of such subsidiary debt.

Certain of our subsidiaries have third-party debt agreements. These debt agreements contain certain restrictions with regard to dividends, distributions, loans or advances. In certain circumstances, the consent of a third party would be required prior to the transfer of any cash or assets from these subsidiaries to us.

Debt Issuance Costs

We record debt issuance costs related to a debt liability on the balance sheets as a reduction in the face amount of that debt liability. As of December 31, 2022 and 2021, the amount of debt issuance costs directly reducing the debt liability was $8 million and $10 million, respectively. We record the amortization of debt issuance costs as interest expense.

Revolving Credit Facility

On May 20, 2022, Huntsman International entered into the 2022 Revolving Credit Facility. Borrowings will bear interest at the rates specified in the credit agreement governing the 2022 Revolving Credit Facility, which will vary based on the type of loan and Huntsman International's debt ratings. Under the credit agreement, the interest rate margin and the commitment fee rates are also subject to adjustments based on the Company's performance on specified sustainability target thresholds with respect to annual percentage reduction in operational greenhouse gas emissions intensity and annual percentage reduction in water consumption intensity. Unless previously terminated in accordance with its terms, the credit agreement will mature in May 2027. Huntsman International may increase the 2022 Revolving Credit Facility commitments up to an additional $500 million, subject to the satisfaction of certain conditions. In connection with entering into the 2022 Revolving Credit Facility, Huntsman International terminated all commitments and repaid all obligations under its 2018 $1.2 billion senior unsecured credit facility.

The following table presents certain amounts under our 2022 Revolving Credit Facility as of December 31, 2022 (monetary amounts in millions):

Facility	Committed amount	Principal outstanding	Unamortized discounts and debt issuance costs	Carrying value	Interest rate(2)	Maturity
2022 Revolving Credit Facility	$ 1,200	$ 55(1)	$ —(1)	$ 55(1)	Term Secured Overnight Financing Rate ("SOFR") plus 1.475%	May 2027

(1) On December 31, 2022, we had an additional $13 million (U.S. dollar equivalents) of letters of credit and bank guarantees issued and outstanding under our 2022 Revolving Credit Facility.
(2) Interest rates on borrowings under the 2022 Revolving Credit Facility vary based on the type of loan and Huntsman International's debt ratings. The representative interest rate as of December 31, 2022 was 1.475% above term SOFR.

Term Loan Credit Facility

On September 24, 2019, Huntsman International entered into the 2019 Term Loan, pursuant to which Huntsman International borrowed an aggregate principal amount of €92 million (or $101 million equivalent). We used the net proceeds from the 2019 Term Loan to finance our acquisition of the 50% noncontrolling interest that we did not own in the Sasol-Huntsman maleic anhydride joint venture. On September 22, 2020 we repaid the 2019 Term Loan in full at maturity.

A/R Programs

Our A/R Programs are structured so that we transfer certain of our trade receivables to the U.S. special purpose entity ("U.S. SPE") and the European special purpose entity ("EU SPE") in transactions intended to be true sales or true contributions. The receivables collateralize debt incurred by the U.S. SPE and the EU SPE.

On July 1, 2021, we entered into amendments to our A/R Programs that, among other things, extended the respective scheduled termination dates of our A/R Programs from April 2022 to July 2024.

Information regarding our A/R Programs as of December 31, 2022 was as follows (monetary amounts in millions):

Facility	Maturity	Maximum funding availability(1)	Amount outstanding	Interest rate(2)
U.S. A/R Program	July 2024	$ 150	$ 81(3)	Applicable rate plus 0.90%
EU A/R Program	July 2024	€ 100	€ 80	Applicable rate plus 1.30%
		(or approximately $106)	(or approximately $85)	

(1) The amount of actual availability under our A/R Programs may be lower based on the level of eligible receivables sold, changes in the credit ratings of our customers, customer concentration levels and certain characteristics of the accounts receivable being transferred, as defined in the applicable agreements.
(2) The applicable rate for our U.S. A/R Program is defined by the lender as USD LIBOR. The applicable rate for our EU A/R Program is either USD LIBOR, EURIBOR or SONIA (Sterling Overnight Interbank Average Rate). In anticipation of the transition away from USD LIBOR, the amendments we made in July 2021 to our A/R Programs incorporated replacement rates for the USD LIBOR.
(3) As of December 31, 2022, we had approximately $8 million (U.S. dollar equivalents) of letters of credit issued and outstanding under our U.S. A/R Program.

As of December 31, 2022 and December 31, 2021, $272 million and $324 million, respectively, of accounts receivable were pledged as collateral under our A/R Programs.

Senior Notes

As of December 31, 2022, we had outstanding the following notes (monetary amounts in millions):

Notes	Maturity	Interest rate	Amount outstanding	Unamortized premiums, discounts and debt issuance costs
2025 Senior Notes	April 2025	4.25%	€300 (€299 carrying value $(318))	$ 1
2029 Senior Notes	February 2029	4.50%	$750 ($740 carrying value)	10
2031 Senior Notes	June 2031	2.95%	$400 ($397 carrying value)	3

The 2025, 2029 and 2031 Senior Notes are general unsecured senior obligations of Huntsman International. The indentures impose certain limitations on the ability of Huntsman International and its subsidiaries to, among other things, incur additional indebtedness secured by any principal properties, incur indebtedness of subsidiaries, enter into sale and leaseback transactions with respect to any principal properties and consolidate or merge with or into any other person or lease, sell or transfer all or substantially all of its properties and assets. Upon the occurrence of certain change of control events, holders of the 2025, 2029 and 2031 Senior Notes will have the right to require that Huntsman International purchase all or a portion of such holder's notes in cash at a purchase price equal to 101% of the principal amount thereof plus accrued and unpaid interest to the date of repurchase.

The 2025 Senior Notes bear interest at 4.25% per year, payable semi-annually on April 1 and October 1, and are due on April 1, 2025. Huntsman International may redeem the 2025 Senior Notes in whole or in part at any time prior to January 1, 2025 at a price equal to 100% of the principal amount thereof plus a ''make-whole'' premium and accrued and unpaid interest.

The 2029 Senior Notes bear interest at 4.50% per year, payable semi-annually on May 1 and November 1, and will mature on May 1, 2029. Huntsman International may redeem the 2029 Senior Notes in whole or in part at any time prior to February 1, 2029 at a price equal to 100% of the principal amount thereof plus a "make-whole" premium and accrued and unpaid interest. Huntsman International may redeem the 2029 Senior Notes at any time, in whole or from time to time in part, on or after February 1, 2029 at a redemption price equal to 100% of the principal amount of the notes to be redeemed, plus accrued and unpaid interest.

On January 15, 2021, we redeemed in full €445 million (approximately $541 million) in aggregate principal amount of our 2021 Senior Notes at the redemption price equal to 100% of the principal amount of the notes, plus accrued and unpaid interest to, but not including, the redemption date. In connection with this redemption, we incurred an incremental cash tax liability of approximately $15 million in the first quarter of 2021 related to foreign currency exchange gains.

On May 26, 2021, Huntsman International completed a $400 million offering of its 2031 Senior Notes. On June 23, 2021, Huntsman International applied the net proceeds from the offering, along with cash on hand, to redeem in full $400 million in aggregate principal amount of its 2022 Senior Notes and to pay accrued but unpaid interest of approximately $2 million. In addition, we paid redemption premiums and related fees and expenses of approximately $25 million and recognized a corresponding loss on early extinguishment of debt of $26 million in the second quarter of 2021.

The 2031 Senior Notes bear interest at 2.95% per year, payable semi-annually on June 15 and December 15 of each year, and will mature on June 15, 2031. Huntsman International may redeem the 2031 Senior Notes in whole or in part at any time prior to March 15, 2031 at a price equal to 100% of the principal amount thereof plus a "make-whole" premium as of, and accrued and unpaid interest, if any, to, but not including, the date of redemption. Huntsman International may redeem the 2031 Senior Notes at any time in whole or from time to time in part, on or after March 15, 2031 at a price equal to 100% of the principal amount thereof plus accrued and unpaid interest, if any, to, but not including, the date of redemption.

Variable Interest Entity Debt

As of December 31, 2022, AAC, our consolidated 50%-owned joint venture, had $35 million outstanding under its loan commitments and debt financing arrangements. As of December 31, 2022, we have $9 million classified as current debt and $26 million as long-term debt on our consolidated balance sheets. We do not guarantee these loan commitments, and AAC is not a guarantor of any of our other debt obligations.

Compliance With Covenants

Our 2022 Revolving Credit Facility contains a financial covenant regarding the leverage ratio of Huntsman International and its subsidiaries. The 2022 Revolving Credit Facility also contains other customary covenants and events of default for credit facilities of this type. Upon an event of default that is not cured or waived within any applicable cure periods, in addition to other remedies that may be available to the lenders, the obligations under the 2022 Revolving Credit Facility may be accelerated.

The agreements governing our A/R Programs also contain certain receivable performance metrics. Any material failure to meet the applicable A/R Programs' metrics could lead to an early termination event under the A/R Programs, which could require us to cease our use of such facilities, prohibiting us from additional borrowings against our receivables or, at the discretion of the lenders, requiring that we repay the A/R Programs in full. An early termination event under the A/R Programs would also constitute an event of default under our 2022 Revolving Credit Facility, which could require us to pay off the balance of the 2022 Revolving Credit Facility in full and could result in the loss of our 2022 Revolving Credit Facility.

We believe that we are in compliance with the covenants governing our material debt instruments, including our 2022 Revolving Credit Facility, our A/R Programs and our notes.

Maturities

The scheduled maturities of our debt (excluding debt to affiliates) by year as of December 31, 2022 are as follows (dollars in millions):

Year ending December 31,	
2023	$ 66
2024	178
2025	331
2026	10
2027	3
Thereafter	1,149
	$ 1,737

15. DERIVATIVE INSTRUMENTS AND HEDGING ACTIVITIES

We are exposed to market risks, such as changes in interest rates, foreign exchange rates and commodity prices. From time to time, we enter into transactions, including transactions involving derivative instruments, to manage certain of these exposures. We also hedge our net investment in certain European operations. Changes in the fair value of the hedge in the net investment of certain European operations are recorded in other accumulated comprehensive income (loss).

Interest Rate Risks

Through our borrowing activities, we are exposed to interest rate risk. Such risk arises due to the structure of our debt portfolio, including the mix of fixed and floating interest rates. Actions taken to reduce interest rate risk include managing the mix and rate characteristics of various interest-bearing liabilities, as well as entering into interest rate derivative instruments.

From time to time, we may purchase interest rate swaps and/or other derivative instruments to reduce the impact of changes in interest rates on our floating-rate exposures. Under interest rate swaps, we agree with other parties to exchange, at specified intervals, the difference between fixed-rate and floating-rate interest amounts calculated by reference to an agreed notional principal amount.

During 2022, there were no other reclassifications from accumulated other comprehensive loss to earnings. The actual amount that will be reclassified to earnings over the next twelve months may vary from this amount due to changing market conditions. We would be exposed to credit losses in the event of nonperformance by a counterparty to our derivative financial instruments. We anticipate, however, that the counterparties will be able to fully satisfy their obligations under the contracts. Market risk arises from changes in interest rates.

Foreign Exchange Rate Risk

Our cash flows and earnings are subject to fluctuations due to exchange rate variation. Our revenues and expenses are denominated in various currencies. We enter into foreign currency derivative instruments to minimize the short-term impact of movements in foreign currency rates. Where practicable, we generally net multicurrency cash balances among our subsidiaries to help reduce exposure to foreign currency exchange rates. Certain other exposures may be managed from time to time through financial market transactions, principally through the purchase of spot or forward foreign exchange contracts (generally with maturities of three months or less). We do not hedge our currency exposures in a manner that would eliminate the effect of changes in exchange rates on our cash flows and earnings. As of December 31, 2022 and 2021, we had approximately $315 million and $160 million, respectively, notional amount (in U.S. dollar equivalents) outstanding in foreign currency contracts with a term of approximately one month related to continuing operations.

A portion of our debt is denominated in euros. We also finance certain of our non-U.S. subsidiaries with intercompany loans that are, in many cases, denominated in currencies other than the entities' functional currency. We manage the net foreign currency exposure created by this debt through various means, including cross-currency swaps, the designation of certain intercompany loans as permanent loans because they are not expected to be repaid in the foreseeable future and the designation of certain debt and swaps as net investment hedges.

Foreign currency transaction gains and losses on intercompany loans that are not designated as permanent loans are recorded in earnings. Foreign currency transaction gains and losses on intercompany loans that are designated as permanent loans are recorded in other comprehensive (loss) income. From time to time, we review such designation of intercompany loans.

We review our non-U.S. dollar denominated debt and derivative instruments to determine the appropriate amounts designated as hedges. As of December 31, 2022, we have designated approximately €180 million (approximately $192 million) of euro-denominated debt as a hedge of our net investment. For the years ended December 31, 2022, 2021 and 2020, the amounts recognized on the hedge of our net investment were a loss of $10 million, a loss of $11 million and a gain of $66 million, respectively, and were recorded in other comprehensive (loss) income.

Commodity Prices Risk

Inherent in our business is exposure to price changes for several commodities. However, our exposure to changing commodity prices is somewhat limited since the majority of our raw materials are acquired at posted or market related prices, and sales prices for many of our finished products are at market related prices which are largely set on a monthly or quarterly basis in line with industry practice. Consequently, we do not generally hedge our commodity exposures.

16. FAIR VALUE

The fair values of our financial instruments were as follows (dollars in millions):

	December 31, 2022		December 31, 2021	
	Carrying value	Estimated fair value	Carrying value	Estimated fair value
Non-qualified employee benefit plan investments	$ 15	$ 15	$ 25	$ 25
Investment in Venator	5	5	25	25
Option agreement for remaining Venator shares	—	—	(7)	(7)
Long-term debt (including current portion)	(1,737)	(1,578)	(1,550)	(1,698)

The carrying amounts reported in the balance sheets of cash and cash equivalents, accounts receivable and accounts payable approximate fair value because of the immediate or short-term maturity of these financial instruments. Our investment in Venator is marked to fair value, which is obtained through market observable pricing using prevailing market prices (Level 1). Additionally, the estimated fair value of the option agreement related to the remaining ordinary shares we hold in Venator is based on a valuation technique using market observable inputs (Level 2). See "Note 4. Discontinued Operations and Business Dispositions—Separation and Deconsolidation of Venator." The fair values of non-qualified employee benefit plan investments are obtained through market observable pricing using prevailing market prices (Level 1). The estimated fair values of our long-term debt are based on quoted market prices for the identical liability when traded in an active market (Level 1). The fair value estimates presented herein are based on pertinent information available to management as of December 31, 2022 and 2021. Although management is not aware of any factors that would significantly affect the estimated fair value amounts, such amounts have not been comprehensively revalued for purposes of these financial statements since December 31, 2022, and current estimates of fair value may differ significantly from the amounts presented herein.

During the years ended December 31, 2022 and 2021, we held no instruments measured at fair value on a recurring basis using significant unobservable inputs (Level 3), and there were no gains or losses (realized or unrealized) included in earnings for instruments categorized as Level 3 within the fair value hierarchy.

17. REVENUE RECOGNITION

The following tables disaggregate our revenue from continuing operations by major source for the years ended December 31, 2022, 2021 and 2020 (dollars in millions):

2022	Polyurethanes	Performance Products	Advanced Materials	Corporate and eliminations	Total
Primary Geographic Markets(1)					
U.S. and Canada	$ 2,126	$ 806	$ 411	$ (13)	$ 3,330
Europe	1,239	395	461	(15)	2,080
Asia Pacific	1,321	402	296	(4)	2,015
Rest of world	381	110	109	(2)	598
	$ 5,067	$ 1,713	$ 1,277	$ (34)	$ 8,023
Major Product Groupings					
MDI urethanes	$ 5,067				$ 5,067
Differentiated		$ 1,713			1,713
Specialty			$ 1,180		1,180
Other			97		97
Eliminations				$ (34)	(34)
	$ 5,067	$ 1,713	$ 1,277	$ (34)	$ 8,023

2021	Polyurethanes	Performance Products	Advanced Materials	Corporate and eliminations	Total
Primary Geographic Markets(1)					
U.S. and Canada	$ 1,884	$ 656	$ 365	$ (24)	$ 2,881
Europe	1,322	382	425	(8)	2,121
Asia Pacific	1,418	362	297	—	2,077
Rest of world	395	85	111	—	591
	$ 5,019	$ 1,485	$ 1,198	$ (32)	$ 7,670
Major Product Groupings					
MDI urethanes	$ 5,019				$ 5,019
Differentiated		$ 1,485			1,485
Specialty			$ 1,077		1,077
Other			121		121
Eliminations				$ (32)	(32)
	$ 5,019	$ 1,485	$ 1,198	$ (32)	$ 7,670

2020	Polyurethanes	Performance Products	Advanced Materials	Corporate and eliminations	Total
Primary Geographic Markets(1)					
U.S. and Canada	$ 1,362	$ 447	$ 217	$ (23)	$ 2,003
Europe	961	252	319	(1)	1,531
Asia Pacific	997	260	224	—	1,481
Rest of world	264	64	79	(1)	406
	$ 3,584	$ 1,023	$ 839	$ (25)	$ 5,421
Major Product Groupings					
MDI urethanes	$ 3,584				$ 3,584
Differentiated		$ 1,023			1,023
Specialty			$ 746		746
Other			93		93
Eliminations				$ (25)	(25)
	$ 3,584	$ 1,023	$ 839	$ (25)	$ 5,421

(1) Geographic information for revenues is based upon countries into which product is sold.

18. EMPLOYEE BENEFIT PLANS

Defined Benefit and Other Postretirement Benefit

We provide a trusteed, non-contributory defined benefit pension plan (the "Plan") that covers the majority of our U.S. employees. Effective July 1, 2004, the Plan formula for employees not covered by a collective bargaining agreement was converted to a cash balance design. For represented employees, participation in the cash balance design was subject to the terms of negotiated contracts. For participating employees, benefits accrued under the prior formula were converted to opening cash balance accounts. The cash balance benefit formula provides annual pay credits from 6% to 12% of eligible pay, depending on age and service, plus accrued interest.

Beginning July 1, 2014, the Huntsman Defined Benefit Pension Plan was closed to new non-union entrants and as of April 1, 2015, it was closed to new union entrants. In addition, as of January 1, 2015, Rubicon closed its defined benefit plan to new entrants. Following the closure of these plans, new hires have been provided with a defined contribution plan with a non-discretionary employer contribution of 6% of pay and a company match of up to 4% of pay, for a total company contribution of up to 10% of pay. We also sponsor unfunded postretirement benefit plans other than pensions, which provide medical and life insurance benefits. Effective August 1, 2015, the post retirement benefit plans were closed to new entrants.

Our postretirement benefit plans provide access to two fully insured Medicare Part D plans including prescription drug benefits affected by the Medicare Prescription Drug, Improvement and Modernization Act of 2003 (the "Act"). We cannot determine whether the medical benefits provided by our postretirement benefit plans are actuarially equivalent to those provided by the Act. We do not collect a subsidy and our net periodic postretirement benefits cost, and related benefit obligation, do not reflect an amount associated with the subsidy. We do not subsidize the premium cost of these plans; the premiums are entirely paid by the retirees.

We sponsor defined benefit plans in a number of countries outside of the U.S. The availability of these plans and their specific design provisions are consistent with local competitive practices and regulations.

The following table sets forth the funded status of the plans for us and Huntsman International and the amounts recognized in our consolidated balance sheets at December 31, 2022 and 2021 (dollars in millions):

	Defined benefit plans				Other postretirement benefit plans			
	2022		2021		2022		2021	
	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 year	$ 1,048	$ 2,032	$ 1,091	$ 2,240	$ 61	$ —	$ 65	$ —
Service cost	19	26	20	30	1	—	2	—
Interest cost	32	23	31	17	2	—	2	—
Participant contributions	—	5	—	5	2	—	2	—
Plan amendments	—	(2)	—	1	—	—	—	—
Foreign currency exchange rate changes	—	(131)	—	(100)	—	—	—	—
Settlements/curtailments/divestitures	(26)	(5)	—	(1)	—	—	—	—
Actuarial gain	(244)	(534)	(37)	(99)	(10)	—	(2)	—
Benefits paid	(59)	(60)	(57)	(61)	(9)	—	(8)	—
Benefit obligation at end of year	$ 770	$ 1,354	$ 1,048	$ 2,032	$ 47	$ —	$ 61	$ —
Change in plan assets								
Fair value of plan assets at beginning of year	$ 925	$ 1,970	$ 866	$ 1,956	$ —	$ —	$ —	$ —
Actual return on plan assets	(150)	(381)	103	125	—	—	—	—
Foreign currency exchange rate changes	—	(129)	—	(89)	—	—	—	—
Participant contributions	—	5	—	5	2	—	2	—
Settlement/transfers/divestitures	(30)	(5)	—	—	—	—	—	—
Company contributions	5	36	13	34	7	—	6	—
Benefits paid	(59)	(60)	(57)	(61)	(9)	—	(8)	—
Fair value of plan assets at end of year	$ 691	$ 1,436	$ 925	$ 1,970	$ —	$ —	$ —	$ —
Funded status								
Fair value of plan assets	$ 691	$ 1,436	$ 925	$ 1,970	$ —	$ —	$ —	$ —
Benefit obligation	770	1,354	1,048	2,032	47	—	61	—
(Under) over funded status	$ (79)	$ 82	$ (123)	$ (62)	$ (47)	$ —	$ (61)	$ —
Amounts recognized in balance sheet:								
Noncurrent asset	$ —	$ 196	$ —	$ 144	$ —	$ —	$ —	$ —
Current liability	(6)	(4)	(6)	(3)	(5)	—	(6)	—
Noncurrent liability	(73)	(110)	(117)	(203)	(42)	—	(55)	—
Net (liability) asset	$ (79)	$ 82	$ (123)	$ (62)	$ (47)	$ —	$ (61)	$ —

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	Defined benefit plans				Other postretirement benefit plans			
	2022		2021		2022		2021	
	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
Amounts recognized in accumulated other comprehensive loss:								
Net actuarial loss	$ 202	$ 511	$ 255	$ 662	$ 11	$ —	$ 23	$ —
Prior service credit	(6)	(18)	(8)	(20)	(16)	—	(21)	—
Total	$ 196	$ 493	$ 247	$ 642	$ (5)	$ —	$ 2	$ —

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	Defined benefit plans				Other postretirement benefit plans			
	2022		2021		2022		2021	
	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
Amounts recognized in accumulated other comprehensive loss:								
Net actuarial loss	$ 202	$ 511	$ 255	$ 662	$ 11	$ —	$ 23	$ —
Prior service credit	(6)	(18)	(8)	(20)	(16)	—	(21)	—
Total	$ 196	$ 493	$ 247	$ 642	$ (5)	$ —	$ 2	$ —

During 2022, the overall decreases in our U.S. pension and other postretirement benefit plan obligations were primarily due to increases in discount rates. The overall decrease in our non-U.S. pension plan obligation was primarily due to increases in discount rates in most countries with significant impacts from Germany, The Netherlands, Switzerland and the U.K., as well as unfavorable investment returns compared to expectations, primarily from The Netherlands, the U.S. and the U.K.

During 2021, the overall decreases in our U.S. pension and other postretirement benefit plan obligations were primarily due to increases in discount rates. The overall decrease in our non-U.S. pension plan obligation was primarily due to the increases in discount rates in most countries with significant impacts from Switzerland, the U.K. and other European countries, as well as strong investment returns compared to expectations, primarily from Belgium, Switzerland and the U.K., offset with asset losses in The Netherlands due to exchange rate movements.

Components of net periodic benefit costs for the years ended December 31, 2022, 2021 and 2020 were as follows (dollars in millions):

Huntsman Corporation

	Defined benefit plans					
	U.S. plans			Non-U.S. plans		
	2022	2021	2020	2022	2021	2020
Service cost	$ 19	$ 20	$ 21	$ 26	$ 30	$ 28
Interest cost(a)	32	31	37	23	17	23
Expected return on plan assets(a)	(62)	(62)	(59)	(87)	(91)	(97)
Amortization of prior service credit(a)	(2)	(2)	(2)	(3)	(4)	(3)
Amortization of actuarial loss(a)	20	31	28	27	48	41
Settlement loss(a)	5	—	—	—	3	—
Net periodic benefit cost (credit)	$ 12	$ 18	$ 25	$ (14)	$ 3	$ (8)

	Other postretirement benefit plans					
	U.S. plans			Non-U.S. plans		
	2022	2021	2020	2022	2021	2020
Service cost	$ 1	$ 2	$ 1	$ —	$ —	$ —
Interest cost(a)	2	2	2	—	—	—
Amortization of prior service credit(a)	(5)	(5)	(5)	—	—	—
Amortization of actuarial loss(a)	2	2	1	—	—	—
Net periodic benefit cost (credit)	$ —	$ 1	$ (1)	$ —	$ —	$ —

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	Defined benefit plans					
	U.S. plans			Non-U.S. plans		
	2022	2021	2020	2022	2021	2020
Service cost	$ 19	$ 20	$ 21	$ 26	$ 30	$ 28
Interest cost(a)	32	31	37	23	17	23
Expected return on plan assets(a)	(62)	(62)	(59)	(87)	(91)	(97)
Amortization of prior service credit(a)	(2)	(2)	(2)	(3)	(4)	(3)
Amortization of actuarial loss(a)	20	31	28	27	51	44
Settlement loss(a)	5	—	—	—	3	—
Net periodic benefit cost (credit)	$ 12	$ 18	$ 25	$ (14)	$ 6	$ (5)

	Other postretirement benefit plans					
	U.S. plans			Non-U.S. plans		
	2022	2021	2020	2022	2021	2020
Service cost	$ 1	$ 2	$ 1	$ —	$ —	$ —
Interest cost(a)	2	2	2	—	—	—
Amortization of prior service credit(a)	(5)	(5)	(5)	—	—	—
Amortization of actuarial loss(a)	2	2	1	—	—	—
Net periodic benefit cost (credit)	$ —	$ 1	$ (1)	$ —	$ —	$ —

(a) Amounts are presented in other income, net.

The amounts recognized in net periodic benefit cost and other comprehensive income (loss) as of December 31, 2022, 2021 and 2020 were as follows (dollars in millions):

Huntsman Corporation

	Defined benefit plans					
	U.S. plans			Non-U.S. plans		
	2022	2021	2020	2022	2021	2020
Current year actuarial (gain) loss	$ (28)	$ (78)	$ 40	$ (115)	$ (150)	$ 87
Amortization of actuarial loss	(20)	(31)	(28)	(36)	(59)	(53)
Current year prior service (credit) cost	—	—	—	(3)	1	—
Amortization of prior service credit	2	2	2	5	5	5
Settlements	(5)	—	(42)	—	(3)	—
Total recognized in other comprehensive income (loss)	(51)	(107)	(28)	(149)	(206)	39
Amounts related to discontinued operations	2	20	17	57	25	(9)
Total recognized in other comprehensive income (loss) in continuing operations	(49)	(87)	(11)	(92)	(181)	30
Net periodic benefit cost (credit)	12	18	25	(14)	3	(8)
Total recognized in net periodic benefit cost and other comprehensive (loss) income	$ (37)	$ (69)	$ 14	$ (106)	$ (178)	$ 22

	Other postretirement benefit plans					
	U.S. plans			Non-U.S. plans		
	2022	2021	2020	2022	2021	2020
Current year actuarial (gain) loss	$ (10)	$ (2)	$ 9	$ —	$ —	$ —
Amortization of actuarial loss	(2)	(2)	(1)	—	—	—
Current year prior service credit	—	—	—	—	—	—
Amortization of prior service credit	5	5	5	—	—	—
Settlements	—	—	(1)	—	—	—
Curtailment loss	—	—	2	—	—	—
Total recognized in other comprehensive income (loss)	(7)	1	14	—	—	—
Amounts related to discontinued operations	2	1	(1)	—	—	—
Total recognized in other comprehensive income (loss) in continuing operations	(5)	2	13	—	—	—
Net periodic benefit cost (credit)	—	1	(1)	—	—	—
Total recognized in net periodic benefit cost and other comprehensive (loss) income	$ (5)	$ 3	$ 12	$ —	$ —	$ —

Huntsman International

	Defined benefit plans					
	U.S. plans			Non-U.S. plans		
	2022	2021	2020	2022	2021	2020
Current year actuarial (gain) loss	$ (28)	$ (78)	$ 40	$ (115)	$ (150)	$ 87
Amortization of actuarial loss	(20)	(31)	(28)	(36)	(62)	(56)
Current year prior service (credit) cost	—	—	—	(3)	1	—
Amortization of prior service credit	2	2	2	5	5	5
Settlements	(5)	—	(42)	—	(3)	—
Total recognized in other comprehensive income (loss)	(51)	(107)	(28)	(149)	(209)	36
Amounts related to discontinued operations	2	20	17	57	25	(9)
Total recognized in other comprehensive income (loss) in continuing operations	(49)	(87)	(11)	(92)	(184)	27
Net periodic benefit cost (credit)	12	18	25	(14)	6	(5)
Total recognized in net periodic benefit cost and other comprehensive (loss) income	$ (37)	$ (69)	$ 14	$ (106)	$ (178)	$ 22

	Other postretirement benefit plans					
	U.S. plans			Non-U.S. plans		
	2022	2021	2020	2022	2021	2020
Current year actuarial (gain) loss	$ (10)	$ (2)	$ 9	$ —	$ —	$ —
Amortization of actuarial loss	(2)	(2)	(1)	—	—	—
Current year prior service credit	—	—	—	—	—	—
Amortization of prior service credit	5	5	5	—	—	—
Settlements	—	—	(1)	—	—	—
Curtailment loss	—	—	2	—	—	—
Total recognized in other comprehensive income (loss)	(7)	1	14	—	—	—
Amounts related to discontinued operations	2	1	(1)	—	—	—
Total recognized in other comprehensive income (loss) in continuing operations	(5)	2	13	—	—	—
Net periodic benefit cost (credit)	—	1	(1)	—	—	—
Total recognized in net periodic benefit cost and other comprehensive (loss) income	$ (5)	$ 3	$ 12	$ —	$ —	$ —

The following weighted-average assumptions were used to determine the projected benefit obligation at the measurement date and the net periodic pension cost for the year:

	Defined benefit plans					
	U.S. plans			Non-U.S. plans		
	2022	2021	2020	2022	2021	2020
Projected benefit obligation						
Discount rate	5.75%	3.11%	2.82%	3.67%	1.20%	0.76%
Rate of compensation increase	4.24%	4.09%	4.09%	2.93%	2.86%	2.64%
Interest credit rate	5.15%	5.15%	5.15%	2.35%	0.87%	0.52%
Net periodic pension cost						
Discount rate	3.11%	2.82%	3.59%	1.20%	0.76%	1.17%
Rate of compensation increase	4.09%	4.09%	4.09%	2.86%	2.64%	2.71%
Expected return on plan assets	7.17%	7.52%	7.52%	4.80%	4.80%	5.79%
Interest credit rate	5.15%	5.15%	5.15%	0.87%	0.52%	0.65%

	Other postretirement benefit plans					
	U.S. plans			Non-U.S. plans		
	2022	2021	2020	2022	2021	2020
Projected benefit obligation						
Discount rate	5.80%	3.01%	2.63%	5.10%	2.80%	2.30%
Net periodic pension cost						
Discount rate	3.01%	2.63%	3.46%	2.80%	2.30%	2.90%

At December 31, 2022 and 2021, the health care trend rate used to measure the expected increase of the cost of benefits was assumed to be 6.75% and 6%, respectively, decreasing to 5% in 2029 and thereafter.

The projected benefit obligation and fair value of plan assets for the defined benefit plans with projected benefit obligations in excess of plan assets as of December 31, 2022 and 2021 were as follows (dollars in millions):

	U.S. plans		Non-U.S. plans	
	2022	2021	2022	2021
Projected benefit obligation in excess of plan assets				
Projected benefit obligation	$ 770	$ 1,048	$ 116	$ 710
Fair value of plan assets	691	925	3	505

The projected benefit obligation, accumulated benefit obligation and fair value of plan assets for the defined benefit plans with an accumulated benefit obligation in excess of plan assets as of December 31, 2022 and 2021 were as follows (dollars in millions):

	U.S. plans		Non-U.S. plans	
	2022	2021	2022	2021
Accumulated benefit obligation in excess of plan assets				
Projected benefit obligation	$ 770	$ 1,048	$ 116	$ 554
Accumulated benefit obligation	758	1,031	108	515
Fair value of plan assets	691	925	3	357

The accumulated benefit obligation of our defined pension plans as of December 31, 2022 and 2021 was $2,057 million and $2,938 million, respectively.

Expected future contributions and benefit payments related to continuing operations are as follows (dollars in millions):

	U.S. plans		Non-U.S. plans	
	Defined benefit plans	Other postretirement benefit plans	Defined benefit plans	Other postretirement benefit plans
2023 expected employer contributions				
To plan trusts	$ 6	$ 5	$ 26	$ —
Expected benefit payments				
2023	62	5	82	—
2024	65	5	67	—
2025	66	5	67	—
2026	67	5	67	—
2027	98	5	73	—
2028 - 2032	308	20	403	—

Our investment strategy with respect to pension assets is to pursue an investment plan that, over the long term, is expected to protect the funded status of the plan, enhance the real purchasing power of plan assets, and not threaten the plan's ability to meet currently committed obligations. Additionally, our investment strategy is to achieve returns on plan assets, subject to a prudent level of portfolio risk. Plan assets are invested in a broad range of investments. These investments are diversified in terms of domestic and international equities, both growth and value funds, including small, mid and large capitalization equities; short-term and long-term debt securities; real estate; and cash and cash equivalents. The investments are further diversified within each asset category. The portfolio diversification provides protection against a single investment or asset category having a disproportionate impact on the aggregate performance of the plan assets.

Our pension plan assets are managed by outside investment managers. The investment managers value our plan assets using quoted market prices, other observable inputs or unobservable inputs. For certain assets, the investment managers obtain third-party appraisals at least annually, which use valuation techniques and inputs specific to the applicable property, market, or geographic location. During 2022 and 2021, there were no transfers into or out of Level 3 assets.

We have established target allocations for each asset category. Our pension plan assets are periodically rebalanced based upon our target allocations.

The fair value of plan assets for the pension plans was $2.1 billion and $2.9 billion at December 31, 2022 and 2021, respectively. The following plan assets are measured at fair value on a recurring basis (dollars in millions):

		Fair value amounts using		
Asset category	December 31, 2022	Quoted prices in active markets for identical assets (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)
U.S. pension plans:				
Equities	$ 324	$ 180	$ 144	$ —
Fixed income	327	143	184	—
Real estate/other	18	18	—	—
Cash	22	22	—	—
Total U.S. pension plan assets	$ 691	$ 363	$ 328	$ —
Non-U.S. pension plans:				
Equities	$ 298	$ 96	$ 202	$ —
Fixed income	622	391	231	—
Real estate/other	386	46	269	71
Cash	130	130	—	—
Total Non-U.S. pension plan assets	$ 1,436	$ 663	$ 702	$ 71

		Fair value amounts using		
Asset category	December 31, 2021	Quoted prices in active markets for identical assets (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)
U.S. pension plans:				
Equities	$ 446	$ 240	$ 206	$ —
Fixed income	415	169	246	—
Real estate/other	33	20	1	12
Cash	31	31	—	—
Total U.S. pension plan assets	$ 925	$ 460	$ 453	$ 12
Non-U.S. pension plans:				
Equities	$ 543	$ 204	$ 339	$ —
Fixed income	894	579	315	—
Real estate/other	451	86	278	87
Cash	82	82	—	—
Total Non-U.S. pension plan assets	$ 1,970	$ 951	$ 932	$ 87

The following table reconciles the beginning and ending balances of plan assets measured at fair value using unobservable inputs (Level 3) (dollars in millions):

	Real Estate/Other	
	Year ended December 31,	
	2022	2021
Fair value measurements of plan assets using significant unobservable inputs (Level 3)		
Balance at beginning of period	$ 99	$ 134
Return on pension plan assets	(5)	9
Purchases, sales and settlements	(23)	(44)
Transfers into (out of) Level 3	—	—
Balance at end of period	$ 71	$ 99

Based upon historical returns, the expectations of our investment committee and outside advisors, the expected long-term rate of return on the pension assets is estimated to be between 4.80% and 7.52%. The asset allocation for our pension plans at December 31, 2022 and 2021 and the target allocation for 2023, by asset category are as follows:

Asset category	Target allocation 2023	Allocation at December 31, 2022	2021
U.S. pension plans:			
Equities	48%	47%	48%
Fixed income	46%	47%	45%
Real estate/other	3%	3%	4%
Cash	3%	3%	3%
Total U.S. pension plans	100%	100%	100%
Non-U.S. pension plans:			
Equities	21%	21%	28%
Fixed income	42%	43%	45%
Real estate/other	30%	27%	23%
Cash	7%	9%	4%
Total non-U.S. pension plans	100%	100%	100%

Equity securities in our pension plans did not include any direct investments in equity securities of our Company or our affiliates at the end of 2022.

Defined Contribution Plans

We have defined contribution plans in a variety of global locations. Our total combined expense for our defined contribution plans for the years ended December 31, 2022, 2021 and 2020 was $29 million, $24 million and $18 million, respectively, primarily related to our U.S. plans.

In the U.S., we had a money purchase pension plan that covered substantially all of our domestic employees who were hired prior to January 1, 2004. Employer contributions were made based on a percentage of employees' earnings (ranging up to 8%). During 2014, we closed this plan to non-union participants, and in 2015, we closed this plan to union associates. We continue to provide equivalent benefits to those who were covered under this plan into their salary deferral account.

We have a salary deferral plan covering substantially all U.S. employees. Plan participants may elect to make voluntary contributions to this plan up to a specified amount of their compensation. We contribute an amount equal to the participant's contribution, not to exceed 4% of the participant's compensation. For new hires who are not eligible for the cash balance plan, and associates who were covered by the money purchase pension plan prior to its closure, we contribute an additional amount into their salary deferral accounts, not to exceed 6% of the participant's compensation.

Supplemental Salary Defferal Plan And Supplemental Executive Retirement Plan

The Huntsman Supplemental Savings Plan (the "SSP") is a non-qualified plan covering key management employees and allows participants to defer amounts that would otherwise be paid as compensation. The participant can defer up to 75% of their salary and bonus each year. This plan also provides benefits that would be provided under the Huntsman Salary Deferral Plan if that plan were not subject to legal limits on the amount of contributions that can be allocated to an individual in a single year. The SSP was amended and restated effective as of January 1, 2005 to allow eligible executive employees to comply with Section 409A of the Internal Revenue Code of 1986. Assets of these plans are included in other noncurrent assets and as of December 31, 2022 and 2021 were $41 million and $48 million, respectively. During each of the years ended December 31, 2022, 2021 and 2020, we expensed a total of $1 million as contributions to the SSP.

The Huntsman Supplemental Executive Retirement Plan is an unfunded non-qualified pension plan established to provide certain executive employees with benefits that could not be provided, due to legal limitations, under the Huntsman Defined Benefit Pension Plan, a qualified defined benefit pension plan, and the Huntsman Money Purchase Pension Plan, a qualified money purchase pension plan.

Stock-Based Incentive Plan

On May 5, 2016, our stockholders approved a new Huntsman Corporation 2016 Stock Incentive Plan (the "2016 Stock Incentive Plan"), which reserved 8.2 million shares for issuance. The Huntsman Corporation Stock Incentive Plan, as amended and restated (the "Prior Plan"), remains in effect for outstanding awards granted pursuant to the Prior Plan, but no further awards may be granted under the Prior Plan. Under the 2016 Stock Incentive Plan, we may grant nonqualified stock options, incentive stock options, stock appreciation rights, restricted stock, phantom stock, performance share units and other stock-based awards to our employees, directors and consultants and to employees and consultants of our subsidiaries, provided that incentive stock options may be granted solely to employees. The terms of the grants under both the 2016 Stock Incentive Plan and the Prior Plan are fixed at the grant date. As of December 31, 2022, we had approximately 6 million shares remaining under the 2016 Stock Incentive Plan available for grant. See "Note 23. Stock-Based Compensation Plan."

International Plans

International employees are covered by various post-employment arrangements consistent with local practices and regulations. Such obligations are included in other long-term liabilities in our consolidated balance sheets.

19. INCOME TAXES

The following is a summary of U.S. and non-U.S. provisions for current and deferred income taxes from continuing operations (dollars in millions):

Huntsman Corporation

	Year ended December 31,		
	2022	2021	2020
Income tax expense (benefit):			
U.S.			
Current	$ 6	$ 118	$ (216)
Deferred	57	(70)	167
Non-U.S.			
Current	91	112	83
Deferred	32	31	8
Total	$ 186	$ 191	$ 42

Huntsman International

	Year ended December 31,		
	2022	2021	2020
Income tax expense (benefit):			
U.S.			
Current	$ 6	$ 120	$ (215)
Deferred	59	(71)	166
Non-U.S.			
Current	91	112	83
Deferred	32	31	8
Total	$ 188	$ 192	$ 42

The following schedule reconciles the differences between the U.S. federal income taxes at the U.S. statutory rate to our provision for income taxes from continuing operations (dollars in millions):

Huntsman Corporation

	Year ended December 31,		
	2022	2021	2020
Income from continuing operations before income taxes	$ 697	$ 1,246	$ 331
Expected tax expense at U.S. statutory rate of 21%	$ 146	$ 261	$ 70
Change resulting from:			
State tax expense, net of federal benefit	3	15	(4)
Non-U.S. tax rate differentials	8	16	16
Other non-U.S. tax effects, including nondeductible expenses and other withholding taxes	(10)	16	4
Venator investment basis difference and fair market value adjustments	—	(29)	—
Change in valuation allowance on capital loss related to Venator investment	—	(28)	—
Non-U.S. income subject to U.S. tax not offset by U.S. foreign tax credits	3	(19)	7
Tax authority audits and dispute resolutions	6	4	—
Change in valuation allowance	38	(9)	(14)
Deferred tax effects of non-U.S. tax rate changes	(2)	(3)	(2)
Impact of equity method investments	(21)	(37)	(10)
Sale of the India-based DIY business	—	(4)	(35)
Non-U.S. withholding tax on repatriated earnings, net of U.S. foreign tax credits	17	14	19
Other U.S. tax effects, including nondeductible expenses and other credits	(2)	(6)	(9)
Total income tax expense	$ 186	$ 191	$ 42

Huntsman International

	Year ended December 31,		
	2022	2021	2020
Income from continuing operations before income taxes	$ 700	$ 1,250	$ 332
Expected tax expense at U.S. statutory rate of 21%	$ 146	$ 261	$ 70
Change resulting from:			
State tax expense, net of federal benefit	3	15	(4)
Non-U.S. tax rate differentials	8	16	16
Other non-U.S. tax effects, including nondeductible expenses and other withholding taxes	(10)	16	4
Venator investment basis difference and fair market value adjustments	—	(29)	—
Change in valuation allowance on capital loss related to Venator investment	—	(28)	—
Non-U.S. income subject to U.S. tax not offset by U.S. foreign tax credits	3	(19)	7
Tax authority audits and dispute resolutions	6	4	—
Change in valuation allowance	38	(9)	(14)
Deferred tax effects of non-U.S. tax rate changes	(2)	(3)	(2)
Impact of equity method investments	(21)	(37)	(10)
Sale of the India-based DIY business	—	(4)	(35)
Non-U.S. withholding tax on repatriated earnings, net of U.S. foreign tax credits	17	14	19
Other U.S. tax effects, including nondeductible expenses and other credits	—	(5)	(9)
Total income tax expense	$ 188	$ 192	$ 42

During 2022, 2021 and 2020, the average statutory rate for countries with pre-tax income (in 2022, primarily our operations in China (25% statutory rate), Germany (30% statutory rate), and Luxembourg (25% statutory rate), was higher than the average statutory rate for countries with pre-tax losses, resulting in a net expense of $8 million, $16 million and $16 million, respectively, as compared to the 21% U.S. statutory rate reflected in the reconciliation above.

During 2021, Albemarle agreed to waive any appeal in connection with an arbitration award we won and pay us $665 million (approximately $465 million, net of related legal fees). Of the $465 million income recorded, $237 million was capital gain for tax purposes. The realization of capital gains allowed us to release the valuation allowance of $237 million ($57 million tax-effected) related to the capital loss carryover and tax basis in our Venator investment, as further discussed below.

Under the U.S. Tax Reform Act's global intangible low-taxed income ("GILTI") provision, our non-U.S. operations are generally subject to U.S. tax. We have elected to treat the GILTI as a current-period expense when incurred. The stated purpose of the GILTI rules is to generate additional U.S. tax related to income in non-U.S. jurisdictions which incur less than a blended 13.125% non-U.S. tax rate. Our non-U.S. income is subject to a blended rate greater than 13.125%; however, in practice, the GILTI regulations result in additional tax liability as a result of expense allocations which limit our ability to utilize foreign tax credits against the GILTI inclusion. For 2022, 2021 and 2020, we have incurred a tax expense of $3 million, tax benefit of $4 million and tax expense of $7 million, respectively, resulting from these expense allocations, net of other U.S. taxation on foreign operations. Our results for 2021 included a $15 million benefit from the Foreign Derived Intangible Income ("FDII") provisions of the U.S. Tax Reform Act.

The 2020 sale and related 2021 earnout provision of the India-based DIY business created global taxable gains different than the gains for U.S. GAAP purposes. Because this transaction was the disposition of a legal entity in India, we paid only India capital gains tax on the transaction. The difference in the global taxation of this transaction and the U.S. GAAP gains at the U.S. statutory tax rate benefit for 2021 and 2020 was $4 million and $35 million, respectively.

The components of income from continuing operations before income taxes were as follows (dollars in millions):

Huntsman Corporation

	Year ended December 31,		
	2022	2021	2020
U.S.	$ 273	$ 530	$ (231)
Non-U.S.	424	716	562
Total	$ 697	$ 1,246	$ 331

Huntsman International

	Year ended December 31,		
	2022	2021	2020
U.S.	$ 276	$ 534	$ (230)
Non-U.S.	424	716	562
Total	$ 700	$ 1,250	$ 332

Components of deferred income tax assets and liabilities were as follows (dollars in millions):

Huntsman Corporation

	December 31,	
	2022	2021
Deferred income tax assets:		
Net operating loss carryforwards	$ 220	$ 221
Operating leases	100	106
Pension and other employee compensation	65	110
Deferred interest	49	35
Basis difference in Venator investment	45	42
Capitalized research and development costs	30	9
Property, plant and equipment	25	19
Intangible assets	24	28
Intercompany prepayments (FDII related)	9	56
Other, net	45	26
Total	$ 612	$ 652
Deferred income tax liabilities:		
Property, plant and equipment	$ (263)	$ (234)
Operating leases	(102)	(105)
Intangible assets	(83)	(94)
Pension and other employee compensation	(47)	(36)
Outside basis difference in subsidiaries	(31)	(17)
Unrealized currency gains	(11)	(6)
Other, net	(9)	(10)
Total	$ (546)	$ (502)
Net deferred tax asset before valuation allowance	$ 66	$ 150
Valuation allowance—net operating losses and other	(169)	(131)
Net deferred tax (liability) asset	$ (103)	$ 19
Non-current deferred tax asset	$ 147	$ 180
Non-current deferred tax liability	(250)	(161)
Net deferred tax (liability) asset	$ (103)	$ 19

Huntsman International

	December 31, 2022	December 31, 2021
Deferred income tax assets:		
Net operating loss carryforwards	$ 220	$ 221
Operating leases	100	106
Pension and other employee compensation	65	110
Deferred interest	49	35
Basis difference in Venator investment	45	42
Capitalized research and development costs	30	9
Property, plant and equipment	25	19
Intangible assets	24	28
Intercompany prepayments (FDII related)	9	56
Other, net	45	26
Total	$ 612	$ 652
Deferred income tax liabilities:		
Property, plant and equipment	$ (263)	$ (234)
Operating leases	(102)	(105)
Intangible assets	(83)	(94)
Pension and other employee compensation	(47)	(36)
Outside basis difference in subsidiaries	(31)	(17)
Unrealized currency gains	(11)	(6)
Other, net	(13)	(12)
Total	$ (550)	$ (504)
Net deferred tax asset before valuation allowance	$ 62	$ 148
Valuation allowance—net operating losses and other	(169)	(131)
Net deferred tax (liability) asset	$ (107)	$ 17
Non-current deferred tax asset	$ 147	$ 180
Non-current deferred tax liability	(254)	(163)
Net deferred tax (liability) asset	$ (107)	$ 17

We evaluate deferred tax assets to determine whether it is more likely than not that they will be realized. Valuation allowances are reviewed each period on a tax jurisdiction basis to analyze whether there is sufficient positive or negative evidence to support a change in judgment about the realizability of the related deferred tax assets. These conclusions require significant judgment. In evaluating the objective evidence that historical results provide, we consider cumulative income or losses during the applicable three-year period. Cumulative losses incurred over the three-year period limits our ability to consider other evidence such as our projections for the future. Our judgments regarding valuation allowances are also influenced by factors outside of business results, including the costs and risks associated with any tax planning idea associated with utilizing a deferred tax asset.

As a result of income tax accounting guidance to use a three-year cumulative loss and with the negative economic impacts of recent events, including the impacts of COVID-19 and economic challenges in Europe, we established a $49 million valuation allowance against the entire net deferred tax asset in The Netherlands as of December 31, 2022.

We have gross net operating losses (“NOLs”) of $828 million ($211 million tax-effected) in various non-U.S. jurisdictions. While the majority of the non-U.S. NOLs have no expiration date, $41 million ($8 million tax-effected) have a limited life (of which $8 million ($2 million tax-effected) are subject to a valuation allowance), of which none are scheduled to expire in 2023. We had no NOLs expire unused in 2022.

We have gross U.S. federal NOLs of $43 million ($9 million tax-effected), which were primarily acquired through acquisitions subject to tax change of control limitations. We expect to be able to utilize all of these NOLs, and therefore they are not subject to a valuation allowance.

Included in the $828 million of gross non-U.S. NOLs is $339 million ($85 million tax-effected) attributable to our Luxembourg entities. As of December 31, 2022, due to the uncertainty surrounding the realization of the benefits of these losses, there is a valuation allowance of $42 million against these net tax-effected NOLs of $85 million.

We have $2 million tax effected state capital loss carryovers, all of which are subject to a valuation allowance. Capital loss carryovers may only be utilized against capital gains and have a 5-year carryforward period.

During 2021, we recognized $237 million ($57 million tax-effected) of capital gain from the Albemarle Settlement, of which we utilized $28 million tax-effected of U.S. capital loss carryovers (which were subject to a valuation allowance) and released $29 million tax-effected valuation allowance against the tax basis greater than book basis in our Venator investment that will now be realizable. The deferred tax assets relating to the excess built-in capital loss in our remaining interest in Venator are subject to a full valuation allowance.

During 2019, based on our expectation that our remaining interest in Venator would be sold on or before December 31, 2023, we recorded $153 million of deferred tax benefit relating to the portion of the $199 million tax basis greater than book basis in our Venator investment. We expected to be able to utilize such future capital losses on our Venator investment against capital gains anticipated on the sale of our Chemical Intermediates Businesses. We established a valuation allowance of $46 million on the excess unrealizable built-in capital loss deferred tax asset. We also recognized $18 million of tax benefit relating to realized tax losses on our Venator investment. During 2020, we sold approximately 42.4 million ordinary shares of our remaining interest in Venator, which allowed us to utilize the expected portion of the losses against the gains on the sale of the Chemical Intermediates Businesses.

Uncertainties regarding expected future income in certain jurisdictions could affect the realization of deferred tax assets in those jurisdictions and result in additional valuation allowances in future periods, or, in the case of unexpected pre-tax earnings, the release of valuation allowances in future periods.

The following is a summary of changes in the valuation allowance (dollars in millions):

Huntsman Corporation

	2022	2021	2020
Valuation allowance as of January 1	$ 131	$ 206	$ 231
Valuation allowance as of December 31	169	131	206
Net (increase) decrease	(38)	75	25
Foreign currency movements	(4)	(4)	6
Decrease to deferred tax assets with no impact on operating tax expense, including an offsetting (decrease) increase to valuation allowances	4	(62)	(17)
Change in valuation allowance per rate reconciliation	$ (38)	$ 9	$ 14
Components of change in valuation allowance affecting tax expense:			
Pre-tax income and losses in jurisdictions with valuation allowances resulting in no tax expense or benefit	$ 13	$ 13	$ 14
Releases of valuation allowances in various jurisdictions	—	2	—
Establishments of valuation allowances in various jurisdictions	(51)	(6)	—
Change in valuation allowance per rate reconciliation	$ (38)	$ 9	$ 14

Huntsman International

	2022	2021	2020
Valuation allowance as of January 1	$ 131	$ 206	$ 231
Valuation allowance as of December 31	169	131	206
Net (increase) decrease	(38)	75	25
Foreign currency movements	(4)	(4)	6
Decrease to deferred tax assets with no impact on operating tax expense, including an offsetting (decrease) increase to valuation allowances	4	(62)	(17)
Change in valuation allowance per rate reconciliation	$ (38)	$ 9	$ 14
Components of change in valuation allowance affecting tax expense:			
Pre-tax income and losses in jurisdictions with valuation allowances resulting in no tax expense or benefit	$ 13	$ 13	$ 14
Releases of valuation allowances in various jurisdictions	—	2	—
Establishments of valuation allowances in various jurisdictions	(51)	(6)	—
Change in valuation allowance per rate reconciliation	$ (38)	$ 9	$ 14

The following is a reconciliation of our unrecognized tax benefits (dollars in millions):

	2022	2021
Unrecognized tax benefits as of January 1	$ 48	$ 16
Gross increases and decreases—tax positions taken during a prior period	6	30
Gross increases and decreases—tax positions taken during the current period	4	2
Reductions resulting from the lapse of statutes of limitation	—	(1)
Foreign currency movements	(1)	1
Unrecognized tax benefits as of December 31	$ 57	$ 48

As of December 31, 2022 and 2021, the amount of unrecognized tax benefits (not including interest and penalties) which, if recognized, would affect the effective tax rate is $7 million and $11 million, respectively During 2021, we recorded a $31 million increase to our unrecognized tax benefits related to the timing of tax losses on our Venator investment. This increase was offset by an increase in net deferred tax assets and, therefore, did not affect income tax expense but represents additional cash taxes that could be due if the position is not sustained on audit. Upon the legal disposition of our remaining Venator investment and the filing of associated tax returns (which we estimate is likely to occur before the position would be settled with tax authorities), the unrecognized tax benefit will be reversed with an offset to net deferred tax assets, and, therefore, no impact to income tax expense and cash taxes.

During 2022, we concluded and settled tax examinations in the U.S. (federal and various states), China and Japan. During 2021, we concluded and settled tax examinations in the U.S. (federal and various states), Germany, Taiwan and Thailand. During 2020, we concluded and settled tax examinations in the U.S. (various states), Thailand and Korea.

During 2022, for unrecognized tax benefits that impact tax expense, we recorded a net increase in unrecognized tax benefits with a corresponding income tax expense (not including interest and penalties) of $3 million. During 2021, for unrecognized tax benefits that impact tax expense, we recorded a net increase in unrecognized tax benefits with a corresponding income tax expense (not including interest and penalties) of $3 million. During 2020, for unrecognized tax benefits that impact tax expense, we recorded a net increase in unrecognized tax benefits with a corresponding income tax benefit (not including interest and penalties) of $1 million.

In accordance with our accounting policy, we continue to recognize interest and penalties accrued related to unrecognized tax benefits in income tax expense (dollars in millions).

	Year ended December 31,		
	2022	2021	2020
Interest included in tax expense	$ 3	$ 1	$ 1
Penalties included in tax expense	—	—	—

	December 31,	
	2022	2021
Accrued liability for interest	$ 8	$ 6
Accrued liability for penalties	—	—

We conduct business globally, and as a result, we file income tax returns in U.S. federal, various U.S. state and various non-U.S. jurisdictions. The following table summarizes the tax years that remain subject to examination by major tax jurisdictions:

Tax jurisdiction	Open tax years
Belgium	2020 and later
China	2011 and later
France	2020 and later
Germany	2016 and later
Hong Kong	2015 and later
India	2006 and later
Italy	2016 and later
Japan	2022 and later
Mexico	2016 and later
Spain	2012 and later
Switzerland	2016 and later
The Netherlands	2020 and later
Thailand	2013 and later
United Kingdom	2019 and later
United States federal	2017 and later

Certain of our U.S. and non-U.S. income tax returns are currently under various stages of audit by applicable tax authorities and the amounts ultimately agreed upon in resolution of the issues raised may differ materially from the amounts accrued.

We estimate that it is reasonably possible that certain of our unrecognized tax benefits could change within 12 months of the reporting date with a resulting decrease in the unrecognized tax benefits within a reasonably possible range of $6 million to $38 million. For the 12-month period from the reporting date, we would expect that a decrease in our unrecognized tax benefits would result in no corresponding benefit to our income tax expense.

In connection with the provisions of U.S. Tax Reform, all non-U.S. earnings have generally been subject to U.S. tax and may be repatriated without incurring additional U.S. tax liability. Such repatriation may potentially be subject to limited foreign withholding taxes. We intend to continue to invest most of these earnings indefinitely within the local countries and do not expect to incur any significant additional taxes. There are certain countries where we do intend to repatriate some of our earnings, and we have accrued all withholding taxes for such amounts.

20. COMMITMENTS AND CONTINGENCIES

Purchase Commitments

We have various purchase commitments extending through 2030 for materials, supplies and services entered into in the ordinary course of business. Included in the purchase commitments table below are contracts which require minimum volume purchases that extend beyond one year or are renewable annually and have been renewed in 2022. Certain contracts allow for changes in minimum required purchase volumes in the event of a temporary or permanent shutdown of a facility. To the extent the contract requires a minimum notice period, such notice period has been included in the table below. The contractual purchase prices for substantially all of these contracts are variable based upon market prices, subject to annual negotiations. We have estimated our contractual obligations by using the terms of our current pricing for each contract. We also have a limited number of contracts which require a minimum payment even if no volume is purchased. We believe that all of our purchase obligations will be utilized in our normal operations. We made minimum payments of $3 million, $6 million and $2 million for the years ended December 31, 2022, 2021 and 2020, respectively, under such take or pay contracts without taking the product.

Total purchase commitments as of December 31, 2022 are as follows (dollars in millions):

Year ending December 31,	
2023	$ 2,075
2024	1,361
2025	869
2026	702
2027	648
Thereafter	2,175
	$ 7,830

Legal Matters

On April 29, 2022, a New Orleans jury awarded us approximately $94 million in our long-running court battle against Praxair/Linde, one of the industrial gas suppliers to our Geismar, Louisiana MDI manufacturing site. The case was filed after Praxair refused to properly maintain its own Geismar facility and then repeatedly failed to supply our requirements for industrial gas needed to manufacture MDI under long-term supply contracts that expired in 2013. After adding mandatory pre-judgment and post-judgment interest to the award, we expect damages to exceed $125 million before deducting for taxes and legal fees. The award is subject to a pending appeal, and if affirmed, we expect to receive net proceeds of approximately $50 million to $60 million. We have not yet recognized the award in our consolidated statements of operations and the timing of the resolution of this matter is unknown.

We are a party to various other proceedings instituted by private plaintiffs, governmental authorities and others arising under provisions of applicable laws, including various environmental, products liability and other laws. We do not believe that the outcome of any of these matters will have a material effect on our financial condition, results of operations or liquidity.

21. ENVIRONMENTAL, HEALTH AND SAFETY MATTERS

EHS Capital Expenditures

We may incur future costs for capital improvements and general compliance under EHS laws, including costs to acquire, maintain and repair pollution control equipment. For the years ended December 31, 2022, 2021 and 2020, our capital expenditures for EHS matters totaled $44 million, $36 million and $18 million, respectively. Because capital expenditures for these matters are subject to evolving regulatory requirements and depend, in part, on the timing, promulgation and enforcement of specific requirements, our capital expenditures for EHS matters have varied significantly from year to year and we cannot provide assurance that our recent expenditures are indicative of future amounts we may spend related to EHS and other applicable laws.

Environmental Reserves

We have accrued liabilities relating to anticipated environmental cleanup obligations, site reclamation and closure costs and known penalties. Liabilities are recorded when potential liabilities are either known or considered probable and can be reasonably estimated. Our liability estimates are calculated using present value techniques as appropriate and are based upon requirements placed upon us by regulators, available facts, existing technology and past experience. The environmental liabilities do not include amounts recorded as asset retirement obligations. We had accrued $5 million for environmental liabilities for both December 31, 2022 and 2021. Of these amounts, $1 million was classified as accrued liabilities in our consolidated balance sheets for both December 31, 2022 and 2021 and $4 million was classified as other noncurrent liabilities in our consolidated balance sheets for both December 31, 2022 and 2021. In certain cases, our remediation liabilities may be payable over periods of up to 30 years. We may incur losses for environmental remediation in excess of the amounts accrued; however, we are not able to estimate the amount or range of such potential excess.

Environmental Matters

Under the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA") and similar state laws, a current or former owner or operator of real property in the U.S. may be liable for remediation costs regardless of whether the release or disposal of hazardous substances was in compliance with law at the time it occurred, and a current owner or operator may be liable regardless of whether it owned or operated the facility at the time of the release. Outside the U.S., analogous contaminated property laws can hold past owners and/or operators liable for remediation at former facilities. Currently, there are approximately six former facilities or third-party sites in the U.S. for which we have been notified of potential claims against us for cleanup liabilities, including, but not limited to, sites listed under CERCLA. Based on current information and past experiences at other CERCLA sites, we do not expect these third-party claims to have a material impact on our consolidated financial statements.

Under the Resource Conservation and Recovery Act ("RCRA") in the U.S. and similar state laws, we may be required to remediate contamination originating from our properties. Similar laws exist in a number of non-U.S. locations in which we currently operate, or previously operated, manufacturing facilities. Some of our manufacturing sites have an extended history of industrial chemical manufacturing and use, including on-site waste disposal. We are aware of soil, groundwater or surface contamination from past operations at some of our sites, and we may find contamination at other sites in the future. For example, our Geismar, Louisiana facility is the subject of ongoing remediation requirements imposed under RCRA.

North Maybe Canyon Mine Remediation

The North Maybe Canyon Mine site is a CERCLA site and involves a former phosphorous mine near Soda Springs, Idaho, which is believed to have been operated by several companies, including a predecessor company to us. In 2004, the U.S. Forest Service notified us that we are a CERCLA potentially responsible party ("PRP") for contamination originating from the site. In February 2010, we and Wells Cargo (another PRP) agreed to conduct a Remedial Investigation/Feasibility Study of a portion of the site and are currently engaged in that process. At this time, we are unable to reasonably estimate our potential liabilities at this site.

22. HUNTSMAN CORPORATION STOCKHOLDERS' EQUITY

Share Repurchase Program

On October 26, 2021, our Board of Directors approved a new share repurchase program of $1 billion. In conjunction with the inception of this plan, we retired our prior share repurchase program. On March 25, 2022, our Board of Directors increased the authorization of our existing share repurchase program from $1 billion to $2 billion. The share repurchase program is supported by our free cash flow generation. Repurchases may be made in the open market, including through accelerated share repurchase programs, or in privately negotiated transactions, and repurchases may be commenced or suspended from time to time without prior notice. Shares of common stock acquired through the repurchase program are held in treasury at cost. During the year ended December 31, 2022, we repurchased 31,982,264 shares of our common stock for approximately $1,003 million, including commissions, under this share repurchase program. From January 1, 2023 through February 7, 2023, we repurchased an additional 691,326 shares of our common stock for approximately $21 million.

Dividends on Common Stock

The following tables represent dividends on common stock for our Company for the years ended December 31, 2022 and 2021 (dollars in millions, except per share payment amounts):

Quarter ended	Per share payment amount	Approximate amount paid
March 31, 2022	0.2125	$ 45
June 30, 2022	0.2125	44
September 30, 2022	0.2125	41
December 31, 2022	0.2125	40

Quarter ended	Per share payment amount	Approximate amount paid
March 31, 2021	$ 0.1625	$ 36
June 30, 2021	0.1875	41
September 30, 2021	0.1875	42
December 31, 2021	0.1875	40

23. STOCK-BASED COMPENSATION PLAN

Under the 2016 Stock Incentive Plan, we may grant nonqualified stock options, incentive stock options, stock appreciation rights, restricted stock, phantom stock, performance share units and other stock-based awards to our employees, directors and consultants and to employees and consultants of our subsidiaries, provided that incentive stock options may be granted solely to employees. The terms of the grants under both the 2016 Stock Incentive Plan and the Prior Plan are fixed at the grant date. Initially, there were approximately 8.2 million shares available for issuance under the 2016 Stock Incentive Plan. However, the number of shares available for issuance may be adjusted to include any shares surrendered, exchanged, forfeited or settled in cash pursuant to the Prior Plan. As of December 31, 2022, we had approximately 6 million shares remaining under the 2016 Stock Incentive Plan available for grant. Option awards have a maximum contractual term of 10 years and generally must have an exercise price at least equal to the market price of our common stock on the date the option award is granted. Outstanding stock-based awards generally vest over a three-year period.

The compensation cost under the 2016 Stock Incentive Plan and the Prior Plan for our Company and Huntsman International were as follows (dollars in millions):

	Year ended December 31,		
	2022	2021	2020
Huntsman Corporation compensation cost	$ 29	$ 30	$ 26
Huntsman International compensation cost	27	29	25

The total income tax benefit recognized in the statement of operations for stock-based compensation arrangements was $8 million, $3 million and $4 million for the years ended December 31, 2022, 2021 and 2020, respectively.

Stock Options

The fair value of each stock option award is estimated on the date of grant using the Black-Scholes valuation model that uses the assumptions noted in the following table. Expected volatilities are based on the historical volatility of our common stock through the grant date. The expected term of options granted was estimated based on the contractual term of the instruments and employees' expected exercise and post-vesting employment termination behavior. The risk-free rate for periods within the contractual life of the option was based on the U.S. Treasury yield curve in effect at the time of grant. The assumptions noted below represent the weighted averages of the assumptions utilized for all stock options granted during the year.

	Year ended December 31,		
	2022(1)	2021	2020
Dividend yield	NA	2.3%	3.0%
Expected volatility	NA	53.3%	53.1%
Risk-free interest rate	NA	0.7%	1.4%
Expected life of stock options granted during the period (in years)	NA	5.9	5.9

(1) During the year ended December 31, 2022, no stock options were granted.

A summary of stock option activity under the 2016 Stock Incentive Plan and the Prior Plan as of December 31, 2022 and changes during the year then ended is presented below:

Option awards	Shares (in thousands)		Weighted average exercise price	Weighted average remaining contractual term (years)		Aggregate intrinsic value (in millions)
Outstanding at January 1, 2022	4,054	$	21.62			
Granted	—		—			
Exercised	(603)		19.61			
Forfeited	(38)		25.67			
Outstanding at December 31, 2022	3,413		21.93	4.7	$	21
Exercisable at December 31, 2022	3,011		21.59	4.3		20

The weighted-average grant-date fair value of stock options granted during 2021 and 2020 was $11.48 and $8.25 per option, respectively. As of December 31, 2022, there was $1 million of total unrecognized compensation cost related to nonvested stock option arrangements granted under the 2016 Stock Incentive Plan and the Prior Plan. That cost is expected to be recognized over a weighted-average period of approximately 1.0 years.

During the years ended December 31, 2022, 2021 and 2020, the total intrinsic value of stock options exercised was approximately $12 million, $13 million and $9 million, respectively. Cash received from stock options exercised during the years ended December 31, 2022, 2021 and 2020 was approximately $6 million, $10 million and $3 million, respectively. The cash tax benefit from stock options exercised during each of the years ended December 31, 2022, 2021 and 2020 was approximately $2 million.

Nonvested Shares

Nonvested shares granted under the 2016 Stock Incentive Plan and the Prior Plan consist of restricted stock and performance share unit awards, which are accounted for as equity awards, and phantom stock, which is accounted for as a liability award because it can be settled in either stock or cash. The fair value of each restricted stock and phantom stock award is estimated to be the closing stock price of Huntsman's stock on the date of grant.

We grant two types of performance share unit awards. For one type of performance share unit award, the performance criteria are total stockholder return of our common stock relative to the total stockholder return of a specified industry peer group for the three-year performance periods. The fair value of each performance share unit award is estimated using a Monte Carlo simulation model that uses various assumptions, including an expected volatility rate and a risk-free interest rate. For the years ended December 31, 2022, 2021 and 2020, the weighted-average expected volatility rate was 43.5%, 44.9% and 34.0%, respectively, and the weighted average risk-free interest rate was 1.67%, 0.2% and 1.4%, respectively. For the performance share unit awards granted during the year ended December 31, 2022, 2021 and 2020, the number of shares earned varies based upon the Company achieving certain performance criteria over a three-year performance period.

During the first quarter of 2022, we began issuing a second type of performance award, which also includes a market condition. The performance criteria are our corporate free cash flow achieved relative to targets set by management, modified for the total stockholder return of our common stock relative to the total stockholder return of a specified industry peer group for the two-year performance period. The fair value of each performance share unit award is estimated using a Monte Carlo simulation model that uses various assumptions, including an expected volatility rate and a risk-free interest rate. For the year ended December 31, 2022, the weighted-average expected volatility rate was 37.9% and the weighted average risk-free interest rate was 1.43%. For the performance share unit awards granted during the year ended December 31, 2022, the number of shares earned varies based upon the Company achieving certain performance criteria over a two-year performance period.

A summary of the status of our nonvested shares as of December 31, 2022 and changes during the year then ended is presented below:

	Equity awards			Liability awards		
	Shares (in thousands)		Weighted average grant-date fair value	Shares (in thousands)		Weighted average grant-date fair value
Nonvested at January 1, 2022	2,178	$	25.07	367	$	24.91
Granted	717		47.98	102		41.04
Vested	(1,056) (1)(2)		23.12	(188)		24.00
Forfeited	(37)		33.70	(24)		28.82
Nonvested at December 31, 2022	1,802		35.15	257		31.61

(1) As of December 31, 2022, a total of 106,285 restricted stock units were vested but not yet issued, of which 7,066 vested during 2022. These shares have not been reflected as vested shares in this table because, in accordance with the restricted stock unit agreements, shares of common stock are not issued for vested restricted stock units until termination of employment.

(2) A total of 193,623 performance share unit awards are reflected in the vested shares in this table, which represents the target number of performance share unit awards for this grant and were included in the balance at December 31, 2021. During the year ended December 31, 2022, an additional 96,814 performance share unit awards with a grant date fair value of $29.68 were issued related to this vest due to the target performance criteria being exceeded.

As of December 31, 2022, there was $26 million of total unrecognized compensation cost related to nonvested share compensation arrangements granted under the Stock Incentive Plan and the Prior Plan. That cost is expected to be recognized over a weighted-average period of approximately 1.7 years. The value of share awards that vested during the years ended December 31, 2022, 2021 and 2020 was $31 million, $18 million and $24 million, respectively.

24. ACCUMULATED OTHER COMPREHENSIVE (LOSS) INCOME

The components of other comprehensive (loss) income and changes in accumulated other comprehensive loss by component were as follows (dollars in millions):

Huntsman Corporation

	Foreign currency translation adjustment(a)	Pension and other postretirement benefits adjustments(b)	Other comprehensive income of unconsolidated affiliates	Other, net	Total	Amounts attributable to noncontrolling interests	Amounts attributable to Huntsman Corporation
Beginning balance, January 1, 2022	$ (420)	$ (810)	$ 8	$ 6	$ (1,216)	$ 13	$ (1,203)
Other comprehensive loss before reclassifications, gross	(229)	157	—	(1)	(73)	12	(61)
Tax impact	1	(38)	—	—	(37)	—	(37)
Amounts reclassified from accumulated other comprehensive loss, gross(c)	—	51	(6)	—	45	—	45
Tax impact	—	(12)	—	—	(12)	—	(12)
Net current-period other comprehensive (loss) income	(228)	158	(6)	(1)	(77)	12	(65)
Ending balance, December 31, 2022	$ (648)	$ (652)	$ 2	$ 5	$ (1,293)	$ 25	$ (1,268)

(a) Amounts are net of tax of $55 million and $56 million as of December 31, 2022 and January 1, 2022, respectively.
(b) Amounts are net of tax of $31 million and $81 million as of December 31, 2022 and January 1, 2022, respectively.
(c) See table below for details about these reclassifications.

	Foreign currency translation adjustment(a)	Pension and other postretirement benefits adjustments(b)	Other comprehensive income of unconsolidated affiliates	Other, net	Total	Amounts attributable to noncontrolling interests	Amounts attributable to Huntsman Corporation
Beginning balance, January 1, 2021	$ (328)	$ (1,050)	$ 8	$ 4	$ (1,366)	$ 20	$ (1,346)
Other comprehensive loss before reclassifications, gross	(91)	229	—	2	140	(7)	133
Tax impact	(1)	(54)	—	—	(55)	—	(55)
Amounts reclassified from accumulated other comprehensive loss, gross(c)	—	83	—	—	83	—	83
Tax impact	—	(18)	—	—	(18)	—	(18)
Net current-period other comprehensive (loss) income	(92)	240	—	2	150	(7)	143
Ending balance, December 31, 2021	$ (420)	$ (810)	$ 8	$ 6	$ (1,216)	$ 13	$ (1,203)

(a) Amounts are net of tax of $56 million as of both December 31, 2021 and January 1, 2021.
(b) Amounts are net of tax of $81 million and $153 million as of December 31, 2021 and January 1, 2021, respectively.
(c) See table below for details about these reclassifications.

Details about accumulated other comprehensive loss components(a):	Amounts reclassified from accumulated other comprehensive loss Year ended December 31, 2022	2021	2020		Affected line item in where net income is presented
Amortization of pension and other postretirement benefits:					
Actuarial loss	$ 57	$ 92	$ 82	(b)(d)	Other income, net
Prior service credit	(11)	(12)	(12)	(b)(d)	Other income, net
Settlement loss	5	3	43	(b)(c)	Other income, net
Curtailment gain	—	—	(2)	(b)(c)	Other income, net
	51	83	111		Total before tax
	(12)	(18)	(25)		Income tax expense
Total reclassifications for the period	$ 39	$ 65	$ 86		Net of tax

(a) Pension and other postretirement benefits amounts in parentheses indicate credits on our consolidated statements of operations.
(b) These accumulated other comprehensive loss components are included in the computation of net periodic pension costs. See "Note 18. Employee Benefit Plans."
(c) In connection with the sale of our Chemical Intermediates Businesses, we recognized $41 million of pension and other postemployment benefit settlement losses during the year ended December 31, 2020.
(d) Amounts contain approximately $11 million, $16 million and $16 million of prior service credit and actuarial loss related to discontinued operations for the years ended December 31, 2022, 2021 and 2020, respectively.

Huntsman International

	Foreign currency translation adjustment(a)	Pension and other postretirement benefits adjustments(b)	Other comprehensive income of unconsolidated affiliates	Other, net	Total	Amounts attributable to noncontrolling interests	Amounts attributable to Huntsman International
Beginning balance, January 1, 2022	$ (424)	$ (786)	$ 8	$ 2	$ (1,200)	$ 13	$ (1,187)
Other comprehensive income (loss) before reclassifications, gross	(230)	157	—	(1)	(74)	12	(62)
Tax impact	1	(38)	—	—	(37)	—	(37)
Amounts reclassified from accumulated other comprehensive loss, gross(c)	—	51	(6)	—	45	—	45
Tax impact	—	(12)	—	—	(12)	—	(12)
Net current-period other comprehensive (loss) income	(229)	158	(6)	(1)	(78)	12	(66)
Ending balance, December 31, 2022	$ (653)	$ (628)	$ 2	$ 1	$ (1,278)	$ 25	$ (1,253)

(a) Amounts are net of tax of $42 million and $43 million as of December 31, 2022 and January 1, 2022, respectively.
(b) Amounts are net of tax of $55 million and $105 million as of December 31, 2022 and January 1, 2022, respectively.
(c) See table below for details about these reclassifications.

	Foreign currency translation adjustment(a)	Pension and other postretirement benefits adjustments(b)	Other comprehensive income of unconsolidated affiliates	Other, net	Total	Amounts attributable to noncontrolling interests	Amounts attributable to Huntsman International
Beginning balance, January 1, 2021	$ (333)	$ (1,028)	$ 8	$ —	$ (1,353)	$ 20	$ (1,333)
Other comprehensive income (loss) before reclassifications, gross	(90)	229	—	2	141	(7)	134
Tax impact	(1)	(56)	—	—	(57)	—	(57)
Amounts reclassified from accumulated other comprehensive loss, gross(c)	—	86	—	—	86	—	86
Tax impact	—	(17)	—	—	(17)	—	(17)
Net current-period other comprehensive (loss) income	(91)	242	—	2	153	(7)	146
Ending balance, December 31, 2021	$ (424)	$ (786)	$ 8	$ 2	$ (1,200)	$ 13	$ (1,187)

(a) Amounts are net of tax of $43 million as of both December 31, 2021 and January 1, 2021.
(b) Amounts are net of tax of $105 million and $178 million as of December 31, 2021 and January 1, 2021, respectively.
(c) See table below for details about these reclassifications.

Details about Accumulated Other Comprehensive Loss Components(a):	Amounts reclassified from accumulated other comprehensive loss Year ended December 31, 2022	2021	2020		Affected line item in where net income is presented
Amortization of pension and other postretirement benefits:					
Actuarial loss	$ 57	$ 95	$ 86	(b)(d)	Other income, net
Prior service credit	(11)	(12)	(12)	(b)(d)	Other income, net
Settlement loss	5	3	43	(b)(c)	Other income, net
Curtailment gain	—	—	(2)	(b)(c)	Other income, net
	51	86	115		Total before tax
	(12)	(17)	(26)		Income tax expense
Total reclassifications for the period	$ 39	$ 69	$ 89		Net of tax

(a) Pension and other postretirement benefits amounts in parentheses indicate credits on our consolidated statements of operations.
(b) These accumulated other comprehensive loss components are included in the computation of net periodic pension costs. See "Note 18. Employee Benefit Plans."
(c) In connection with the sale of our Chemical Intermediates Businesses, we recognized $41 million of pension and other postemployment benefit settlement losses during the year ended December 31, 2020.
(d) Amounts contain approximately $11 million, $16 million and $16 million of prior service credit and actuarial loss related to discontinued operations for the years ended December 31, 2022, 2021 and 2020, respectively.

Items of other comprehensive income (loss) of our Company and our consolidated affiliates have been recorded net of tax, with the exception of the foreign currency translation adjustments related to subsidiaries with earnings permanently reinvested. The tax effect is determined based upon the jurisdiction where the income or loss was recognized and is net of valuation allowances.

25. RELATED PARTY TRANSACTIONS

Our consolidated financial statements include the following transactions with our affiliates not otherwise disclosed (dollars in millions):

	Year ended December 31,		
	2022	2021	2020
Sales to:			
Unconsolidated affiliates	$ 226	$ 197	$ 115
Inventory purchases from:			
Unconsolidated affiliates	433	533	406

26. OPERATING SEGMENT INFORMATION

We derive our revenues, earnings and cash flows from the manufacture and sale of a wide variety of diversified organic chemical products. We have three operating segments, which are also our reportable segments: Polyurethanes, Performance Products and Advanced Materials. We have organized our business and derived our operating segments around differences in product lines.

The major products of each reportable operating segment are as follows:

Segment	Products
Polyurethanes	MDI, polyols, TPU and other polyurethane-related products
Performance Products	Specialty amines, ethyleneamines, maleic anhydride and technology licenses
Advanced Materials	Technologically-advanced epoxy, phenoxy, acrylic, polyurethane and acrylonitrile-butadiene-based polymer formulations; high performance thermoset resins, curing agents, toughening agents, and carbon nanotubes additives

Sales between segments are generally recognized at external market prices and are eliminated in consolidation. We use adjusted EBITDA to measure the financial performance of our global business units and for reporting the results of our operating segments. This measure includes all operating items relating to the businesses. The adjusted EBITDA of operating segments excludes items that principally apply to our Company as a whole. The following schedule includes revenues and adjusted EBITDA for each of our reportable operating segments (dollars in millions).

	Year ended December 31, 2022	2021	2020
Revenues:			
Polyurethanes	$ 5,067	$ 5,019	$ 3,584
Performance Products	1,713	1,485	1,023
Advanced Materials	1,277	1,198	839
Total reportable segments' revenues	8,057	7,702	5,446
Intersegment eliminations	(34)	(32)	(25)
Total	$ 8,023	$ 7,670	$ 5,421
Huntsman Corporation:			
Segment adjusted EBITDA(1):			
Polyurethanes	$ 628	$ 879	$ 472
Performance Products	469	359	164
Advanced Materials	233	204	130
Total reportable segments' adjusted EBITDA	1,330	1,442	766
Reconciliation of total reportable segments' adjusted EBITDA to income from continuing operations before income taxes:			
Interest expense, net—continuing operations	(62)	(67)	(86)
Depreciation and amortization—continuing operations	(281)	(278)	(267)
Corporate and other costs, net(2)	(175)	(196)	(161)
Net income attributable to noncontrolling interests	63	59	32
Other adjustments:			
Business acquisition and integration expenses and purchase accounting inventory adjustments	(12)	(22)	(31)
Fair value adjustments to Venator investment, net and related loss on disposal	(12)	(28)	(88)
Loss on early extinguishment of debt	—	(27)	—
Certain legal and other settlements and related expenses	(7)	(13)	(5)
(Costs) income associated with the Albemarle Settlement, net	(3)	465	—
Gain on sale of businesses/assets	—	30	280
Income from transition services arrangements	2	8	7
Certain nonrecurring information technology project implementation costs	(5)	(8)	(6)
Amortization of pension and postretirement actuarial losses	(49)	(74)	(64)
Plant incident remediation credits (costs)	4	—	(2)
Restructuring, impairment and plant closing and transition costs(3)	(96)	(45)	(44)
Income from continuing operations before income taxes	697	1,246	331
Income tax expense—continuing operations	(186)	(191)	(42)
Income from discontinued operations, net of tax	12	49	777
Net income	$ 523	$ 1,104	$ 1,066

	Year ended December 31,		
	2022	2021	2020
Depreciation and amortization:			
Polyurethanes	$ 136	$ 131	$ 130
Performance Products	72	74	79
Advanced Materials	57	60	45
Total reportable segments' depreciation and amortization	265	265	254
Corporate and other	16	13	13
Total	$ 281	$ 278	$ 267

	Year ended December 31,		
	2022	2021	2020
Capital expenditures:			
Polyurethanes	$ 142	$ 243	$ 172
Performance Products	92	42	32
Advanced Materials	26	25	21
Total reportable segments' capital expenditures	260	310	225
Corporate and other	12	16	12
Total	$ 272	$ 326	$ 237

	December 31,	
	2022	2021
Total assets:		
Polyurethanes	$ 4,286	$ 4,624
Performance Products	1,155	1,207
Advanced Materials	1,246	1,324
Total reportable segments' total assets	6,687	7,155
Corporate and other	1,061	1,709
Total	$ 7,748	$ 8,864

	December 31,	
	2022	2021
Goodwill:		
Polyurethanes	$ 336	$ 344
Performance Products	15	16
Advanced Materials	290	290
Total	$ 641	$ 650

	Year ended December 31, 2022	2021	2020
Huntsman International:			
Segment adjusted EBITDA(1):			
Polyurethanes	$ 628	$ 879	$ 472
Performance Products	469	359	164
Advanced Materials	233	204	130
Total reportable segments' adjusted EBITDA	1,330	1,442	766
Reconciliation of total reportable segments' adjusted EBITDA to income from continuing operations before income taxes:			
Interest expense, net—continuing operations	(62)	(67)	(88)
Depreciation and amortization—continuing operations	(281)	(278)	(267)
Corporate and other costs, net(2)	(172)	(190)	(155)
Net income attributable to noncontrolling interests	63	59	32
Other adjustments:			
Business acquisition and integration expenses and purchase accounting inventory adjustments	(12)	(22)	(31)
Fair value adjustments to Venator investment, net and related loss on disposal	(12)	(28)	(88)
Loss on early extinguishment of debt	—	(27)	—
Certain legal and other settlements and related expenses	(7)	(13)	(5)
(Costs) income associated with the Albemarle Settlement, net	(3)	465	—
Gain on sale of businesses/assets	—	30	280
Income from transition services arrangements	2	8	7
Certain nonrecurring information technology project implementation costs	(5)	(8)	(6)
Amortization of pension and postretirement actuarial losses	(49)	(76)	(67)
Plant incident remediation credits (costs)	4	—	(2)
Restructuring, impairment and plant closing and transition costs(3)	(96)	(45)	(44)
Income from continuing operations before income taxes	700	1,250	332
Income tax expense—continuing operations	(188)	(192)	(42)
Income from discontinued operations, net of tax	12	49	777
Net income	$ 524	$ 1,107	$ 1,067

	Year ended December 31, 2022	2021	2020
Depreciation and amortization:			
Polyurethanes	$ 136	$ 131	$ 130
Performance Products	72	74	79
Advanced Materials	57	60	45
Total reportable segments' depreciation and amortization	265	265	254
Corporate and other	16	13	13
Total	$ 281	$ 278	$ 267

	Year ended December 31, 2022	2021	2020
Capital expenditures:			
Polyurethanes	$ 142	$ 243	$ 172
Performance Products	92	42	32
Advanced Materials	26	25	21
Total reportable segments' capital expenditures	260	310	225
Corporate and other	12	16	12
Total	$ 272	$ 326	$ 237

	December 31, 2022	December 31, 2021
Total assets:		
Polyurethanes	$ 4,286	$ 4,624
Performance Products	1,155	1,207
Advanced Materials	1,246	1,324
Total reportable segments' total assets	6,687	7,155
Corporate and other	1,067	1,948
Total	$ 7,754	$ 9,103

	December 31, 2022	December 31, 2021
Goodwill:		
Polyurethanes	$ 336	$ 344
Performance Products	15	16
Advanced Materials	290	290
Total	$ 641	$ 650

(1) We use segment adjusted EBITDA as the measure of each segment's profit or loss. We believe that segment adjusted EBITDA more accurately reflects what the chief operating decision maker uses to make decisions about resources to be allocated to the segments and assess their financial performance. Segment adjusted EBITDA is defined as net income of Huntsman Corporation or Huntsman International, as appropriate, before interest, income tax, depreciation and amortization, net income attributable to noncontrolling interests and certain Corporate and other items, as well as eliminating the following adjustments: (a) business acquisition and integration expenses and purchase accounting inventory adjustments; (b) fair value adjustments to Venator investment, net and related loss on disposal; (c) loss on early extinguishment of debt; (d) certain legal and other settlements and related expenses; (e) (costs) income associated with the Albemarle Settlement, net; (f) gain on sale of businesses/assets; (g) income from transition services arrangements related to the sale of our Chemical Intermediates Businesses to Indorama; (h) certain nonrecurring information technology project implementation costs; (i) amortization of pension and postretirement actuarial losses; (j) plant incident remediation credits (costs); (k) restructuring, impairment, plant closing and transition credits; and (l) income from discontinued operations, net of tax.

(2) Corporate and other costs, net includes unallocated corporate overhead, unallocated foreign exchange gains and losses, LIFO inventory valuation reserve adjustments, nonoperating income and expense and gains and losses on the disposition of corporate assets.

(3) Includes costs associated with transition activities relating primarily to our Corporate program to optimize our global approach to leverage shared services capabilities as well as our 2020 CVC Thermoset Specialties Acquisition.

	Year ended December 31, 2022	Year ended December 31, 2021	Year ended December 31, 2020
Revenues by geographic area(1):			
United States	$ 3,089	$ 2,649	$ 1,796
China	1,305	1,395	995
Germany	522	524	368
Italy	249	280	185
Canada	242	231	201
India	196	183	142
Other nations	2,420	2,408	1,734
Total	$ 8,023	$ 7,670	$ 5,421

	December 31, 2022	December 31, 2021
Long-lived assets(2):		
United States	$ 1,211	$ 1,211
The Netherlands	313	337
China	213	248
Saudi Arabia	121	133
Germany	95	106
Hungary	77	41
Switzerland	76	76
Singapore	71	77
Other nations	200	214
Total	$ 2,377	$ 2,443

(1) Geographic information for revenues is based upon countries into which product is sold.

(2) Long-lived assets consist of property, plant and equipment, net.

HUNTSMAN CORPORATION (PARENT ONLY)
Schedule I—Condensed Financial Information of Registrant
HUNTSMAN CORPORATION (Parent Only)
BALANCE SHEETS
(In Millions, Except Share and Per Share Amounts)

	December 31,	
	2022	**2021**
ASSETS		
Cash and cash equivalents	$ —	$ 2
Prepaid assets	—	2
Receivable from affiliate	—	2
Total current assets	—	6
Investment in and advances to affiliates	3,631	4,630
Total assets	$ 3,631	$ 4,636
LIABILITIES AND STOCKHOLDERS' EQUITY		
Accounts payable	$ —	$ 3
Payable to affiliate	—	242
Accrued liabilities	2	4
Total current liabilities	2	249
Other noncurrent liabilities	5	9
Total liabilities	7	258
STOCKHOLDERS' EQUITY		
Common stock $0.01 par value, 1,200,000,000 shares authorized, 261,148,217 and 259,701,770 shares issued and 183,634,464 and 214,170,287 shares outstanding, respectively	3	3
Additional paid-in capital	4,156	4,102
Treasury stock, 77,513,753 and 45,531,489 shares, respectively	(1,937)	(934)
Unearned stock-based compensation	(35)	(25)
Retained earnings	2,705	2,435
Accumulated other comprehensive loss	(1,268)	(1,203)
Total stockholders' equity	3,624	4,378
Total liabilities and stockholders' equity	$ 3,631	$ 4,636

The accompanying notes are an integral part of the condensed financial information.

HUNTSMAN CORPORATION (Parent Only)
STATEMENTS OF OPERATIONS
(In Millions)

	Year ended December 31,		
	2022	**2021**	**2020**
Selling, general and administrative expenses	$ (4)	$ (7)	$ (6)
Interest income	—	—	2
Equity in income of subsidiaries	295	891	892
Dividend income—affiliate	169	158	144
Other income	—	3	2
Net income	$ 460	$ 1,045	$ 1,034

The accompanying notes are an integral part of the condensed financial information.

HUNTSMAN CORPORATION (Parent Only)
STATEMENTS OF COMPREHENSIVE INCOME
(In Millions)

	Year ended December 31,		
	2022	**2021**	**2020**
Net income	$ 460	$ 1,045	$ 1,034
Other comprehensive (loss) income, net of tax:			
Foreign currency translations adjustments	(228)	(92)	41
Pension and other postretirement benefits adjustments	158	240	(19)
Other, net	56	61	32
Other comprehensive (loss) income, net of tax	(14)	209	54
Comprehensive income	446	1,254	1,088
Comprehensive income attributable to noncontrolling interests	(51)	(66)	(38)
Comprehensive income attributable to Huntsman Corporation	$ 395	$ 1,188	$ 1,050

The accompanying notes are an integral part of the condensed financial information.

HUNTSMAN CORPORATION (Parent Only)
STATEMENTS OF STOCKHOLDERS' EQUITY
(In Millions, Except Share Amounts)

	Huntsman Corporation Stockholders' Equity							
	Shares							
	Common stock	Common stock	Additional paid-in capital	Treasury stock	Unearned stock-based compensation	Retained earnings	Accumulated other comprehensive loss	Total equity
Beginning balance, January 1, 2020	224,295,868	$ 3	$ 4,008	$ (635)	$ (17)	$ 690	$ (1,362)	$ 2,687
Net income	—	—	—	—	—	1,034	—	1,034
Other comprehensive income	—	—	—	—	—	—	16	16
Issuance of nonvested stock awards	—	—	18	—	(18)	—	—	—
Vesting of stock awards	960,406	—	5	—	—	—	—	5
Recognition of stock-based compensation	—	—	7	—	16	—	—	23
Repurchase and cancellation of stock awards	(287,247)	—	—	—	—	(8)	—	(8)
Stock options exercised	441,754	—	10	—	—	(7)	—	3
Treasury stock repurchased	(5,364,519)	—	—	(96)	—	—	—	(96)
Dividends declared on common stock	—	—	—	—	—	(145)	—	(145)
Balance, December 31, 2020	220,046,262	3	4,048	(731)	(19)	1,564	(1,346)	3,519
Net income	—	—	—	—	—	1,045	—	1,045
Other comprehensive income	—	—	—	—	—	—	143	143
Issuance of nonvested stock awards	—	—	26	—	(26)	—	—	—
Vesting of stock awards	678,400	—	5	—	—	—	—	5
Recognition of stock-based compensation	—	—	6	—	20	—	—	26
Repurchase and cancellation of stock awards	(238,339)	—	—	—	—	(7)	—	(7)
Stock options exercised	738,362	—	17	—	—	(7)	—	10
Treasury stock repurchased	(7,054,398)	—	—	(203)	—	—	—	(203)
Dividends declared on common stock	—	—	—	—	—	(160)	—	(160)
Balance, December 31, 2021	214,170,287	3	4,102	(934)	(25)	2,435	(1,203)	4,378
Net income	—	—	—	—	—	460	—	460
Other comprehensive loss	—	—	—	—	—	—	(65)	(65)
Issuance of nonvested stock awards	—	—	32	—	(32)	—	—	—
Vesting of stock awards	1,341,787	—	7	—	—	—	—	7
Recognition of stock-based compensation	—	—	3	—	22	—	—	25
Repurchase and cancellation of stock awards	(366,199)	—	—	—	—	(14)	—	(14)
Stock options exercised	470,853	—	12	—	—	(6)	—	6
Treasury stock repurchased	(31,982,264)	—	—	(1,003)	—	—	—	(1,003)
Dividends declared on common stock	—	—	—	—	—	(170)	—	(170)
Balance, December 31, 2022	183,634,464	$ 3	$ 4,156	$ (1,937)	$ (35)	$ 2,705	$ (1,268)	$ 3,624

The accompanying notes are an integral part of the condensed financial information.

HUNTSMAN CORPORATION (Parent Only)
STATEMENTS OF CASH FLOWS
(In Millions)

	Year ended December 31, 2022	2021	2020
Operating activities:			
Net income	$ 460	$ 1,045	$ 1,034
Equity in income of subsidiaries	(295)	(891)	(892)
Stock-based compensation	2	1	1
Noncash interest income	—	—	(2)
Changes in operating assets and liabilities	(2)	(2)	(1)
Net cash provided by operating activities	165	153	140
Investing activities:			
Repayments of loan by affiliate	—	—	380
Net cash provided by investing activities	—	—	380
Financing activities:			
Dividends paid to common stockholders	(171)	(159)	(144)
Repurchase and cancellation of stock awards	(14)	(7)	(8)
Proceeds from issuance of common stock	6	10	3
Repurchase of common stock	(1,005)	(200)	(96)
Increase (decrease) in payable to affiliates	1,017	203	(273)
Net cash used in financing activities	(167)	(153)	(518)
(Decrease) increase in cash and cash equivalents	(2)	—	2
Cash and cash equivalents at beginning of period	2	2	—
Cash and cash equivalents at end of period	$ —	$ 2	$ 2

The accompanying notes are an integral part of the condensed financial information.

HUNTSMAN CORPORATION (Parent Only)
NOTES TO CONDENSED FINANCIAL STATEMENTS

1. BASIS OF PRESENTATION

Pursuant to rules and regulations of the SEC, the parent only condensed financial information of Huntsman Corporation do not reflect all of the information and notes normally included with financial statements prepared in accordance with GAAP in the United States. Therefore, these condensed financial statements should be read in conjunction with the consolidated financial statements and related notes included under Item 8 in this Form 10-K.

Exhibit 21.1

SUBSIDIARIES OF HUNTSMAN CORPORATION

Company	JURISDICTION
Huntsman (Argentina) S.R.L.	Argentina
Huntsman Chemical Company Australia Pty Limited	Australia
Huntsman Polyurethanes (Australia) Pty Limited	Australia
Huntsman Advanced Materials (Austria) GmbH	Austria
Huntsman Bangladesh Pte Limited	Bangladesh
Production-trade unitary enterprise Huntsman-NMG	Belarus
Huntsman Advanced Materials (Europe) BV	Belgium
Huntsman (Belgium) BV	Belgium
Huntsman (Europe) BV	Belgium
Huntsman Textile Effects (Belgium) BV	Belgium
Icynene Lapolla Europe SRL	Belgium
Huntsman Química Brasil Ltda	Brazil
Huntsman Building Solutions (Canada) Inc.	Canada
Huntsman Corporation Canada Inc.	Canada
Huntsman (Chile) SpA	Chile
Guangzhou New Textile Chemical Co., Ltd..	China
Huntsman Advanced Materials (Guangdong) Company Limited	China
Huntsman Chemical Trading (Shanghai) Ltd	China
Huntsman Chemistry R&D Center (Shanghai) Co., Ltd	China
Huntsman Composite Materials (Tianjin) Co., Ltd.	China
Huntsman Investment (Shanghai) Co., Ltd.	China
Huntsman Polyurethanes (China) Ltd	China
Huntsman Polyurethanes Shanghai Ltd	China
Huntsman Textile Effects (China) Co., Ltd	China
Huntsman Textile Effects (Qingdao) Co., Ltd	China
Jurong Ningwu New Material Development Co. Ltd	China
Nanjing Jinling Huntsman New Material Co., Ltd	China
Shanghai Huntsman Polyurethanes Specialties Co., Ltd	China
Shanghai Lianheng Isocyanate Company Limited	China
Shanghai New Textile Effects Co., Ltd.	China
Huntsman Costa Rica S.R.L.	Costa Rica
Charwell Enterprises Limited	Hong Kong, China
Ever Wax Limited	Hong Kong, China
Huntsman Advanced Materials (Hong Kong) Limited	Hong Kong, China
Huntsman International (Hong Kong) Limited	Hong Kong, China
Huntsman Specialty (Hong Kong) Limited	Hong Kong, China
Hypogain Investments Limited	Hong Kong, China
Top Morale Limited	Hong Kong, China
Vigor Rich Limited	Hong Kong, China
Wiry Enterprises Limited	Hong Kong, China
Huntsman Colombia Limitada	Colombia
Huntsman (Czech Republic) s.r.o.	Czech Republic
Icynene Lapolla Central Europe a.s.	Czech Republic
Huntsman (Egypt) LLC	Egypt
Technocom For Chemical Industries S.A.E.	Egypt
Huntsman Advanced Materials (France) S.A.S.	France
Icynene Lapolla France SAS	France
Huntsman Advanced Materials (Deutschland) GmbH	Germany
Huntsman (Germany) GmbH	Germany
Huntsman International (Germany) GmbH	Germany
Huntsman Textile Effects (Germany) GmbH	Germany
HUNTSMAN Verwaltungs GmbH	Germany
IRO Chemie Verwaltungsgesellschaft mbH	Germany
PUR-Systems GmbH	Germany
Huntsman Products GmbH	Germany
Huntsman (Netherlands) B.V. y Companía, SCA	Guatemala
HUNTSMAN Corporation Hungary Vegyipari Termelő Fejlesztő Zártkörűen Működő Részvénytársaság	Hungary
Huntsman International (India) Private Limited	India
HI Solutions India Private Limited	India
Swathi Organics and Specialties Private Limited	India
PT Huntsman Indonesia	Indonesia
PT Huntsman International Indonesia	Indonesia
Huntsman Advanced Materials (Italy) S.r.l.	Italy
Huntsman Gomet S.r.l.	Italy
Huntsman Patrica S.r.l.	Italy
Tecnoelastomeri S.r.l.	Italy
Textile Effects (Italy) S.r.l.	Italy
Huntsman Japan KK	Japan
Icynene Asia Pacific Inc.	Japan
Huntsman (Kazakhstan) LLP	Kazakhstan
Huntsman (Korea) Limited	Korea

KPX Huntsman Polyurethanes Automotive Co., Ltd.	Korea
Vantico Group S.à r.l.	Luxembourg
Vantico International S.à r.l.	Luxembourg
Huntsman Global Business Services Sdn. Bhd.	Malaysia
Huntsman International de Mexico S. de R.L. de C.V.	Mexico
Huntsman Mexico S. de R.L. de C.V.	Mexico
BASF Huntsman Shanghai Isocyanate Investment B.V.	Netherlands
Dynasty Licensing B.V.	Netherlands
Huntsman Advanced Materials (Netherlands) B.V.	Netherlands
Huntsman China Investments B.V.	Netherlands
Huntsman (Holdings) Netherlands B.V.	Netherlands
Huntsman Holland B.V.	Netherlands
Huntsman Holland Iota B.V.	Netherlands
Huntsman Investments (Netherlands) B.V.	Netherlands
Huntsman MA Investments (Netherlands) C.V.	Netherlands
Huntsman (Netherlands) B.V.	Netherlands, Lithuania, Russia, United Arab Emirates
Huntsman (Russia Investments) B.V.	Netherlands
Huntsman (Saudi Investments) B.V.	Netherlands
Huntsman Shanghai China Investments B.V.	Netherlands
Huntsman Textile Effects (Netherlands) B.V.	Netherlands
International Polyurethane Investments B.V.	Netherlands
Huntsman Textile Effects Pakistan (Private) Limited	Pakistan
Huntsman Textile Effects (Panama) S. de R.L.	Panama
Huntsman (Poland) Sp.zo.o	Poland
Joint Stock Company Huntsman-NMG	Russia
LLC Huntsman CIS	Russia
Arabian Amines Company	Saudi Arabia
Huntsman APC Limited	Saudi Arabia
Huntsman Advanced Materials (Singapore) Pte Ltd	Singapore
Huntsman (Singapore) Pte Ltd	Singapore, Viet Nam
Huntsman Advanced Materials (Spain) S.L.U.	Spain
Huntsman Norden AB	Sweden, Denmark
Huntsman Advanced Materials Licensing (Switzerland) GmbH	Switzerland
Huntsman Advanced Materials (Switzerland) GmbH	Switzerland, South Africa
Huntsman Textile Effects (Switzerland) GmbH	Switzerland
Pensionkasse Huntsman (Switzerland)	Switzerland
Huntsman Advanced Materials (Taiwan) Corporation	Taiwan
Huntsman (Taiwan) Limited	Taiwan
Huntsman International (Thailand) Limited	Thailand
Huntsman (Thailand) Limited	Thailand
EMA Kimya Sistemleri Sanayi ve Ticaret A.S.	Turkey
Huntsman Specialty Chemicals Kimya Sanayi ve Ticaret Anonim Şirketi	Turkey
Huntsman Tekstil Ürünleri Kimya ve Dis Ticaret Limited Sirketi	Turkey
Limited Liability Company Huntsman (Ukraine)	Ukraine
Huntsman (UAE) FZE	United Arab Emirates
Huntsman Advanced Materials Holdings (UK) Limited	U.K.
Huntsman Advanced Materials (UK) Limited	U.K.
Huntsman Corporation UK Limited	U.K.
Huntsman Europe Limited	U.K.
Huntsman (Holdings) UK	U.K.
Huntsman IFS Polyurethanes Limited	U.K.
Huntsman Offshore Investments Limited	U.K.
Huntsman Polyurethanes (UK) Limited	U.K.
Huntsman Surface Sciences Overseas Limited	U.K.
Huntsman Surface Sciences UK Limited	U.K.
Huntsman Trustees Limited	U.K.
Airstar Corporation	USA—Utah
ESP Akron Sub LLC	USA—Delaware
HF II Australia Holdings Company LLC	USA—Utah
Huntsman Advanced Materials Americas LLC	USA—Delaware
Huntsman Advanced Materials LLC	USA—Delaware
Huntsman Australia Holdings LLC	USA—Utah
Huntsman Australia LLC	USA—Utah
Huntsman Building Solutions (USA) LLC	USA—Delaware
Huntsman Chemical Purchasing LLC	USA—Utah
Huntsman Enterprises LLC	USA—Utah
Huntsman Ethyleneamines LLC	USA—Texas
Huntsman Fuels GP LLC	USA—Delaware
Huntsman Fuels LLC	USA—Texas
Huntsman Fuels Partners LP	USA—Delaware
Huntsman International Investments LLC	USA—Delaware
Huntsman International LLC	USA—Delaware
Huntsman International Trading Corporation	USA—Delaware
Huntsman MA Investment Corporation	USA—Utah
Huntsman MA Services Corporation	USA—Utah
Huntsman Petrochemical LLC	USA—Delaware

Huntsman Petrochemical Purchasing LLC	USA—Utah
Huntsman Pigments LLC	USA—Delaware

Huntsman Procurement LLC	USA—Utah
Huntsman Purchasing, Ltd.	USA—Utah
Huntsman Receivables Finance II LLC	USA—Delaware
Huntsman Receivables Finance LLC	USA—Delaware
Huntsman Surfactants Technology Corporation	USA—Utah
Huntsman VMC Corporation	USA—Delaware
International Risk Insurance Company	USA—Texas
Maple Shade Land LLC	USA—Delaware
Nanocomp Technologies, Inc.	USA—Delaware
Rubicon LLC	USA—Utah
Huntsman Corporation, C.A.	Venezuela
Huntsman Vietnam Company Limited	Vietnam

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in Registration Statement Nos. 333-174086, 333-211715, and 333-211716 on Form S-8 and Registration Statement Nos. 333-144043, 333-162655, and 333-229822 on Form S-3 of our reports dated February 21, 2023, relating to the consolidated financial statements of Huntsman Corporation and subsidiaries (the "Company"), and the effectiveness of the Company's internal control over financial reporting, appearing in this Annual Report on Form 10-K for the year ended December 31, 2022.

/s/ DELOITTE & TOUCHE LLP

Houston, Texas
February 21, 2023

Exhibit 23.2

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in Registration Statement No. 333-229822 on Form S-3 of our report dated February 21, 2023, relating to the consolidated financial statements of Huntsman International LLC and subsidiaries appearing in this Annual Report on Form 10-K for the year ended December 31, 2022.

/s/ DELOITTE & TOUCHE LLP

Houston, Texas
February 21, 2023

Exhibit 31.1

**CERTIFICATION PURSUANT TO EXCHANGE ACT RULES 13A-14(A) and 15D-14(A),
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Peter R. Huntsman, certify that:

1. I have reviewed this annual report on Form 10-K of Huntsman Corporation and Huntsman International LLC;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrants as of, and for, the periods presented in this report;

4. The registrants' other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrants and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrants, including their consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrants' disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrants' internal control over financial reporting that occurred during the registrants' most recent fiscal quarter (the registrants' fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrants' internal control over financial reporting; and

5. The registrants' other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrants' auditors and the audit committee of the registrants' board of directors or board of managers, as applicable (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrants' ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrants' internal control over financial reporting.

Date: February 21, 2023

/s/ PETER R. HUNTSMAN
Peter R. Huntsman
Chief Executive Officer

Exhibit 31.2

**CERTIFICATION PURSUANT TO EXCHANGE ACT RULES 13A-14(A) and 15D-14(A),
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Philip M. Lister, certify that:

1. I have reviewed this annual report on Form 10-K of Huntsman Corporation and Huntsman International LLC;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrants as of, and for, the periods presented in this report;

4. The registrants' other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrants and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrants, including their consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrants' disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrants' internal control over financial reporting that occurred during the registrants' most recent fiscal quarter (the registrants' fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrants' internal control over financial reporting; and

5. The registrants' other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrants' auditors and the audit committee of the registrants' board of directors or board of managers, as applicable (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrants' ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrants' internal control over financial reporting.

Date: February 21, 2023

/s/ PHILIP M. LISTER
Philip M. Lister
Chief Financial Officer

Exhibit 32.1

**CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Annual Report on Form 10-K of Huntsman Corporation and Huntsman International LLC (the “Companies”) for the period ended December 31, 2022 as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, Peter R. Huntsman, Chief Executive Officer of the Companies, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that, to my knowledge:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Companies.

/s/ PETER R. HUNTSMAN

Peter R. Huntsman
Chief Executive Officer
February 21, 2023

Exhibit 32.2

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report on Form 10-K of Huntsman Corporation and Huntsman International LLC (the “Companies”) for the period ended December 31, 2022 as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, Philip M. Lister, Chief Financial Officer of the Companies, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that, to my knowledge:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Companies.

/s/ PHILIP M. LISTER

Philip M. Lister
Chief Financial Officer
February 21, 2023