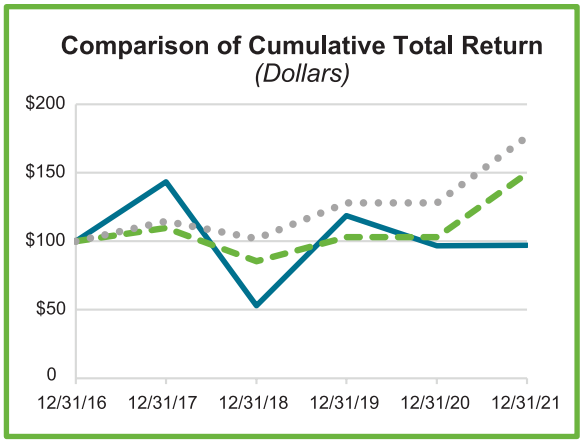
KOPPERS

ANNUAL REPORT 2021

EXPAND & OPTIMIZE

Financial Highlights

Years Ended December 31	2021	2020	2019
(In millions, except share, per share and employee amounts)			
Operating Performance			
Net Sales	$1,678.6	$1,669.1	$1,637.0
Operating Profit	156.5	156.7	125.0
Income from Continuing Operations	85.1	89.1	63.7
Net Income Attributable to Koppers	85.2	122.0	66.6
Diluted Earnings per Share–Continuing Operations	3.90	4.17	3.03
Financial Condition			
Total Assets	$1,661.9	$1,598.6	$1,564.6
Total Debt	789.1	784.2	911.9
Cash and Cash Equivalents	45.5	38.5	32.3
Other Data			
Capital Expenditures	$125.0	$69.8	$37.2
Number of Employees	2,088	2,061	2,120
Stock Information			
Market Price per Share–High	$39.44	$38.86	$44.75
Market Price per Share–Low	27.91	8.25	16.51
Shares Outstanding (000s)	21,096	21,099	20,805



Value at	12/31/16	12/31/17	12/31/18	12/31/19	12/31/20	12/31/21
Koppers	**$100.00**	**$143.41**	**$52.95**	**$118.77**	**$96.83**	**$97.14**
S&P 600 Materials	$100.00	$109.92	$85.46	$103.04	$126.41	$149.68
Russell 2000	$100.00	$114.65	$102.02	$128.06	$153.62	$176.39

Koppers
S&P 600 Materials
Russell 2000

Set forth above are a line graph and table comparing the cumulative total returns (assuming reinvestment of dividends) during the period commencing December 31, 2016, and ending December 31, 2021, of $100 invested in each of Koppers Holdings Inc.'s common stock, the Standard & Poor's SmallCap 600 Materials Index and the Russell 2000 Index. Because our competitors are principally privately held concerns or subsidiaries or divisions of corporations engaged in multiple lines of business, we do not believe it is feasible to construct a peer group industry comparison. We include the Standard & Poor's SmallCap 600 Materials Index in this graph to serve as a published industry index because Koppers Holdings Inc. is a constituent of the Standard & Poor's SmallCap 600 Materials Index, which includes corporations both larger and smaller than Koppers, and has an average market capitalization similar to ours. Additionally, we include in this graph the Russell 2000 Index, of which we are a constituent, as a broad equity market index. The Russell 2000 Index is comprised of issuers with generally similar market capitalizations to that of Koppers Holdings Inc.

EXPAND & OPTIMIZE

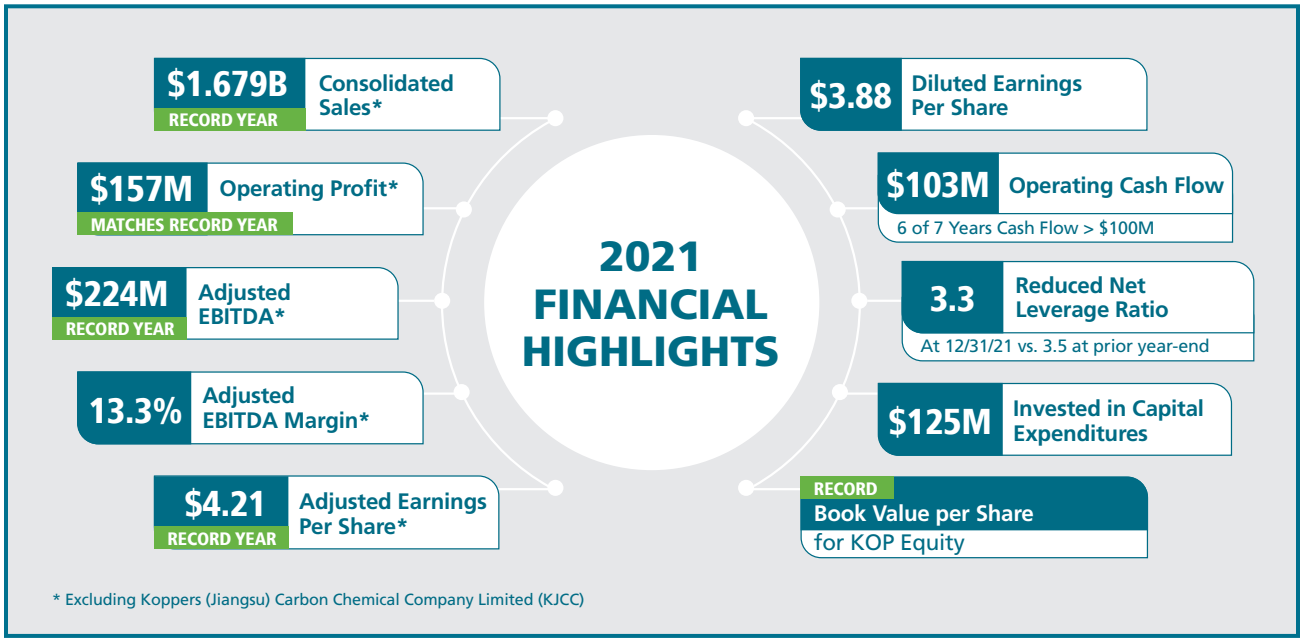
Dear Fellow Shareholders:

As the impacts of the COVID-19 pandemic continue to recede, it feels as though a major hinge is turning, opening doors to new beginnings. How we go about our business, both professional and personal, is emerging in a new light. As we recap 2021, I am gratified and proud to report that our balanced portfolio once again paid off to deliver value to our stakeholders. Moreover, Koppers is well positioned to make the most of the opportunities that are ahead of us. As previously stated, we have established a point on the horizon toward which all of our efforts have been directed—to significantly grow profitability over the next several years. Our steadfast commitment to Sustainability practices and Zero Harm principles serves as our foundation on this journey.

Through our Sustainability strategy, we continue to build on our history of customer-focused solutions that advance our purpose of Protecting What Matters and Preserving The Future. As a critical supplier to vital industries, we understand the importance of operating in a safe, sustainable manner that creates value for all of our stakeholders. At Koppers, we take pride in providing responsible solutions that serve the global infrastructure and our modern world.

Regarding Zero Harm, we always place the health and safety of our people first. This was clearly reflected in 2021, which saw our company achieve our lowest 12-month rate of serious safety incidents at Koppers, with 16 of our 43 operating facilities working accident-free for the year.

In 2021, Koppers also reported a number of record achievements and strong results across our financial metrics, including:



While we have steadily delivered profitable growth, there is so much more upside to our performance and potential going forward. Three attributes promise to carry Koppers higher—namely, we are diversified, we are driven to succeed, and we are delivering on our commitments.

Capturing Value from Our Diversification

Let's look at our diversified strengths. The vertical integration of our business units represents an incredible competitive advantage. We benefit significantly through our vertically integrated business model, and that's unique to the industries that we serve. Our businesses are interconnected to each other through the common bond of wood preservation across a diversified mix of end markets. That means Koppers is not reliant on any single one, which sets us apart. We can link our businesses together to take advantage of meaningful synergies while enjoying the balance that comes from serving unique markets. We can better control the supply chain on behalf of our customers through applying our expertise in wood procurement, chemicals, treatment, and responsible disposal of end-of-life poles and ties. As a result, we are not immensely dependent on other companies to supply the critical materials we need—which is becoming increasingly important in a complex world when challenges such as global health issues, labor shortages, and extreme weather conditions, to name a few, can bring society to a halt.

Worldwide, we're the market leaders in many of our businesses. And in many cases, Koppers holds the number one spot in the markets and geographies where we operate. While wood preservation represents the biggest part of our business, it's not the only thing that we do. In fact, almost everything that we do serves either industrial or residential infrastructure markets.

Leadership Council[1]

Our diversification also means that we can control many aspects of our growth strategy. Above and beyond our current initiatives are new or adjacent market opportunities—which include increased infrastructure spending and electric vehicles—that will only add to our top and bottom line. Koppers success is inextricably connected with our diversified business portfolio and the diversified end markets that we serve.

Driving Our Performance Higher

We have improved our balance sheet, opening opportunities to invest in our business to grow our bottom-line performance as well as return capital to shareholders. Now that the heavy lifting has been largely completed, it enables us to focus our attention on expanding our profitability. While we are in mature markets, our businesses are leading the way in thinking, analyzing, and acting in new ways to boost bottom-line growth that should result in greater value. Here again, our business model emerges as a competitive strength.

- Performance Chemicals (PC) carried us through the pandemic, with record profitability again in 2021, generating a significant portion of cash flow and profitability through sales of its wood preservation chemicals for home, construction, and industrial use. The PC team continues to relentlessly focus on improving its cost position, enhancing and adding to its robust product portfolio and providing unrivaled customer service, all qualities that will continue to serve us well for years to come.

- Investments in our Railroad and Utility Products and Services (RUPS) business are still in the early stages and have not yet reached their full potential. By combining multiple processes and increasing production activities at our RUPS facilities, we expect to generate substantial savings as well as improve our supply chain efficiency. And over the next five years, we anticipate the potential to extract significant value by continuing to optimize our network in this way. Some recent examples include efficiency improvements and production expansions at our facilities located in North Little Rock, Arkansas; Somerville, Texas; Newsoms, Virginia; and Vance, Alabama.

- While our Carbon Materials and Chemicals (CMC) segment still gets tagged as being our most volatile business, recent history has proven out that its earnings do not vary any more than our other segments. As a result of the restructuring plan implemented in prior years, this business has been vastly improved and now has a much more efficient cost structure. That stability enables us to put a greater focus on pursuing research and development opportunities to seek out new products and markets. For example, the use of carbon products to extend the battery life of electric vehicles reflects the team's innovative mindset and represents a potential game-changing opportunity for CMC to take its profitability to a new level.

Delivering On Our Promises

With our financial profile better than ever, we expect to generate consistently robust cash flow and further strengthen our balance sheet. Moving forward, having greater financial flexibility will free us to execute on a more balanced capital deployment strategy.

The current iteration of our strategy is rooted in the concept of expand and optimize. We plan to expand through increasing the reach of our portfolio of wood treatment products, services, and geographic markets. This extends to finding "cradle-to-cradle" uses and reuses of products as they cycle from initial production to customer use, to end-of-life status, and repurposing into a new product. The optimize side of the equation includes strengthening the business model through new services and portfolio improvements, along with ongoing efficiency improvements of current facilities, production processes, supply chain networks, and more.

A new Growth & Innovation team has been formed in support of this expand and optimize strategy. The role of this group includes analyzing and executing fresh thinking and new ideas to advance Koppers activities, products, services, and markets that will increase our bottom-line performance beyond the tenets of traditional mergers and acquisitions.

In August 2021, our Board of Directors approved a $100 million share repurchase program and in February 2022 reinstated a quarterly cash dividend that had been suspended for the past seven years. Those who have followed us over that time frame know that we have worked hard to transform Koppers into a stronger and more resilient organization and, as a result, we have not only weathered the many challenges thrown our way, but we have thrived as evidenced by the strength of our operating performance. As we're moving into the next phase of our strategy, we can bring more balance to our capital deployment strategy and begin returning cash to our shareholders through dividends and share repurchases, which we plan to do.

Moving Ahead With Strength and Confidence

We have worked hard to transform ourselves into an enduring, essential, and sustainable enterprise. Koppers is enduring due to the types of products we sell, the markets that we serve, and a business model that has, time and again, made us stronger than ever. We are essential, as proven by the global pandemic where our products were necessary to keep critical elements of the economy functioning. We are sustainable by continuing to earn our social license to operate by placing priority on our values of people, planet, and performance.

Koppers was named as one of "America's Most Responsible Companies" by Newsweek magazine for the second consecutive year, from more than 2,000 U.S. companies across 14 industries. It was an honor to again be recognized by Newsweek for our company's corporate performance in environmental, social, and governance areas, and the credit goes to our team members worldwide.

The pandemic forced us to use new tools to remain visible and communicate with our employees, and I plan to get back to in-person visits at our locations across the world. I strongly believe in the importance of making those personal connections and providing our people the chance to give their feedback directly. Despite the ongoing uncertainties related to the pandemic, our employees once again demonstrated that Koppers team members are some of the most generous and supportive people anywhere, as they led and participated in scores of fundraising activities and community events in 2021.

Board of Directors[2]

My sincere thanks go to our Board of Directors for another year of their reliable and thoughtful guidance. I consider myself immensely privileged to have such comprehensive and diverse experience on our Board to provide valuable perspective to key decisions and strategy.

This past year saw the retirement of our former Chief Financial Officer, Michael Zugay, who retired after seven years with the company and more than four decades of overall experience. He expertly led all aspects of the company's global financial function, as well as advised on several key strategic growth initiatives. His grace under fire, just as much as his knowledge and counsel on financial matters, has been priceless.

The world, the nation, our communities and families, and our company all have arrived at this critical point in history. As Koppers takes in the view of future opportunities as well as challenges, we are ready and equipped like never before to prosper. We pledge to continue applying our best efforts to reward your confidence as we step forward together.

Sincerely,

Leroy M. Ball
President and Chief Executive Officer

(1) Leadership Council

Front, left to right:

Joseph Dowd
Global Vice President, Zero Harm

Quynh McGuire
Vice President, Investor Relations

Back, left to right:

James Sullivan
Executive Vice President and Chief Operating Officer

Stephanie Apostolou
General Counsel and Secretary

Daniel Skrovanek
Vice President, Growth and Innovation

Jimmi Sue Smith
Chief Financial Officer

Leroy Ball
President and Chief Executive Officer

Leslie Hyde
Senior Vice President and Chief Sustainability Officer

Tushar Lovalekar
Vice President, Information Technology

(2) Board of Directors

Front, left to right:

Traci Jensen
Vice President, Global Business Process Improvement
H.B. Fuller Company

David Motley
Managing Partner
Bluetree Venture Fund

Stephen Tritch
Non-Executive Chairman of the Board
Retired Chairman
Westinghouse Electric Company

Xudong Feng
Director of Science and Technology and Global Analytical Sciences
PPG Industries, Inc.

Back, left to right:

Albert Neupaver
Chairman
Westinghouse Air Brake Technologies Corporation

Louis Testoni
Former Lake Erie Managing Partner
PricewaterhouseCoopers LLP

Leroy Ball
President and Chief Executive Officer
Koppers Holdings Inc. and Koppers Inc.

Sonja Wilkerson
Executive Vice President and Chief Human Resource Officer
Bloom Energy Corporation

Unaudited Reconciliations of Non-GAAP Financial Measures

This report contains certain non-GAAP financial measures. Koppers believes that adjusted EBITDA, adjusted EBITDA margin, adjusted earnings per share and net leverage ratio provide information useful to investors in understanding the underlying operational performance of the company, its business and performance trends, and facilitates comparisons between periods and with other corporations in similar industries. The exclusion of certain items permits evaluation and a comparison of results for ongoing business operations, and it is on this basis that Koppers management internally assesses the company's performance. In addition, the Board of Directors and executive management team uses adjusted EBITDA as a performance measure under the company's annual incentive plans.

Although Koppers believes that these non-GAAP financial measures enhance investors' understanding of its business and performance, these non-GAAP financial measures should not be considered an alternative to GAAP basis financial measures and should be read in conjunction with the relevant GAAP financial measure. Other companies in a similar industry may define or calculate these measures differently than Koppers, limiting their usefulness as comparative measures. Because of these limitations, these non-GAAP financial measures should not be considered in isolation or as substitutes for performance measures calculated in accordance with GAAP.

See the attached tables for the following reconciliations of non-GAAP financial measures referenced in this report: Unaudited Reconciliation of Net Income Attributable to Koppers and Adjusted Net Income, Unaudited Reconciliation of Diluted Earnings per Share and Adjusted Earnings per Share below; Reconciliation of Net Income to Adjusted EBITDA on page 67, and Unaudited Reconciliation of Total Debt to Net Debt and Net Leverage Ratio on page 43.

UNAUDITED RECONCILIATION OF NET INCOME ATTRIBUTABLE TO KOPPERS AND ADJUSTED NET INCOME

	Year ended December 31,
	2021
(In millions)	
Net income attributable to Koppers	**$ 85.2**
Adjustments to arrive at adjusted net income:	
Impairment, restructuring and plant closure costs	**5.5**
(Gain) on sale of assets	**(31.2)**
LIFO expense	**28.2**
Mark-to-market commodity hedging losses	**3.8**
Total adjustments	**6.3**
Adjustments to income tax and noncontrolling interests	
Income tax on adjustments to pre-tax income	**(1.4)**
Income tax attributable to statutory rate changes	**(1.2)**
Deferred tax adjustments	**3.5**
Noncontrolling interest	**(0.3)**
Effect on adjusted net income	**6.9**
Adjusted net income including discontinued operations	**92.1**
Discontinued operations	**0.2**
Adjusted net income attributable to Koppers	**$ 92.3**

UNAUDITED RECONCILIATION OF DILUTED EARNINGS PER SHARE AND ADJUSTED EARNINGS PER SHARE

	Year ended December 31,
	2021
(In millions except share and per share amounts)	
Net income attributable to Koppers	**$ 85.2**
Adjusted net income (from previous page)	**$ 92.3**
Denominator for diluted earnings per share (in thousands)	**21,925**
Earnings per share:	
Diluted earnings per share	**$ 3.88**
Adjusted earnings per share	**$ 4.21**

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

FORM 10-K

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

For the fiscal year ended December 31, 2021

Commission file number 1-32737

KOPPERS HOLDINGS INC.

(Exact name of registrant as specified in its charter)

Pennsylvania (State of incorporation)	**20-1878963** (IRS Employer Identification No.)
436 Seventh Avenue **Pittsburgh, Pennsylvania 15219** (Address of principal executive offices)	**(412) 227-2001** (Registrant's telephone number, including area code)

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock	KOP	The New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act: Yes ☐ No ☒

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

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

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

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

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

Emerging Growth Company ☐

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

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

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

The aggregate market value of shares of Common Stock held by non-affiliates of the registrant, based on the closing sales price of the Common Stock on the New York Stock Exchange on June 30, 2021 was $666.7 million (affiliates, for this purpose, have been deemed to be Directors and executive officers of Koppers Holdings Inc.).

As of January 31, 2022, 21,127,033 shares of Common Stock of the registrant were issued and outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive Proxy Statement for the 2022 Annual Meeting of Shareholders are incorporated by reference into Part III of this Annual Report on Form 10-K.

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FORWARD-LOOKING STATEMENTS

This report and the documents incorporated herein by reference contain "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995 and may include, but are not limited to, statements about sales levels, acquisitions, restructuring, declines in the value of Koppers assets and the effect of any resulting impairment charges, profitability and anticipated synergies, expenses and cash outflows. All forward-looking statements involve risks and uncertainties. All statements contained herein that are not clearly historical in nature are forward-looking, and words such as "outlook", "guidance", "forecast", "believe", "anticipate", "expect", "estimate", "may", "will", "should", "continue", "plan", "potential", "intend", "likely" or other similar words or phrases are generally intended to identify forward-looking statements. Any forward-looking statement contained herein, regarding expectations with respect to sales, earnings, cash flows, operating efficiencies, restructurings, product introduction or expansion, the benefits of acquisitions and divestitures or other matters, as well as financings and debt reduction, are subject to known and unknown risks, uncertainties and contingencies.

Many of these risks, uncertainties and contingencies are beyond our control, and may cause actual results, performance or achievements to differ materially from anticipated results, performance or achievements. Factors that might affect such forward-looking statements include, among other things:

- availability of and fluctuations in the prices of key raw materials, including coal tar, lumber and scrap copper;
- the impact of changes in commodity prices, such as oil, copper and chemicals, on product margins;
- the ratings on our debt and our ability to repay or refinance our outstanding indebtedness as it matures;
- our ability to operate within the limitations of our debt covenants;
- capital market conditions, including interest rates, borrowing costs and foreign currency rate fluctuations;
- general economic and business conditions, including demand for our goods and services;
- existing and future adverse effects as a result of the coronavirus (COVID-19) pandemic;
- the impact of the COVID-19 pandemic on our suppliers, including disruptions and inefficiencies in the supply chain;
- potential difficulties in protecting intellectual property;
- potential impairment of our goodwill and/or long-lived assets;
- the effects of competition in the industries in which we operate, including locations of competitors and operating and market competition;
- economic, political and environmental conditions in international markets, including governmental changes, tariffs, restrictions on trade and restrictions on the ability to transfer capital across countries;
- changes in laws, including tax regulations or accounting standards, third-party relations and approvals, and decisions of courts, regulators and governmental bodies;
- parties who are obligated to indemnify us for liabilities, including legal and environmental liabilities, fail to perform under their legal obligations;
- unfavorable resolution of litigation or other legal proceedings against us; and
- the other factors set forth under "Risk Factors"; as well as those discussed more fully elsewhere in this Form 10-K.

We caution you that the foregoing list of important factors may not contain all of the material factors that are important to you. In addition, in light of these risks and uncertainties, the matters referred to in the forward-looking statements contained in this report and the documents incorporated by reference herein may not in fact occur. We undertake no obligation to publicly update or revise any forward-looking statement as a result of new information, future events or otherwise, except as otherwise required by law.

PART I

ITEM 1. BUSINESS

General

In this report, unless otherwise noted or the context otherwise requires, (i) the term "Koppers", "Koppers Holdings", the "Company", "we" or "us" refers to Koppers Holdings Inc. and its consolidated subsidiaries, (ii) the term "KH" refers to Koppers Holdings Inc. and not any of its subsidiaries and (iii) the term "KI" refers to Koppers Inc. and not any of its subsidiaries. Koppers Inc. is a wholly-owned subsidiary of Koppers Holdings Inc. Koppers Holdings Inc. has substantially no operations independent of Koppers Inc. and its subsidiaries. The use of these terms is not intended to imply that Koppers Holdings Inc. and Koppers Inc. are not separate and distinct legal entities from each other and from their respective subsidiaries. Koppers Holdings Inc. was incorporated in November 2004 as a holding company for Koppers Inc.

We are a leading integrated global provider of treated wood products, wood preservation chemicals and carbon compounds. Our products and services are used in a variety of niche applications in a diverse range of end-markets, including the railroad, specialty chemical, utility, residential lumber, agriculture, aluminum, steel, rubber and construction industries. We serve our customers through a comprehensive global manufacturing and distribution network, with manufacturing capabilities in North America, South America, Australasia and Europe.

Business Segments and Products

We operate three principal business segments: Railroad and Utility Products and Services ("RUPS"), Performance Chemicals ("PC") and Carbon Materials and Chemicals ("CMC").

We believe our three business segments command leading market positions. Through our RUPS business, we believe that we are the largest supplier of railroad crossties to the Class I railroads in North America. Through our CMC business, we believe we are the largest global supplier of creosote to the North American railroad industry. Through our PC business, we believe that we are the global leader in developing, manufacturing and marketing wood preservation chemicals and wood treatment technologies for use in the pressure treating of lumber for residential, industrial and agricultural applications.

Our RUPS and CMC operations are, to a substantial extent, vertically integrated. Through our CMC business, we process coal tar into a variety of products, including creosote, which is an intermediate material necessary in the pressure treatment of wood crossties, other related railroad products and utility poles. The majority of the creosote we produce in North America and Europe is sold internally to our RUPS business and consumed in the treating process.

Our RUPS and PC operations are also vertically integrated. Through our PC business, we produce a variety of products, including chromated copper arsenate, which is used in the pressure treatment of utility poles and pilings. A portion of the chromated copper arsenate we produce in North America and Australia is sold internally to our RUPS business for treating poles and pilings.

Railroad and Utility Products and Services

Our RUPS business sells treated and untreated wood products, rail joint bars and services primarily to the railroad markets in the United States and Canada and treated wood products and services to the utility markets in the United States and Australia. We also operate a railroad services business that conducts engineering, design, repair and inspection services for railroad bridges and a business related to the recovery of used crossties, serving the same customer base as our North American railroad business. The primary end-markets for RUPS are the North American railroad industry, which has an installed base of approximately 450 million wood crossties, and the U.S. and Australian utility industries which utilizes wooden distribution and transmission poles. Both crossties and utility poles require periodic replacement.

Railroad products and services include procuring and treating items such as crossties, switch ties and various types of lumber used for railroad bridges and crossings. Railroad products also include manufacturing and selling rail joint bars, which are steel bars used to join rails together for railroads. Utility products, located in the United States and Australia, include the pressure treatment of transmission and distribution poles for electric and telephone utilities. The RUPS business operates 18 wood

treating plants and one rail joint bar manufacturing facility located throughout the United States, Canada and Australia. Our network of plants is strategically located near timber suppliers to enable us to access raw materials and service customers effectively. In addition, our crosstie treating plants are typically adjacent to our largest railroad customers' rail lines.

Our RUPS business manufactures its primary products and sells them directly to our customers through long-term contracts and purchase orders negotiated by our regional sales personnel and coordinated through our marketing group at corporate headquarters.

Hardwoods, such as oak and other species, are the major raw materials in wood crossties. Hardwood prices, which account for approximately 70 percent of a finished crosstie's cost, fluctuate with the demand from other hardwood lumber markets, such as oak flooring, pallets and other specialty lumber products. Weather conditions can be a factor in the supply of raw material, as unusually wet or inclement conditions may make it difficult to harvest timber.

In the United States, hardwood lumber for crossties is procured by us from hundreds of small sawmills throughout the northeastern, midwestern and southern areas of the country. The crossties are shipped via rail car or trucked directly to one of our crosstie treating plants, all of which are on line with a major railroad. The crossties are either air-stacked for a period of six to nine months or artificially dried by a process called boultonizing. Once dried, the crossties are pressure treated with creosote, a product of our CMC business. A substantial portion of our crossties are treated with borate, which is purchased from PC, in combination with creosote.

We believe we are the largest supplier of railroad crossties to the Class I railroads in North America. We have one principal competitor, Stella-Jones Inc., and several smaller regional competitors in the North American market. Competitive factors in the railroad crosstie market include price, quality, location, service and security of supply. We believe we have a competitive advantage due to our ability to obtain internally-sourced creosote and our national network of treating plants which have direct access to our major customers' rail lines. These advantages provide for security of supply and logistics advantages for our customers.

Our RUPS business' largest customer base is the North American Class I railroad market, which buys approximately 76 percent of all crossties produced in the United States and Canada. Approximately 75 percent of our North American RUPS sales are under long-term contracts and we currently supply all North American Class I railroads. We also have relationships with many of the approximately 600 short-line and regional rail lines. This also forms the customer base for our rail joint bar products. The railroad crosstie market trended higher in 2021, with approximately 18.8 million replacement crossties purchased during the year, up from 18.7 million and 18.5 million purchased during 2020 and 2019, respectively.

We believe our North American utility pole business is the second largest producer of utility poles in the United States, and we believe our Australian utility pole business is the largest producer of utility poles in Australia. Utility poles are produced mainly from pine species in the United States and the eucalyptus species in Australia. Most of these poles are purchased from large timber owners and individual landowners and shipped to one of our pole-peeling facilities. In North America and Australia, in addition to utility poles, we market pilings for marine applications and smaller poles to the agricultural landscape and vineyard markets. We treat poles with a variety of preservatives, including chromated copper arsenate and creosote, which we produce internally and purchase from PC and CMC. We also operate a business related to the recovery of used utility poles and a business related to the inspection of utility poles.

Performance Chemicals

Our PC business maintains sales and manufacturing capabilities in the United States, Canada, Europe, South America, Australia and New Zealand. We believe we have the number one market share in North America, Australia and New Zealand. Our North American sales represent approximately 70 percent of PC's total revenue. The primary products supplied by PC are copper-based wood preservatives, including micronized copper azole ("MicroPro®"), micronized pigments ("MicroShades®"), alkaline copper quaternary, amine copper azole and chromated copper arsenate. The primary applications for these products include decking, fencing, utility poles, construction lumber and timbers, and various agricultural uses. Additionally, we are a leading supplier of fire-retardant chemicals ("FlamePro®") for pressure treatment of wood, primarily in commercial construction, where applicable. Because we are a global supplier of wood preservatives, we face various competitors in all the geographic regions in which we participate.

PC supplies eight of the ten largest lumber treating companies in the United States, the largest treated wood market in the world, in addition to the three largest lumber treating companies in Canada. In North America, our PC business is vertically integrated through the manufacturing of copper compounds for our copper-based wood preservatives. We purchase over 32 million pounds of scrap copper, in addition to other compounds containing copper, our key raw material, which we process to meet the annual demand of this major market. When we purchase scrap copper, it is shipped to our manufacturing plants in Hubbell, Michigan and Millington, Tennessee for further processing into other copper compounds. We utilize swap contracts to hedge our exposure to copper prices.

We believe that being vertically integrated in copper manufacturing provides PC with an important competitive advantage and also provides our customers with the security of a supply of copper-based wood preservatives. Likewise, we believe that our marketing, engineering, and technical support services provide added value to our customer base, who supply pressure-treated wood products to large retailers and independent lumber dealers. We believe another competitive advantage is provided by our strategic sourcing group, which procures scrap copper and other raw materials, such as chromic acid, tebuconazole, arsenic trioxide, colorants, dispersants and various biocides and co-biocides through the global market.

Carbon Materials and Chemicals

Our CMC business manufactures its primary products and sells them directly to our global customer base under long-term contracts or through purchase orders negotiated by our regional sales personnel and coordinated through our regional marketing groups. Our three coal tar distillation facilities and five carbon materials terminals give us the ability to offer customers multiple sourcing options and a consistent supply of high-quality products.

For much of the past decade, the coal tar distillation industry has operated in an excess capacity mode, which further increased the competition for a limited amount of coal tar in North America and Europe. In 2014, we embarked on a plan to restructure our CMC operating footprint that reduced our global number of coal tar distillation facilities from the 11 that existed as of January 1, 2014 to three in total as of December 31, 2021. In September 2020, we sold our remaining Chinese distillation facility in operation, Koppers (Jiangsu) Carbon Chemical Company Limited ("KJCC") located in Pizhou, Jiangsu Province as discussed in Note 5 – "Discontinued Operations".

Our CMC business has experienced challenges over the past several years due to the closure of aluminum smelters that has occurred in North America, Western Europe and Australia. The smelting of aluminum requires significant amounts of energy, which is a major cost component for the aluminum industry. As a result, new production facilities are being built in regions with low energy costs such as the Middle East, while regions with higher energy costs such as North America, Western Europe and Australia have seen significant amounts of smelting capacity idled or closed over the last several years.

Our CMC business manufactures the following principal products:

- creosote, used in the treatment of wood or as a feedstock in the production of carbon black;
- carbon pitch, a critical raw material used in the production of aluminum and steel;
- naphthalene, used as a feedstock in the production of phthalic anhydride and as a surfactant in the production of concrete; and
- phthalic anhydride, used in the production of plasticizers, polyester resins and alkyd paints, respectively.

Creosote, carbon pitch, naphthalene, and carbon black feedstock are produced through the distillation of coal tar, a by-product generated through the processing of coal into coke for use in steel and iron manufacturing. Coal tar distillation involves the conversion of coal tar into a variety of intermediate chemical products in processes beginning with distillation. During the distillation process, heat and vacuum are utilized to separate coal tar into three primary components: chemical oils, distillate and carbon pitch.

In the United States, our primary coal tar raw material supply contracts generally have terms ranging from three to ten years, and most provide options for renewal. Pricing under these contracts is either formula-based or negotiated on a quarterly or semi-annual basis. Our primary European tar supply contract has a remaining term of approximately five years, extending indefinitely thereafter unless terminated by a one-year advance notice, and contains formula-based tar pricing. Finally, our primary Australian supply contracts have terms ranging from three to ten years and contain formula-based pricing which is adjusted on an annual or semi-annual basis.

Technology and Licensing

In 1988, we acquired the "Koppers" trademark from Koppers Company, Inc. The association of the name with the chemical, building, wood preservation and coke industries is beneficial to our company, as it represents long-standing, high quality products. Trademarks relating to our PC business, such as "MicroPro®", "FlamePro®", "Protim" and "Solignum" are important in this segment of our business, and as long as we continue to use the name "Koppers" and the trademarks associated with our wood preservation business and comply with applicable registration requirements, our right to use the name "Koppers" and the other trademarks should continue without expiration. The expiration of other trademark rights is not expected to materially affect our business.

Backlog

Generally, Koppers does not manufacture its products against a backlog of orders. Inventory and production levels are typically driven by expectations of future demand based on contractual obligations. Our RUPS business carries significant amounts of untreated crosstie inventory, which typically requires air-seasoning for a period of six- to nine-months.

Seasonality

Demand for residential, commercial, and agricultural treated lumber may decline during winter months due to weather conditions. In addition, inclement or winter weather may affect access to certain raw materials or impact operations at our facilities. As a result, operating results may vary from quarter to quarter depending on the severity of weather conditions and other variables affecting our products. Historically, our operating results have been significantly lower in the first and fourth calendar quarters as compared to the second and third calendar quarters.

Segment Information

Please see "Note 9 – Segment Information," under Item 8 of this Form 10-K for financial information relating to business segments and geographic areas. See also "Item 1A. Risk Factors – Risks Related to Our Business – Demand for our products is cyclical and we may experience prolonged depressed market conditions for our products."

Non-U.S. Operations

Koppers has a significant investment in non-U.S. operations. Therefore, we are subject to certain risks that are inherent to foreign operations, including complying with applicable laws relating to foreign practices, the laws of foreign countries in which we operate, political and economic conditions in international markets, the imposition of tariffs and fluctuations in foreign exchange rates. See also "Item 1A. Risk Factors – Risks Related to Our Business – We are subject to risks inherent in foreign operations, including additional legal regulation, changes in social, political and economic conditions."

Environmental Matters

Our operations and properties are subject to extensive federal, state, local and foreign environmental laws and regulations relating to protection of the environment and human health and safety, including those concerning the treatment, storage and disposal of wastes, the investigation and remediation of contaminated soil and groundwater, the discharge of effluents into waterways, the emission of substances into the air, as well as various health and safety matters. Environmental laws and regulations are subject to frequent amendment and have historically become more stringent over time. We have incurred and could incur in the future significant costs if we fail to comply with regulations and responsibilities under environmental laws and regulations, including cleanup costs, civil and criminal penalties, injunctive relief and denial or loss of, or imposition of significant restrictions on, environmental permits. In addition, we have been and could in the future be subject to suit by private parties in connection with alleged violations of, or liabilities under, environmental laws and regulations. Additional information on environmental matters is available in Item 1A under "Risks Related to Our Business" and Note 19 of the Notes to Consolidated Financial Statements, "Commitments and Contingent Liabilities."

Employees and Employee Relations

As of December 31, 2021, we had 945 salaried employees and 1,143 non-salaried employees. Listed below is a breakdown of employees by our businesses, including administration.

Business	*Salaried*	*Non-Salaried*	*Total*
Railroad and Utility Products and Services	358	750	1,108
Performance Chemicals	241	167	408
Carbon Materials and Chemicals	208	214	422
Administration	138	12	150
Total Employees	945	1,143	2,088

Approximately 424 of our employees are represented by a number of different labor unions and are covered under numerous labor agreements. The labor contracts at three of our facilities covering approximately 132 employees are scheduled to expire during 2022.

Human Capital Management

Our ability to positively affect our communities starts with investing in our people. We put the health, safety and well-being of our employees at the forefront of everything we do as part of our Zero Harm culture. Our people-focused strategy considers all aspects of the employee experience, from hiring practices and onboarding to health and wellness and talent management. We seek to create and foster an inclusive and welcoming culture where all employees feel empowered and can directly impact and share in the organization's success. Key to this effort is delivering a consistent onboarding experience, as well as communications and safety training in all of our facilities across the globe.

Talent Attraction and Retention

Our talented employees are a critical element to make our business successful, so it is essential that we position them for success. It is also important that we continue attracting top talent to our workforce. Our Culture and Engagement team leads these efforts to attract, retain and develop our employees and has created various programs to enhance the skill set of our workforce. Recognizing the importance of a consistent and comprehensive onboarding and safety training experience for new hires across our facility footprint, we have a web-based training program to ensure every employee receives a consistent message from the start of their employment. The program includes videos detailing our company and our primary business lines as well as a new hire folder filled with information on employee programs, services, benefits and more.

We also have a toolkit to help managers guide new employees for success and we conduct regular new hire surveys to solicit feedback and identify opportunities for improvement. We continue to evaluate and employ methods to identify at-risk behaviors during the hiring process to place prospective employees in appropriately suited positions where they can be successful and workplace injuries can be avoided. This behavioral data also enables us to tailor training and onboarding based on the opportunities it highlights.

Performance Management

To ensure our employees have the best opportunity for success, our performance development process includes periodic meetings between employees and managers to discuss their goals and strategies to achieve them. We no longer conduct traditional annual reviews and instead opt for these more frequent two-way discussions focused on fostering ideas that will enable employee success. Each manager is expected to meet one-on-one at least monthly with their employees to discuss tailored strategies to encourage employee success like additional training, attendance at conferences or establishing connections to others within our company. These monthly meetings also help managers gauge employee engagement and develop approaches to increase and sustain positive engagement.

We also have a New Hire Mentoring Program as another component of our development process. The program provides both hourly and salaried employees an extra opportunity to receive support from experienced employees and discuss any ideas they may have for improving our operations or their work experience. Prior to participating, mentors and mentees receive training on getting the most out of the program.

Training and Education

As a part of our people-focused approach to our operations, we are committed to helping our employees thrive in their roles and grow both personally and professionally. A major component of this plan is our commitment to providing each employee with the training and education they need to be successful. Under the umbrella of our Koppers College, we provide leadership development training to our front-line employees to expand their growth opportunities within the organization. We also foster innovation and develop our next wave of high-potential employees through our leadership forum, an intensive nine-month program conducted in partnership with a university local to our corporate headquarters. Approximately ten to twelve employees from across the world are chosen annually for each cohort. Selected participants travel to our corporate headquarters to take part in workshops facilitated by university professors and business leaders. We also offer our employees a tuition reimbursement program to help them pursue degrees and certifications related to relevant skills they utilize for their positions to further personal and company success.

Inclusion and Diversity

We support an inclusive and diverse work environment across our company through a range of strategic programs. Our internal processes and programs target inclusion and diversity as a key area of importance and externally we place emphasis on the topic during philanthropic activities. Our Director for Global Inclusion and Diversity focuses on supporting our strategy to be an employer of choice, and helps to ensure that all employees feel they are heard and valued to harness the power of an engaged workforce.

Compensation and Benefits

We encourage employee participation in our benefit programs for saving for retirement through robust defined contribution and employee stock purchase programs. The U.S. 401(k) program includes both traditional matching and an additional non-elective company contribution based on organizational performance. When the company achieves the established performance target, employees share in this success through an automatic contribution to their 401(k) accounts. We also offer our employees the option to acquire Koppers stock through an employee stock purchase program. The program gives our employees the opportunity to buy shares at a discount through payroll deductions during defined quarterly offering periods.

Health and Safety

We believe a robust wellness program that encourages employee participation is key to promoting healthy lifestyles and decision-making. Our wellness screening program for our U.S.-based employees provides employees the opportunity to learn more about their health and daily routines. As part of this program, employees can earn financial incentives for completing a variety of wellness initiatives. Recognizing the importance of supporting our employees in all aspects of their lives, we provide an Employee Assistance Program with a full range of supportive resources including financial wellness, mental health and family services. For our U.S.-based employees, we also offer four weeks of paid time-off for mothers and fathers who have a birth or adoption as part of our parental bonding leave program. Additionally, we offer work schedule flexibility including the opportunity to work remotely when conditions allow.

We work with a Zero Harm approach to every employee's health and safety. Zero Harm includes policies that guide our safety practices and procedures throughout all of our facilities, a focus on leading activities that prevent accidents and a leadership culture that insists the health and safety of our employees comes ahead of everything we do.

Environmental, Social and Governance Matters

Corporate social responsibility, our obligation to people, the environment, and to good corporate governance processes, has been a part of our culture for many years. We believe this culture, supported by a spirit of collaboration and innovation, allows us to decrease our impact on the environment and create value for all of our stakeholders. We published our first Corporate Social Responsibility report (CSR) in 2008 and our historical CSR reports are available on www.koppers.com/pages/sustainability. The contents of our corporate website are not incorporated by reference in this Annual Report on Form 10-K or in any other report or document we file with the Securities and Exchange Commission.

We have established a governance structure to support and develop our sustainability practices. In 2020, we established a Sustainability Committee of the board of directors to provide oversight of our programs. Management provides direction through its Leadership Council, chaired by the CEO. Our Sustainability Steering Committee provides guidance on goals and programs designed to improve our performance against those expectations. Toward this goal in 2019, we conducted a materiality analysis, both internal and external, that highlighted the areas where we can most effectively address the needs of our stakeholders.

Environmental

The circular nature of our business starts with our raw materials, the majority of which are by-products generated by other industries (including scrap copper and coal tar) and renewable resources (trees). We purchase approximately 32 million pounds of scrap copper per year which is postconsumer or post-industrial in nature. We believe this places Koppers in the center of what is known as the "circular economy" that emphasizes the "reduce, reuse, recycle" mentality that continues to frame global conservation efforts. Our wood-treatment solutions, while supporting an important role in our global infrastructure across multiple industries, also support an important role in the carbon cycle. Treating wood significantly increases its useful lifespan, allowing the carbon stored within the wood to be immobilized for up to 50 years, keeping it out of the atmosphere and limiting its impact on the environment. In addition, we have businesses which have product life cycle management capabilities to help solve our customers' challenge of responsibly disposing of end-of-life crossties and utility poles by repurposing used wood products, including as a fuel source. This reduces the end-of-life impact of our ties and poles, contributing to greater product sustainability.

Social

We are committed to proactively evaluating and addressing community needs in the areas where we operate. Many of our locations have made strong connections with local community members, allowing Koppers representatives to share facility information and address any questions, observations, concerns and ideas. Our community impact is demonstrated through our employees' volunteer commitments and a corporate philanthropy program. Employees worldwide volunteer their time to mentor students, enhance local education initiatives, take care of the elderly, assist at homeless shelters and provide hands-on help to those affected by natural disasters.

We believe our ability to positively impact our communities and environment starts with investing in our employees. Our people-focused strategy considers all aspects of the employee experience, from hiring practices and onboarding to health and wellness and talent management.

- Collaboration – Communication across our global footprint drives our efforts. All Koppers employees take part in safety training programs and provide direct feedback to leadership as part of the company's annual engagement survey.
- Inclusion and Diversity – We are committed to supporting inclusion and diversity in process and practice. Our Culture and Engagement team ensures that a diverse slate of candidates is considered for open positions. Our employee resource groups, LINKWomen, which was launched in 2018, and LINKParents, which was launched in 2021, provide an important development forum for employees and serve as a model for future initiatives. Additionally, the composition of our board of directors has been recognized for gender and racial diversity.

Governance

We believe our corporate governance structure is designed to assure accountability to our stakeholders and to make certain that we conduct business in a responsible, ethical way. We maintain a comprehensive Code of Conduct that details the expectations and requirements we have as an organization for our employees. This Code of Conduct applies to all employees, whether we are engaging in peer-to-peer interactions, working to comply with complex regulations, marketing our products, purchasing materials, creating new products, managing our finances or interacting with our communities.

Our board of directors is broadly responsible for contributing to the strategic direction and oversight of the company. There are five board committees, including: Audit; Nominating and Corporate Governance; Management Development and Compensation; Strategy and Risk; and Sustainability. Among its duties and responsibilities, the Board oversees management's direction of the legal, ethical and socially responsible behavior of the company, such as developing effective performance measurement systems, reviewing the company's long-term strategy and overseeing risk management processes.

Our Leadership Council is responsible for directing the development and implementation of the company's strategic plan and business operations around the globe. These executive leaders establish and maintain our commitment to ethics, integrity, fiscal responsibility, growth and sustainability.

Internet Access

Our Internet address is www.koppers.com. Our recent filings on Forms 10-K, 10-Q and 8-K and any amendments to those documents can be accessed without charge on our website under Investor Relations – SEC Filings as soon as reasonably practicable after such filings are made with the Securities and Exchange Commission. The contents of our Internet site are not incorporated by reference into this document.

ITEM 1A. RISK FACTORS

You should carefully consider the risks described below before investing in our publicly traded securities. Our business is subject to the risks that affect many other companies, such as competition, technological obsolescence, labor relations, general economic conditions, geopolitical events and international operations.

Risks Related to Our Business

Fluctuations in the price, quality and availability of our primary raw materials could reduce our profitability.

Our operations depend on an adequate supply of quality raw materials being available on a timely basis. The loss of a key source of supply or a delay in shipments could cause a significant increase in our operating expenses. For example, our operations are highly dependent on a relatively small number of freight transportation services. We are also dependent on specialized ocean-going transport vessels that we lease to deliver raw materials to our facilities and finished goods to our customers. Interruptions in such freight services could impair our ability to receive raw materials and ship finished products in a timely manner. We are also exposed to price and quality risks associated with raw material purchases. Such risks include the following:

- The availability and cost of lumber are critical elements in our production of railroad crossties and pole products for our RUPS business. Historically, the supply and cost of hardwood for railroad crossties have been subject to availability and price pressures. We may not be able to obtain wood raw materials at economical prices in the future or be able to pass on higher raw material costs to our customers.
- The availability of scrap copper is a critical element in our production of copper-based wood preservation chemicals for our PC business. Our purchase price for scrap copper is based upon spot prices in the copper market, which may be subject to sudden price changes. We may not be able to obtain scrap copper at prices that match underlying pricing commitments to our customers.
- Pentachlorophenol had a significant market share for the treatment of utility poles in the United States and was a treatment preservative, in addition to chromated copper arsenate and creosote, that we used to treat utility poles. In 2021, the only North American manufacturer of pentachlorophenol ceased production. End-users of treated utility poles who required the use of pentachlorophenol-treated utility poles have adopted or are in the process of adopting other available treatment systems for their electrical transmission and distribution networks. Although we have converted a substantial number of customers to alternative treatment systems, we may lose market share if some of our customers select, or subsequently switch to, a treatment system that we do not offer.

- The primary raw material used by our CMC business is coal tar, a by-product of furnace coke production. Currently, our CMC business supplies our North American RUPS business with 100 percent of its creosote requirements. A shortage in the supply of domestic coal tar or a reduction in the quality of coal tar could require us to increase coal tar or creosote imports to meet future creosote demand. This could cause a significant increase in our operating expenses and we may be unable to pass some or all of these costs on to our customers.
- In certain circumstances coal tar may also be used as an alternative to fuel. In the past, increases in energy prices have resulted in higher coal tar costs which we have attempted to pass through to our customers. If these increased costs cannot be passed through to our customers, it could result in reduced profitability for our coal tar-based products.
- Our price realizations and profit margins for phthalic anhydride have historically fluctuated with the price of orthoxylene and its relationship with phthalic anhydride; however, during periods of excess supplies of phthalic anhydride, profitability may be reduced despite high levels for orthoxylene prices.
- Our price realizations and profit margins for phthalic anhydride, naphthalene and carbon black feedstock have historically fluctuated with the market price of crude oil, market prices for chemicals derived from crude oil, such as orthoxylene, or market indices derived from crude oil.
- We import certain raw materials that are used in our products that are, or may become, subject to tariffs, trade restrictions or supply chain disruptions.
- We experienced supply chain disruptions during 2021 with respect to key chemicals that we utilize in our business and items necessary for the completion of key capital improvement projects. For example, in the third and fourth quarters of 2021, our PC and utility and industrial products businesses were negatively impacted when late deliveries of chromic acid, which is used in a key wood treatment chemical, resulted in lost sales and higher costs to serve customers with limited supply. We may continue to experience such disruptions and those disruptions could have a material impact on our results of operations.

If the costs of raw materials increase significantly and we are unable to offset the increased costs with higher selling prices, our profitability will decline.

We face risks related to our substantial indebtedness.

As of December 31, 2021, we had total outstanding debt of $789.1 million, and approximately $305.2 million of additional unused borrowing capacity under our $600.0 million senior secured revolving credit facility and $100.0 million secured term loan facility (collectively, the "Credit Facility"). Our substantial leverage could adversely affect our ability to raise additional capital to fund our operations, limit our ability to react to changes in the economy or our industry, expose us to interest rate risk associated with our variable rate debt and prevent us from meeting our obligations under the Senior Notes due 2025 (the "2025 Notes") and the Credit Facility as described in Note 15 of the Notes to Consolidated Financial Statements. Our high level of debt can result and in the past has resulted in a substantial portion of cash flow from operations being dedicated to the payment of principal and interest on our debt, thereby reducing our ability to use our cash flow to fund our operations, including paying our vendors within agreed upon terms, capital expenditures, and business opportunities.

A high level of indebtedness could have other adverse consequences to us, including:

- making it more difficult for us to make payments on our debt;
- increasing our vulnerability to general economic and industry conditions;
- exposing us to the risk of increased interest rates as certain of our borrowings under our Credit Facility are at variable rates;
- restricting us from making strategic acquisitions or causing us to make non-strategic divestitures;
- limiting our ability to obtain additional financing for working capital, capital expenditures, product development, debt service requirements, acquisitions, and general corporate or other purposes; and
- limiting our ability to adjust to changing market conditions and placing us at a competitive disadvantage compared to our competitors who may be less highly leveraged.

We and our subsidiaries may be able to incur substantial additional indebtedness in the future, subject to the restrictions contained in our Credit Facility and the indenture governing the 2025 Notes. If new indebtedness is added to our current debt levels, the related risks that we now face could intensify.

Our debt agreements contain restrictions that limit our flexibility in operating our business.

Our Credit Facility and the indenture governing the 2025 Notes contain various covenants that limit our ability to engage in specified types of transactions. These covenants limit our ability and the ability of our restricted subsidiaries to, among other things:

- incur additional debt;
- pay dividends or distributions on our capital stock or repurchase our capital stock;
- issue stock of subsidiaries;
- make certain investments;
- create liens on our assets to secure debt;
- enter into transactions with affiliates;
- merge or consolidate with another company; and
- sell or otherwise transfer assets.

In addition, under the Credit Facility, we are required to meet specified financial ratios in order to undertake certain actions, and we are required to maintain a specified minimum fixed charge coverage ratio, a maximum total secured leverage ratio and a maximum total leverage ratio. Our ability to meet those tests can be affected by events beyond our control, and we cannot assure you that we will meet them. A breach of any of these covenants could result in a default under our Credit Facility. Upon the occurrence of an event of default under our Credit Facility, the lenders could elect to declare all amounts outstanding under our Credit Facility to be immediately due and payable and terminate all commitments to extend further credit. Such a declaration by the lenders under our Credit Facility would also constitute an event of default under our 2025 Notes. Similarly, a default under our 2025 Notes could also constitute an event of default under our Credit Facility.

If we were unable to repay those amounts, the lenders under our Credit Facility could proceed against the collateral granted to them to secure such indebtedness. We have pledged substantially all of our assets as collateral under our Credit Facility. If the lenders under our Credit Facility accelerate the repayment of borrowings, we cannot assure you that we will have sufficient assets to repay our Credit Facility, as well as our unsecured indebtedness, including the 2025 Notes.

We may not be able to generate sufficient cash to service all of our indebtedness, including the 2025 Notes, and may be forced to take other actions to satisfy our obligations under our indebtedness, which may not be successful.

Our ability to make scheduled payments on or to refinance our debt obligations depends on our financial condition and operating performance, which are subject to prevailing economic and competitive conditions and to certain financial, business and other factors beyond our control. We cannot assure you that we will maintain a level of cash flows from operating activities sufficient to permit us to pay the principal, premium, if any, and interest on our indebtedness, including the 2025 Notes.

If our cash flows and capital resources are insufficient to fund our debt service obligations, we may be forced to reduce or delay investments and capital expenditures, delay payments to vendors, sell assets, seek additional capital, or restructure or refinance our indebtedness, including the 2025 Notes. These alternative measures may not be successful and may not permit us to meet our scheduled debt service obligations. In the absence of such operating results and resources, we could face substantial liquidity problems and might be required to dispose of material assets or operations to meet our debt service and other obligations. Our Credit Facility restricts our ability to dispose of assets and use the proceeds from the disposition. We may not be able to consummate those dispositions or to obtain the proceeds that we could realize from them and these proceeds may not be adequate to meet any debt service obligations then due.

The interest rate of our Credit Facility is priced using a spread over LIBOR.

LIBOR, the London interbank offered rate, is the basic rate of interest used in lending between banks on the London interbank market and is widely used as a reference for setting the interest rate on loans globally. We use LIBOR as a reference rate in our Credit Facility such that the interest due to our creditors pursuant to our Credit Facility is calculated using LIBOR and our Credit Facility contains a stated minimum value for LIBOR. The United Kingdom's Financial Conduct Authority, which regulates LIBOR, announced that it will phase out LIBOR benchmark settings for U.S. Dollar borrowings on June 30, 2023. The U.S. Federal Reserve, in conjunction with the Alternative Reference Rates Committee, a steering committee comprised of large U.S. financial institutions, is focused on replacing U.S. dollar LIBOR with one or more new indexes, including one index calculated by short-term repurchase agreements, backed by Treasury securities – Secured Overnight Financing Rate ("SOFR"). SOFR is observed and backward looking, which stands in contrast with LIBOR under the current methodology, which is an estimated forward-looking rate and relies, to some degree, on the expert judgment of submitting panel members. Another index, the Bloomberg Short-Term Bank Yield Index ("BSBY") is also being considered by a number of money center and regional banks as a replacement for LIBOR. The U.S. Federal Reserve, the Office of the Comptroller of the Currency and the Federal Deposit Insurance Corporation have stated that they will not endorse a specific replacement for LIBOR-based loans and that financial institutions will be allowed to use any reference rate that such institution determines to be appropriate for its funding model and customer needs.

Given that SOFR is a secured rate backed by government securities, it will be a rate that does not take into account bank credit risk (as is the case with LIBOR). SOFR is therefore likely to be lower than LIBOR and is less likely to correlate with the funding costs of financial institutions. In addition, some banks which are using SOFR are imposing an additional adjustment to be added to SOFR to cause it to better track historic LIBOR rates. BSBY, on the other hand, is calculated using systemic bank credit spreads based on average yields at which large, global banks access U.S. Dollar senior unsecured marginal wholesale funding. It is calculated and published by Bloomberg L.P. on a daily basis based on a variety of information available to Bloomberg L.P. When LIBOR ceases to exist, we will renegotiate our credit agreements that utilize LIBOR as a factor in determining the interest rate to replace LIBOR with the new standard that is established.

In December 2021, we amended our Credit Facility to replace LIBOR based interest rates used in calculating interest in formerly LIBOR based loans denominated in Pounds Sterling and Euros. The new rates will be calculated using specified successor index rates for each currency to replace the previous LIBOR based rate structure.

Demand for our products is cyclical and we may experience prolonged depressed market conditions for our products.

Our products are sold primarily into markets which historically have been cyclical, such as wood preservation, aluminum and specialty chemicals.

- The principal use of our wood preservation chemicals is in the manufacture of treated lumber, which is used mainly for residential applications, such as wood decking, and also industrial applications, such as the treating of railroad crossties and utility poles. Therefore, a decline in remodeling and construction could reduce demand for wood preservation chemicals for residential applications and a decline in the capital spending practices for railroads and utility companies could reduce demand for wood preservation chemicals for industrial applications.
- The principal consumers of our carbon pitch are primary aluminum smelters. Although the global aluminum industry has experienced growth on a long-term basis, the aluminum industry has experienced a shift in primary aluminum production from the mature geographies, where we have historically enjoyed high market shares, to emerging economies.
- The principal use of our phthalic anhydride product is in the manufacture of plasticizers and flexible vinyl, which are used mainly in the housing and automobile industries. Therefore, a decline in remodeling and construction or global automobile production could reduce the demand for phthalic anhydride.

We are dependent on major customers for a significant portion of our net sales, and the loss of one or more of our major customers could result in a significant reduction in our profitability as a whole or the profitability of a particular product.

Although no one customer accounted for more than seven percent of our net sales for the year ended December 31, 2021, our top ten customers accounted for approximately 38 percent of our net sales. The loss of a significant customer could have a material adverse effect on our business, cash flow and financial condition.

The development of new technologies or changes in our customers' products could reduce the demand for our products.

Our products are used for a variety of applications by our customers. Changes in our customers' products or processes may enable our customers to reduce consumption of the products we produce or make our products unnecessary. Customers may also find alternative materials or processes that no longer require our products.

As a producer of wood preservatives, we may incur additional costs under our warranties or otherwise for claims related to treated-wood products.

We provide limited warranties on certain treated-wood products. These limited warranties cover treated-wood products that are produced by certain of our customers who use wood preservatives supplied by us. The limited warranties generally provide for replacement of properly treated-wood (treated-wood only) or refund of the purchase price for the treated-wood product that prematurely fails due to fungal decay or termite attack. We (or our customers) receive claims under these warranties or other claims relating to alleged failures of treated-wood products. Our profitability could be adversely affected if the amount of warranty claims against us or our customers significantly increase.

Hazards associated with chemical manufacturing may cause suspensions or interruptions of our operations.

Due to the nature of our business, we are exposed to the hazards associated with chemical manufacturing and the related use, storage and transportation of raw materials, products and wastes in our manufacturing facilities and our distribution centers, such as fires, explosions and accidents that could lead to a suspension or interruption of operations. Any disruption could reduce the productivity and profitability of a particular manufacturing facility or of our Company as a whole. Other hazards include the following:

- piping and storage tank leaks and ruptures;
- mechanical failure;
- exposure to hazardous substances; and
- chemical spills and other discharges or releases of toxic or hazardous wastes, substances or gases.

These hazards, among others, may cause personal injury and loss of life, damage to property and contamination of the environment, which could lead to government fines or work stoppage injunctions, cleanup costs and lawsuits by injured persons. While we are unable to predict the outcome of such matters, if determined adversely to us, we may not have adequate insurance to cover related costs or liabilities and, if not, we may not have sufficient cash flow to pay for such costs or liabilities. Such outcomes could harm our customer goodwill and reduce our profitability and could have a material adverse effect on our business, financial condition, cash flow and results from operations.

We are subject to extensive environmental laws and regulations and may incur significant costs as a result of continued compliance with, violations of or liabilities under environmental laws and regulations.

Like other companies involved in environmentally sensitive businesses, our operations and properties are subject to extensive federal, state, local and foreign environmental laws and regulations, including those concerning the following, among other things:

- the treatment, storage and disposal of wastes;
- the investigation and remediation of contaminated soil and groundwater;
- the discharge of effluents into waterways;
- the emission of substances into the air;
- the marketing, sale, use and registration of our chemical products, such as creosote, chromated copper arsenate and MicroPro®;
- the U.S. Environmental Protection Agency's regulation under the Federal Insecticide, Fungicide, and Rodenticide Act which requires the registration and authorization of antimicrobial pesticide products to be used for various applications in the United States;

- the Health Canada Pest Management Regulatory Agency and its Pest Control Products Act which requires the registration and authorization of antimicrobial pesticide products to be used for various applications in Canada;
- the European Union's regulation under the Registration Evaluation Authorization and Restriction of Chemicals, which requires manufacturers or importers of substances manufactured or imported into the European Union in quantities of one ton per year or more to register with a central European Chemicals Agency;
- the European Union's regulation under the Biocidal Products Regulation, which requires a biocidal product to be authorized by the European Chemicals Agency before it can be marketed or used in the European Union;
- the Great Britain Biocidal Products Regulation, which requires a biocidal product to be authorized before it can be marketed or used in Great Britain; and
- other matters relating to environmental protection and various health and safety matters.

We have incurred, and expect to continue to incur, significant costs to comply with environmental laws and regulations as a result of remediation obligations. We could incur significant costs, including cleanup costs, fines, civil and criminal sanctions and claims by third parties for property damage and personal injury, as a result of violations of or liabilities under environmental laws and regulations. We accrue for environmental liabilities when a determination can be made that they are probable and reasonably estimable. Total environmental reserves at December 31, 2021 were $10.7 million, which include provisions primarily for environmental remediation. In addition, we incur significant annual operating expenses related to environmental matters and significant capital expenditures related to environmental control facilities. Capital expenditures related to environmental control facilities in 2022 are expected to total approximately $16 million and are expected to be funded by operations.

Contamination has been identified and is being investigated and remediated at many of our sites by us or other parties. We believe that we will have continuing significant expenditures associated with compliance with environmental laws and regulations and, to the extent not covered by insurance or available recoveries under third-party indemnification arrangements, for present and future remediation efforts at plant sites and third-party waste sites and other liabilities associated with environmental matters. There can be no assurance that these expenditures will not exceed current estimates and will not have a material adverse effect on our business, financial condition, cash flow and results of operations.

Actual costs and liabilities to us may exceed forecasted amounts. Moreover, currently unknown environmental issues, such as the discovery of additional contamination or the imposition of additional sampling or cleanup obligations with respect to our sites or third-party sites, may result in significant additional costs, and potentially significant expenditures could be required in order to comply with future changes to environmental laws and regulations or the interpretation or enforcement thereof. We also are involved in various litigation and proceedings relating to environmental matters and toxic tort claims.

Future climate change regulation could result in increased operating costs and reduced demand for our products.

Increasing societal concerns about climate change have resulted in international efforts to limit greenhouse gas (GHG) emissions. International climate change-related efforts, such as the Paris Agreement, may impact the regulatory framework of countries whose policies and laws directly influence our operations. Currently, in the United States, various federal, state and regional legislative and regulatory measures to address greenhouse gas are in phases of consideration, promulgation or implementation. These include actions which could require reductions in our greenhouse gas emissions or establish a carbon tax.

Heavy energy-using installations in the European Union operate under the EU Emissions Trading System (EU ETS), a cap and trade system on emissions. Under this System, organizations apply to the Member State for an allowance of GHG emissions. These allowances are gradually reduced year by year, to encourage reductions and are also tradable to enable companies that reduce their GHG emissions to sell their excess allowances to companies that are not reaching their emissions objectives. The Green Deal, which was approved by the EU Parliament in 2020, has set a goal of a 55 percent reduction in emissions by 2030 and carbon neutrality by 2050. This will include revising and possibly expanding the EU ETS and setting targets for sectors outside the EU ETS. In Australia, the National Greenhouse and Energy Reporting Scheme requires large volume emitters to report carbon emissions and energy use to the government annually and, based on certain thresholds, purchase certificates to authorize additional emissions. Although Koppers does not currently exceed that threshold, it is foreseeable that the government could lower the threshold in the future.

Any laws or regulations that are adopted to reduce emissions of GHGs could (i) cause an increase to our raw material costs, (ii) increase our costs to operate and maintain our facilities, (iii) increase costs to administer and manage emissions programs, and (iv) have an adverse effect on demand for our products.

The insurance that we maintain may not fully cover all potential exposures.

We maintain property, casualty, general liability, workers' compensation, pollution legal liability and other insurance, but such insurance may not cover all risks associated with the hazards of our business and is subject to limitations, including deductibles and maximum limits. We may incur losses beyond the limits, or outside the coverage, of our insurance policies, including liabilities for environmental compliance and remediation. In addition, from time to time, various types of insurance for companies in our industry have not been available on commercially acceptable terms or, in some cases, have not been available at all. In the future, we may not be able to obtain coverage at current levels, and our premiums may increase significantly on coverage that we maintain.

Adverse weather conditions or natural disasters, including conditions associated with or exacerbated by climate change, may reduce our operating results.

Our quarterly operating results fluctuate due to a variety of factors that are outside our control, including inclement weather conditions, which in the past have caused a decline in our operating results. For example, adverse weather conditions have at times negatively impacted our supply chain as wet conditions impacted logging operations, reducing our ability to procure crossties. In addition, adverse weather conditions have had a negative impact on our customers in our pavement sealer and wood preservation businesses, resulting in a negative impact on our sales of these products. Moreover, demand for many of our products declines during periods of inclement weather. Finally, natural disasters, including wildfires, hurricanes and earthquakes could affect our revenue and operating results. It is impossible to predict the timing, magnitude or location of such natural disasters or their impacts on the local economy and on our operations. If a major wildfire, hurricane or other natural disaster were to disrupt the supply of our raw materials or damage or destroy our facilities or manufacturing equipment, we may experience potential impacts ranging from production and shipping delays to lost profits and revenues. Global climate change may exacerbate the frequency and intensity of adverse weather conditions or natural disasters, such as wildfires, hurricanes, tornadoes, drought, water shortages, rainfall, unseasonably warm winter months, or other weather events, many of which have increased in severity in recent years, in geographic areas where our products are manufactured, distributed, sold and used and where our supply chains are located, and our sales and operating results may be affected to a greater degree than we have previously experienced. Such weather conditions could pose physical risks to our facilities and critical infrastructure in the United States and abroad, disrupt the operation of our supply chain and third-party vendors, and may impact our operating results.

Beazer East and Beazer Limited may not continue to meet their obligations to indemnify us.

Under the terms of the asset purchase agreement between us and Koppers Company, Inc. (now known as Beazer East, Inc.) upon the formation of Koppers Inc. in 1988, subject to certain limitations, Beazer East and Beazer Limited assumed the liability for and indemnified us against, among other things, certain clean-up liabilities for contamination occurring prior to the purchase date at sites acquired from Beazer East and certain third-party claims arising from such contamination (the "Indemnity"). Beazer East and Beazer Limited (which are indirect subsidiaries of Heidelberg Cement AG) may not continue to meet their obligations. Beazer East could in the future choose to challenge its obligations under the Indemnity or our satisfaction of the conditions to indemnification imposed on us thereunder. The government and other third parties may have the right under applicable environmental laws to seek relief directly from us for any and all such costs and liabilities.

In July 2004, we entered into an agreement with Beazer East to amend the December 29, 1988 asset purchase agreement to provide, among other things, for the continued tender of pre-closing environmental liabilities to Beazer East under the Indemnity through July 2019. To the extent that such third-party claims were not tendered by July 2019, Beazer East is not required to pay the costs arising from such claims under the Indemnity and furthermore, Beazer East may now tender certain of such claims to Koppers Inc. However, with respect to any such claims which were made by July 2019, Beazer East will continue to be responsible for such claims under the Indemnity beyond July 2019. The July 2004 amendment did not change the provisions of the Indemnity with respect to indemnification for non-environmental claims, such as product liability claims, which claims may continue to be asserted after July 2019. Qualified expenditures under the Indemnity are not subject to a monetary limit.

The Indemnity provides for the resolution of issues between Koppers Inc. and Beazer East by an arbitrator on an expedited basis upon the request of either party. The arbitrator could be asked, among other things, to make a determination regarding the allocation of environmental responsibilities between Koppers Inc. and Beazer East. Arbitration decisions under the Indemnity are final and binding on the parties.

Without Beazer continuing to assume the financial responsibility under the Indemnity, the obligation to pay the costs and assume the liabilities relating to these matters would have a significant impact on our net income, liquidity and cash flows. Furthermore, we could be required to record a contingent liability on our balance sheet with respect to environmental matters covered by the Indemnity, which could result in our having significant negative net worth. Finally, the Indemnity does not afford us indemnification against environmental costs and liabilities attributable to acts or omissions occurring after the closing of the acquisition of assets from Beazer East under the asset purchase agreement, nor is the Indemnity applicable to liabilities arising in connection with other acquisitions by us after that closing.

Litigation and other proceedings against us could be costly and time-consuming to defend, and due to the nature of our business and products, we may be liable for damages arising out of our acts or omissions, which may have a material adverse effect on us.

We are and have been a defendant in a significant number of lawsuits in which the plaintiffs claim they have suffered a variety of illnesses (including cancer) and/or property damage as a result of exposure to coal tar pitch, pavement sealer, benzene, wood treatment chemicals and other chemicals. In addition, we are regularly subject to legal proceedings and claims that arise in the ordinary course of business, such as workers' compensation claims, governmental investigations, employment disputes, and customer and supplier disputes arising out of the conduct of our business. We also are involved in various litigation and proceedings relating to environmental matters. Any litigation, investigation or regulatory enforcement action that may arise in these or other contexts could result in substantial costs and may divert management's attention and resources away from the day-to-day operation of our business.

We are indemnified for certain product liability exposures under the Indemnity with Beazer East related to products sold prior to the closing of the acquisition of assets from Beazer East. Beazer East and Beazer Limited may not continue to meet their indemnification obligations. In addition, Beazer East could choose to challenge its indemnification obligations or our satisfaction of the conditions to indemnification imposed on us thereunder. If for any reason (including disputed coverage or financial incapability) one or more of such parties fail to perform their obligations and we are held liable for or otherwise required to pay all or part of such liabilities without reimbursement, the imposition of such liabilities on us could have a material adverse effect on our business, financial condition, cash flows and results of operations. Furthermore, we could be required to record a contingent liability on our balance sheet with respect to such matters, which could result in us having significant negative net worth.

Intellectual property rights are important to our business. If our patents are declared invalid 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, particularly in our PC business. Consequently, we may have to rely on judicial enforcement of our patents and other proprietary rights, which is generally a time consuming and expensive process. While a presumption of validity exists with respect to patents issued to us in the United States, 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, or if patents issued to us expire, 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, cash flow and financial condition. The growth of our business also depends on our ability to develop new intellectual property rights, including patents, and the successful implementation of innovation initiatives. There can be no assurance that our efforts to do so will be successful and the failure to do so could negatively impact our results of operations.

We also rely upon unpatented proprietary know-how and continuing technological innovation and other trade secrets to develop and maintain our competitive position, particularly in our PC business. While it is our practice to enter into confidentiality agreements with our employees and third parties to protect our intellectual property, these confidentiality

agreements may be breached or may not provide meaningful protection for our trade secrets or proprietary know-how, and adequate remedies may not be available in the event of an unauthorized 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. The failure of our patents or confidentiality agreements to protect our processes, apparatuses, technology, trade secrets or proprietary know-how could have a material adverse effect on our business, cash flow and financial condition.

We may be required to recognize impairment charges for our long-lived assets.

At December 31, 2021, the net carrying value of long-lived assets (property, plant and equipment, operating lease right-of-use assets, goodwill and other intangible assets) totaled $1,007.8 million. In accordance with generally accepted accounting principles, we periodically assess these assets to determine if they are impaired. Significant negative industry or economic trends, disruptions to our business, unexpected significant changes or planned changes in use of the assets, divestitures and market capitalization declines may result in impairments to goodwill and other long-lived assets. Future impairment charges could significantly affect our results of operations in the periods recognized. Impairment charges would also reduce our shareholders' equity and could affect compliance with the covenants in our debt agreements.

We are subject to risks inherent in foreign operations, including additional legal regulation, and changes in social, political and economic conditions.

We have operations in the United States, Australia, Denmark, the United Kingdom, New Zealand and Canada, among others, and sell our products in many foreign countries. For the year ended December 31, 2021, net sales from products sold by our foreign subsidiaries accounted for approximately 27 percent of our total net sales.

Doing business on a global basis requires us to comply with the laws and regulations of the U.S. government and various international jurisdictions. These regulations place restrictions on our operations, trade practices and partners and investment decisions. In particular, our international operations are subject to U.S. and foreign anti-corruption laws and regulations, such as the Foreign Corrupt Practices Act, and economic sanction programs administered by the U.S. Treasury Department's Office of Foreign Assets Control. Violations of these laws and regulations may result in civil or criminal penalties, including fines.

For example, some of our operations are subject to the United Kingdom's and European Union's General Data Protection Regulation ("GDPR"), which became effective in May 2018. The GDPR imposes a range of compliance obligations for companies that process personal data of United Kingdom and European Union residents and includes financial penalties for non-compliance. We process personal data of our employees who are United Kingdom or European Union residents and will continue dedicating financial resources and management time to GDPR compliance. We bear the cost of compliance with the GDPR and are subject to fines and penalties in the event of a breach of the GDPR, which could have an adverse impact on our business, financial condition or results of operations.

Political and financial instability can lead to economic uncertainty and may adversely impact our business. In addition, as a global business, we are also exposed to market risks relating to fluctuations in interest rates and foreign currency exchange rates. Our international revenues could be reduced by currency fluctuations or devaluations. Changes in currency exchange rates could lower our reported revenues and could require us to reduce our prices to remain competitive in foreign markets, which could also reduce our profitability. We are also subject to potentially increasing transportation and shipping costs associated with international operations. Furthermore, we are also exposed to risks associated with changes in the laws and policies governing foreign investments in countries where we have operations as well as changes in U.S. laws and regulations relating to foreign trade and investment.

Geopolitical events and the risk of related government actions affecting our business and our customers or raw material suppliers may adversely impact our business, results of operations and cash flows.

Geopolitical events, such as systemic political or economic instability, civil unrest, outbreak of war or expansion of hostilities or acts of terrorism, whether occurring in the United States or abroad, could disrupt our operations or the operations of one or more of our raw material suppliers, or could severely damage or destroy one or more of our facilities located in the affected areas, which could in turn adversely affect our ability to obtain raw materials from our suppliers or transport products to our customers. These factors could also cause consumer confidence and spending to decrease or result in increased volatility in the United States and global financial markets and economy. Further, the United States government, other governments or

international organizations could impose additional sanctions that could restrict us from doing business directly or indirectly in or with certain countries or parties, which could include raw material suppliers or customers. For example, our European-based CMC business receives a substantial portion of its coal tar requirements from the Russian Federation and Ukraine. Geopolitical events impacting these countries, or our ability to source raw materials from these countries, could adversely affect those business segments. Any such occurrence could have a material adverse effect on our operating results, financial condition, cash flows and liquidity.

Labor disputes could disrupt our operations and divert the attention of our management and may cause a decline in our production and a reduction in our profitability.

Many of our employees are represented by a number of different labor unions and are covered under numerous labor agreements. Typically, a number of our labor agreements are scheduled to expire each year. We may not be able to reach new agreements without union action or on terms satisfactory to us. Any future labor disputes with any such unions could result in strikes or other labor protests, which could disrupt our operations and divert the attention of our management from operating our business. If we were to experience a strike or work stoppage, it may be difficult for us to find a sufficient number of employees with the necessary skills to replace these employees. Any such labor disputes could cause a decline in our production and a reduction in our profitability.

Our post-retirement obligations are currently underfunded. We may be required to make significant cash payments to our pension and other post-retirement plans, which will reduce the cash available for our business.

As of December 31, 2021, our benefit obligation under our defined benefit pension plans exceeded the fair value of plan assets by $29.6 million. Our pension asset funding to total pension obligation ratio was 87 percent as of December 31, 2021. The underfunding was caused, in large part, by fluctuations in the financial markets that impacted the value of the assets in our defined benefit pension plans and by fluctuations in interest rates which increased the discounted pension liabilities. In addition, our obligations for other post-retirement benefit obligations are unfunded and total $9.8 million at December 31, 2021.

During the years ended December 31, 2021 and December 31, 2020, we contributed $2.8 million and $4.3 million, respectively, to our post-retirement benefit plans. Management expects that any future obligations under our post-retirement benefit plans that are not currently funded will be funded from our future cash flow from operations. If our contributions to our post-retirement benefit plans are insufficient to fund the post-retirement benefit plans adequately to cover our future obligations, the performance of the assets in our pension plans does not meet our expectations or other actuarial assumptions or mandatory funding laws are modified, our contributions to our post-retirement benefit plans could be materially higher than we expect, thus reducing the cash available for our business.

We may incur significant charges in the event we close all or part of a manufacturing plant or facility.

We periodically assess our manufacturing operations in order to manufacture and distribute our products in the most efficient manner. Based on our assessments, we may make capital improvements to modernize certain units, move manufacturing or distribution capabilities from one plant or facility to another plant or facility, discontinue manufacturing or distributing certain products or close all or part of a manufacturing plant or facility, any of which could cause us to incur significant charges. The actual costs to close a manufacturing facility may exceed our original cost estimate and may have a material adverse effect on our financial condition, cash flow from operations and results from operations.

We may be subject to information technology systems failures, network disruptions and breaches of data security, which could harm our relationships with our customers and third-party business partners, subject us to negative publicity and litigation and cause substantial harm to our business.

We depend on integrated information systems to conduct our business. Information technology systems failures could disrupt our operations by impeding our processing of transactions, our ability to protect customer or company information and our financial reporting. System failures include risks associated with upgrading our systems, integrating information technology and other systems in connection with the integration of businesses we acquire, network disruptions and breaches of data security. Our computer systems, including our back-up systems, could be damaged or interrupted by power outages, computer and telecommunications failures, computer viruses, internal or external security breaches, events such as fires, earthquakes, floods, tornadoes and hurricanes, and/or errors by our employees.

We have been subject to cyberattacks in the past, including phishing and malware incidents, and although no such attack has had a material adverse effect on our business, this may not be the case with future attacks. As the prevalence of cyberattacks continues to increase, our information technology systems may be subject to increased security threats and we may incur additional costs to upgrade and maintain our security measures in place to prevent and detect such threats. The security and privacy measures that our vendors and customers implement may not be sufficient to prevent and detect cyberattacks that could have a material adverse effect on our financial condition, results of operations and cash flows. While our vendor agreements typically contain provisions that seek to eliminate or limit our exposure to liability for damages from a cyberattack, we cannot assure that such provisions will withstand legal challenges or cover all or any such damages.

In addition, outside parties may attempt to fraudulently induce employees or customers to disclose access credentials or other sensitive information in order to gain access to our systems and networks. We also may be subject to additional vulnerabilities as we integrate the systems, computers, software and data of acquired businesses and third-party business partners into our networks and separate the systems, computers, software and data of disposed businesses from our networks.

There are no assurances that our security measures, our business continuity and disaster recovery plans or actions or our investments to improve the maturity of our systems, processes and risk management framework to remediate vulnerabilities will be sufficient or completed quickly enough to prevent or detect or limit the impact of critical adverse events such as cyberattacks or security breaches. Potential consequences include, but are not limited to, transactional errors, business disruptions, loss of or damage to intellectual property, loss of customers and business opportunities, unauthorized access to or disclosure of confidential or personal information, regulatory fines, penalties or litigation, reputational damage, reimbursement or other compensatory costs and additional compliance costs. Any of these could have a material adverse effect on our financial condition, results of operations and cash flows.

Health concerns arising from the outbreak of a health epidemic or pandemic, including the currently ongoing COVID-19 pandemic, may have an adverse effect on our business, operating results and financial condition.

The outbreak of COVID-19 is a global situation that is continually evolving. The COVID-19 pandemic is having a significant impact on global markets as a result of supply chain and production disruptions, workforce restrictions, reduced spending and other factors. Our operating results are subject to fluctuations based on general economic conditions, and the extent to which the COVID-19 pandemic ultimately may impact our business will depend on future developments, such as the efficacy of spread prevention measures and new vaccines, the duration of the outbreak and business closures or business disruptions for us, our suppliers and our customers, all of which are highly uncertain and cannot be predicted with confidence. These same uncertainties exist with respect to any other health epidemic or pandemic that may arise in the future.

Any resulting financial distress of our customers due to deterioration in economic conditions could result in reduced sales and decreased collectability of accounts receivable, which would negatively impact our results of operations, cash flows and liquidity. The COVID-19 pandemic or any other health epidemic or pandemic also could have a material impact on our ability to obtain the raw materials and parts that we need in order to manufacture our products as our suppliers face disruptions in their businesses or closures. If our suppliers fail to meet our manufacturing needs, it could delay our production and shipments to customers and negatively affect our operations, cash flows and liquidity.

From time to time, U.S. and international governmental responses to the COVID-19 pandemic have included "shelter in place", "stay at home" and similar types of orders. These orders exempt certain individuals and businesses needed to maintain continuity of operations of critical infrastructure sectors as determined by the federal government. Although most of our operations have been considered essential and exempt, and therefore have been able to continue to operate without interruption, our operations in certain jurisdictions have temporarily curtailed from time to time. If any of the applicable exemptions are amended or revoked in the future or if additional restrictions that impact us are implemented in response to COVID-19 or any other health epidemic or pandemic, it could adversely impact our business, operating results and financial condition. Furthermore, to the extent that any of these exemptions do not extend to our key suppliers and customers, this also would adversely impact us in turn.

In addition, our operations or the operations of our customers or suppliers could be disrupted if any of our or their employees were suspected of having contracted COVID-19 or any similar significant virus since such an occurrence could require us or our business partners to quarantine some number of employees or otherwise cause operations to be idled.

The ultimate impact of the current COVID-19 pandemic on general economic conditions, our business and our ability to generate cash flow and profits cannot be quantified given the uncertainties existing with respect to the extent and timing of the potential future spread or mitigation of COVID-19 and the imposition or relaxation of protective measures. To the extent the current COVID-19 pandemic or any other future health epidemic or pandemic adversely affects our business and financial results, it also may have the effect of increasing many of the other risks described herein.

Risks Related to Our Common Stock

Prior to February 2022, we had not declared a dividend since November 2014.

On February 23, 2022, the board of directors declared a quarterly dividend of five cents per common share, payable on April 4, 2022 to shareholders of record as of March 18, 2022. However, we are not required to pay dividends, and our shareholders are not guaranteed, and do not have contractual rights, to receive dividends. Our board of directors may decide at any time, in its discretion, to change or revoke our dividend policy. Any determination to pay dividends in the future will be at the discretion of our board of directors and will depend upon results of operations, financial condition, contractual restrictions, restrictions imposed by applicable law and other factors our board of directors deems relevant.

The ability of Koppers Inc. and its subsidiaries to pay dividends or make other payments or distributions to us will depend on our operating results and may be restricted by, among other things, the covenants in Koppers Inc.'s Credit Facility. Our ability to pay dividends is also limited by the indenture governing the 2025 Notes as well as Pennsylvania law and may in the future be limited by the covenants of any future outstanding indebtedness we or our subsidiaries incur. If a dividend is paid in violation of Pennsylvania law, each director approving the dividend could be liable to the corporation if the director did not act with such care as a person of ordinary prudence would use under similar circumstances. Directors are entitled to rely in good faith on information provided by employees of the corporation and experts retained by the corporation. Directors who are held liable would be entitled to receive a contribution to any such liability from any shareholders who received an unlawful dividend knowing it to be unlawful. Furthermore, we are a holding company with no operations, and unless we receive dividends, distributions, advances, transfers of funds or other payments from our subsidiaries, we will be unable to pay dividends on our common stock.

Provisions of our charter documents may inhibit a takeover, which could negatively affect our stock price.

Provisions of our charter documents and the Business Corporation Law of Pennsylvania, the state in which we are incorporated, could discourage potential acquisition proposals or make it more difficult for a third party to acquire control of our company, even if doing so might be beneficial to our shareholders. Our Amended and Restated Articles of Incorporation (our "Articles of Incorporation") and our Second Amended and Restated Bylaws (our "Bylaws") provide for various procedural and other requirements that could make it more difficult for shareholders to effect certain corporate actions. For example, our Articles of Incorporation authorize our board of directors to determine the rights, preferences, privileges and restrictions of unissued series of preferred stock without any vote or action by our shareholders. Our board of directors can therefore authorize and issue shares of preferred stock with voting or conversion rights that could adversely affect the voting or other rights of holders of our common stock. The following additional provisions could make it more difficult for shareholders to effect certain corporate actions:

- Our shareholders will be able to remove directors only for cause by the affirmative vote of the holders of a majority of the outstanding shares of our capital stock entitled to vote in the election of directors. Vacancies on our board of directors may be filled only by our board of directors.
- Under Pennsylvania law, cumulative voting rights are available to the holders of our common stock if our Articles of Incorporation have not negated cumulative voting. Our Articles of Incorporation provide that our shareholders do not have the right to cumulative votes in the election of directors.
- Our Articles of Incorporation do not permit shareholder action without a meeting by consent except for the unanimous consent of all holders of our common stock. The Articles of Incorporation also provide that special meetings of our shareholders may be called only by the board of directors or the chairman of the board of directors.
- Our Bylaws provide that shareholders seeking to nominate candidates for election as directors or to bring business before an annual meeting of shareholders must provide timely notice of their proposal in writing to the corporate secretary.

These provisions may discourage acquisition proposals and may make it more difficult or expensive for a third party to acquire a majority of our outstanding voting stock or may delay, prevent or deter a merger, acquisition, tender offer or proxy contest, which may negatively affect our stock price.

General Risk Factors

Conditions in the global economy and global capital markets may adversely affect our results of operations, financial condition and cash flows.

In recent history, the U.S. and global economy and capital markets have experienced significant uncertainties and volatility. Our business and operating results can be significantly affected by global economic issues. Our customers may experience deterioration of their business during the adverse business cycles. They may experience cash flow shortages and may have difficulty obtaining financing. As a result, our customers may delay or cancel plans to purchase our products and may not be able to fulfill their payment obligations to us in a timely fashion. Our suppliers may be experiencing similar conditions which could impact their ability to supply us with raw materials and otherwise fulfill their obligations to us. If global economic conditions deteriorate significantly, there could be a material adverse effect to our results of operations, financial condition and cash flows.

In addition, we rely on our Credit Facility with a consortium of banks to provide us with liquidity to meet our working capital needs. Our ability to fund our liquidity needs and working capital requirements could be impacted in the event that disruptions in the credit markets result in the banks being unable to lend to us under our Credit Facility.

Global economic issues could prevent us from accurately forecasting demand for our products, which could have a material adverse effect on our results of operations and our financial condition.

Adverse global economic issues, market instability and volatile commodity price fluctuations make it increasingly difficult for us, our customers and our suppliers to accurately forecast future product demands and sales prices, which could cause us to procure raw materials in excess of end-product demand. This could cause a material increase to our inventory carrying costs and, in the event of falling market prices for our end products, result in significant charges to write-down inventory to market prices.

We may not be able to compete successfully in any or all of the industry segments in which we operate.

The markets in which we operate are highly competitive, and this competition could harm our business, results of operations, cash flow and financial condition. If we are unable to respond successfully to changing competitive conditions, the demand for our products could be affected. We believe that the most significant competitive factor for our products is selling price.

Our products may be rendered obsolete or less attractive by changes in regulatory, legislative or industry requirements.

Changes in regulatory, legislative or industry requirements may render certain of our products obsolete or less attractive. Our ability to anticipate changes in these requirements, especially changes in regulatory standards, will be a significant factor in our ability to remain competitive. We may not be able to comply in the future with new regulatory, legislative and/or industrial standards that may be necessary for us to remain competitive and certain of our products may, as a result, become obsolete or less attractive to our customers.

Changes in applicable tax regulations and resolutions of tax disputes could negatively affect our financial results.

We are subject to income tax laws and regulations in the United States and various foreign jurisdictions. Significant judgment is required in evaluating and estimating our provision and accruals for these taxes. Our income tax liabilities are dependent upon the location of earnings among these different jurisdictions. Our income tax provision and income tax liabilities could be adversely affected by the jurisdictional mix of earnings, changes in valuation of deferred tax assets and liabilities and changes in tax laws and regulations. In the ordinary course of our business, we are also subject to continuous examinations of our income tax returns by tax authorities. Although we believe our tax estimates are reasonable, the final results of any tax examination or related litigation could be materially different from our related historical income tax provisions and accruals. Adverse developments in an audit, examination or litigation related to previously filed tax returns, or in the relevant jurisdiction's tax laws, regulations, administrative practices, principles and interpretations could have a material effect on our results of operations and cash flows in the period or periods for which that development occurs, as well as for subsequent periods.

Our strategy to selectively pursue complementary acquisitions may present unforeseen obstacles, risks or costs.

Our business strategy includes the potential acquisition of businesses and entering into joint ventures and other business combinations that we expect would complement and expand our existing products and the markets where we sell our products. We may not be able to successfully identify suitable acquisition or joint venture opportunities or complete any particular acquisition, combination, joint venture or other transaction on acceptable terms. We cannot predict the timing and success of our efforts to acquire any particular business. Also, efforts to acquire other businesses or the implementation of other elements of this business strategy may divert managerial resources away from our business operations. In addition, our ability to engage in strategic acquisitions may depend on our ability to raise substantial capital and we may not be able to raise the funds necessary to implement our acquisition strategy on terms satisfactory to us, if at all. Our failure to identify suitable acquisition or joint venture opportunities may restrict our ability to grow our business. In addition, we may not be able to successfully integrate businesses that we acquire in the future or have recently acquired, which could lead to increased operating costs, a failure to realize anticipated operating synergies, or both.

We depend on our senior management team and other key employees and the loss of these employees could adversely affect our business.

Our success is dependent on the management, experience and leadership skills of our senior management team and key employees. The loss of any of these individuals or an inability to attract, retain and maintain additional personnel with similar industry experience could prevent us from implementing our business strategy. We cannot assure you that we will be able to retain our existing senior management and key personnel or to attract additional qualified personnel when needed. Senior management or key personnel may retire from time to time, and our employment agreements with these individuals may expire from time to time.

Our stock price may be extremely volatile.

There has been significant volatility in the market price and trading volume of equity securities, which is unrelated to the financial performance of the companies issuing the securities. These types of broad market fluctuations may negatively affect the market price of our common stock.

Some specific factors that may have a significant effect on our common stock market price include the following:

- actual or anticipated fluctuations in our operating results or future prospects;
- the public's reaction to our press releases, our other public announcements and our filings with the Securities and Exchange Commission;
- strategic actions by us or our competitors, such as acquisitions or restructurings;
- new laws or regulations or new interpretations of existing laws or regulations applicable to our business;
- changes in accounting standards, policies, guidance, interpretations or principles;
- adverse conditions in the financial markets or general economic conditions, including those resulting from war, pandemic, incidents of terrorism and responses to such events;
- sales of common stock by us, members of our management team or a significant shareholder;
- changes in stock market analyst recommendations or earnings estimates regarding our common stock or other comparable companies; and
- changes in our current dividend policy or the elimination, reduction or suspension of our dividend.

We cannot predict the extent to which investor interest in our company will continue to support an active trading market for our common stock on the New York Stock Exchange (the "NYSE") or otherwise or how liquid that market will continue to be. If there does not continue to be an active trading market for our common stock, you may have difficulty selling any of our common stock that you buy.

If securities analysts or industry analysts publish negative research or reports, or do not publish reports about our business, our share price and trading volume could decline.

The trading market for our common stock is influenced by the research and reports that industry or securities analysts publish about us, our business and our industry. If one or more analysts adversely change their recommendation regarding our shares or our competitors' stock, our share price would likely decline. If one or more analysts cease coverage of us or fail to regularly publish reports on us, we could lose visibility in the financial markets, which in turn could cause our share price or trading volume to decline.

Future sales, or the perception of future sales, of a substantial amount of our common stock may depress the price of the shares of our common stock.

Future sales, or the perception or the availability for sale in the public market, of substantial amounts of our common stock could adversely affect the prevailing market price of our common stock and could impair our ability to raise capital through future sales of equity securities at a time and price that we deem appropriate.

We may issue shares of our common stock, or other securities, from time to time as consideration for future acquisitions and investments. We may also issue shares of our common stock, or other securities, in connection with employee stock compensation programs, employee stock purchase programs and board of directors' compensation. In addition, we may issue shares of our common stock or other securities in public or private offerings as part of our efforts to raise additional capital. In the event any such acquisition, investment, issuance under stock compensation programs or offering is significant, the number of shares of our common stock or the number or aggregate principal amount, as the case may be, of other securities that we may issue may in turn be significant. We may also grant registration rights covering those shares or other securities in connection with any such acquisitions and investments. Any additional capital raised through the sale of our equity securities may dilute your percentage ownership in us.

Our ability to raise capital in the future may be limited.

Our ability to raise capital in the future may be limited. Our business and operations may consume resources faster than we anticipate. In the future, we may need to raise additional funds through the issuance of new equity securities, debt or a combination of both. Additional financing may not be available on favorable terms, or at all. If adequate funds are not available on acceptable terms, we may be unable to fund our capital requirements. If we issue new debt securities, the debt holders would have rights senior to common shareholders to make claims on our assets, and the terms of any debt could restrict our operations, including our ability to pay dividends on our common stock. If we issue additional equity securities, existing shareholders will experience dilution, and the new equity securities could have rights senior to those of our common stock. Because our decision to issue securities in any future offering will depend on market conditions and other factors beyond our control, we cannot predict or estimate the amount, timing or nature of our future offerings. Thus, our shareholders bear the risk of our future securities offerings diluting their interest and reducing the market price of our common stock.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

The following chart sets forth information regarding our production facilities. Generally, our production and port facilities are suitable and adequate for the purposes for which they are intended and overall have sufficient capacity to conduct business in the upcoming year.

Primary Product Line	*Location*	*Description of Property Interest*
Railroad and Utility Products and Services		
Railroad crossties	Ashcroft, British Columbia, Canada	Owned
Utility poles	Bunbury, Western Australia, Australia	Owned/Leased
Railroad crosstie materials recovery	Domino, Texas	Leased
Utility poles	Eutawville, South Carolina	Owned
Railroad crossties	Florence, South Carolina	Owned
Railroad crossties	Galesburg, Illinois	Leased
Utility poles	Grafton, New South Wales, Australia	Owned
Railroad crossties	Guthrie, Kentucky	Owned
Rail joint bars	Huntington, West Virginia	Leased
Railroad crosstie materials recovery	L'Anse, Michigan	Leased
Utility poles	Leland, North Carolina	Owned
Utility poles	Longford, Tasmania, Australia	Owned
Railroad structures	Madison, Wisconsin	Owned
Railroad crossties	Muncy, Pennsylvania	Owned
Utility poles	Newsoms, Virginia	Owned
Utility poles	North, South Carolina	Owned
Railroad crossties	North Little Rock, Arkansas	Owned
Railroad crossties	Roanoke, Virginia	Owned
Railroad crossties and utility poles	Somerville, Texas	Owned
Utility poles	Takura, Queensland, Australia	Leased
Utility poles	Vance, Alabama	Leased
Utility poles	Vidalia, Georgia	Owned
Performance Chemicals		
Wood preservation chemicals	Auckland, New Zealand	Owned
Wood preservation chemicals	Darlington, United Kingdom	Owned
Wood preservation chemicals	Geelong, Victoria, Australia	Owned
Intermediate copper products	Hubbell, Michigan	Leased
Wood preservation chemicals	Millington, Tennessee	Owned
Wood preservation chemicals	Mt. Gambier, South Australia, Australia	Owned
Wood preservation chemicals	Rock Hill, South Carolina	Owned
Carbon Materials and Chemicals		
Carbon products	Mayfield, New South Wales, Australia	Owned
Carbon products	Nyborg, Denmark	Owned/Leased
Carbon products, phthalic anhydride	Stickney, Illinois	Owned

Our corporate offices are located in leased office space in Pittsburgh, Pennsylvania. The lease term expires on December 31, 2028. We also own office space in Griffin, Georgia.

ITEM 3. LEGAL PROCEEDINGS

We are involved in litigation and other proceedings relating to environmental laws and regulations, toxic tort, product liability and other matters. An adverse outcome for certain of these cases could result in a material adverse effect on our business, cash flows and results of operations. The information related to legal matters set forth in Note 19 to the Consolidated Financial Statements of Koppers Holdings Inc. is hereby incorporated by reference.

Koppers Holdings, Inc. (the "Company") is cooperating with an investigation by the staff of the Division of Enforcement (the "Division") of the U.S. Securities and Exchange Commission ("Commission") into the Company's public non-GAAP financial metrics disclosures regarding the Company's debt reduction target and net leverage ratio for Fiscal Year 2019 and the related management of its accounts payable (the "Inquiry"). The Company and several of its current and former officers and employees, including Leroy M. Ball, the Company's President and Chief Executive Officer and a director of the Company, received subpoenas for information and testimony (the "Subpoenas"), pursuant to a non-public formal order of investigation for the Inquiry dated February 14, 2021.

The Company maintains that the actions of the Company and its officers and employees were appropriate and did not violate the federal securities laws. The Company and its officers and employees are cooperating with the Division in connection with the Inquiry, and the Company's counsel has engaged in discussions with the Division regarding a potential resolution of this matter. Further, the Company has made productions of information to the Division and made witnesses available for testimony pursuant to the Subpoenas. The Company will continue to comply with the requests of the Division in connection with the Inquiry. As of the date of this Annual Report on Form 10-K, neither the Company nor, to the Company's knowledge, any of its current and former officers and employees have received from the Division or otherwise a "Wells Notice" setting forth any preliminary determination by the Division to recommend any enforcement action to the Commission.

The Company cannot predict the ultimate outcome of the Inquiry and any related legal and administrative proceedings which could include a variety of outcomes including the institution of administrative or civil injunctive proceedings involving the Company and/or current or former employees and/or officers, including the Company's CEO, Mr. Ball, the imposition of fines and other penalties, remedies and/or sanctions, modifications to business practices and compliance programs, and/or referral to other governmental agencies for other actions. It is not possible to accurately predict at this time when matters relating to the Inquiry will be completed, what if any actions may be taken by the Commission or by other governmental agencies, or the effect that such actions may have on our business, prospects, operating results and financial condition, which could be material.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

INFORMATION ABOUT OUR EXECUTIVE OFFICERS

The following table sets forth the names, ages and positions of our and Koppers Inc.'s executive officers as of February 23, 2022. Our executive officers hold their positions until the annual meeting of the board of directors or until their respective successors are elected and qualified.

Name	*Age*	*Position*
Stephanie L. Apostolou	41	General Counsel and Secretary, Koppers Holdings Inc. and Koppers Inc., and Director of Koppers Inc.
Leroy M. Ball	53	President, Chief Executive Officer, and Director of Koppers Holdings Inc. and Koppers Inc.
Joseph P. Dowd	61	Global Vice President, Zero Harm, Koppers Inc.
Leslie S. Hyde	61	Senior Vice President and Chief Sustainability Officer, Koppers Inc.
Bradley A. Pearce	55	Chief Accounting Officer, Koppers Holdings Inc. and Koppers Inc.
Jimmi Sue Smith	49	Chief Financial Officer and Treasurer, Koppers Holdings Inc. and Koppers Inc., and Director of Koppers Inc.
James A. Sullivan	58	Executive Vice President and Chief Operating Officer, Koppers Holdings Inc. and Koppers Inc.

Ms. Apostolou has served as General Counsel and Secretary of Koppers Holdings Inc. and Koppers Inc. since March 2020. From January 2019 to February 2020, Ms. Apostolou served as Deputy General Counsel and Assistant Secretary of Koppers Holdings Inc. and Koppers Inc. From January 2018 to December 2018, Ms. Apostolou served as Assistant General Counsel and Assistant Secretary of Koppers Holdings Inc. and Koppers Inc. From December 2014 to December 2017, Ms. Apostolou served as Assistant General Counsel of Koppers Inc. Ms. Apostolou has served as a Director of Koppers Inc. since May 2020.

Mr. Ball has served as President and Chief Executive Officer of Koppers Holdings Inc. and Koppers Inc. since January 2015. Mr. Ball has served as a Director of Koppers Holdings Inc. since February 2015 and as a Director of Koppers Inc. since May 2013.

Mr. Dowd has served as Global Vice President, Zero Harm, Koppers Inc. since January 2020. From January 2016 to December 2019, Mr. Dowd served as Global Vice President, Safety, Health, Environmental, and Process Excellence, Koppers Inc.

Ms. Hyde has served as Senior Vice President and Chief Sustainability Officer, Koppers Inc. since January 2020. From November 2017 to December 2019, Ms. Hyde served as Vice President, Corporate Strategy and Risk Management, Koppers Inc. From January 2016 to October 2017, Ms. Hyde served as Vice President, Risk Management and Deputy General Counsel of Koppers Inc.

Mr. Pearce has served as Chief Accounting Officer, Koppers Holdings Inc. and Koppers Inc. since May 2019. From April 2008 to April 2019, Mr. Pearce served as Director, Corporate Control and Taxes, Koppers Inc.

Ms. Smith has served as Chief Financial Officer and Treasurer of Koppers Holdings Inc. and Koppers Inc. since January 2022. From February 2020 to December 2021, Ms. Smith served as Vice President, Finance and Treasurer of Koppers Holdings Inc. and Koppers Inc. Ms. Smith has served as a Director of Koppers Inc. since January 2022. Prior to joining Koppers, from November 2018 to August 2019, Ms. Smith served as Senior Vice President and Chief Financial Officer of EQT Corporation ("EQT"), a publicly traded natural gas production company. Ms. Smith served as Chief Accounting Officer of EQT from September 2016 to October 2018. Ms. Smith also served as Chief Accounting Officer of the general partners of EQM Midstream Partners, LP and EQGP Holdings, LP from September 2016 to October 2018, and served as Chief Accounting Officer of the general partner of RM Partners, LP, from November 2017 to July 2018.

Mr. Sullivan has served as Executive Vice President and Chief Operating Officer of Koppers Holdings Inc. and Koppers Inc. since January 2020. From May 2018 to December 2019, Mr. Sullivan served as Senior Vice President, Railroad Products and Services and Global Carbon Materials and Chemicals, Koppers Inc. Prior to that, Mr. Sullivan served as Senior Vice President, Global Carbon Materials and Chemicals of Koppers Inc. from April 2014 to May 2018.

PART II

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

Our shares of common stock are listed and traded on the NYSE under the symbol "KOP".

The number of registered holders of Koppers common stock at January 31, 2022 was 142.

Dividend Policy

In 2006, our board of directors adopted a dividend policy that provided for quarterly dividends, payable at the discretion of our board of directors. Dividends will be considered if cash generated by our business is in excess of our expected cash needs. Our expected cash needs include operating expenses and working capital requirements, interest and principal payments on our indebtedness, capital expenditures, incremental costs associated with being a public company, acquisitions, taxes and certain other costs. On an annual basis we expect to pay dividends, if declared, with cash flow from operations, but, due to seasonal or other temporary fluctuations in cash flow, we may from time to time use temporary short-term borrowings to pay quarterly dividends.

We are not required to pay dividends, and our shareholders will not be guaranteed, or have contractual or other rights, to receive dividends. Accordingly, our board of directors may decide, in its discretion, at any time, to otherwise modify or repeal the dividend policy. On February 23, 2022, the board of directors declared a quarterly dividend of five cents per common share, payable on April 4, 2022 to shareholders of record as of March 18, 2022. Prior to February 2022, we had not declared a dividend since November 2014. Any future determination to declare and pay dividends will be made at the discretion of our board of directors, after taking into account our financial results, capital requirements and other factors it may deem relevant.

Because we are a holding company, substantially all the assets shown on our consolidated balance sheet are held by our subsidiaries. Accordingly, our earnings and cash flow and our ability to pay dividends are dependent upon the earnings and cash flows of our subsidiaries and the distribution or other payment of such earnings to us in the form of dividends. Our ability to pay dividends is restricted by limitations on the ability of our only direct subsidiary, Koppers Inc., to pay dividends, as a result of limitations imposed by the Credit Facility, the indenture governing the 2025 Notes and by Pennsylvania law. See "Management's Discussion and Analysis of Financial Condition and Results of Operations – Liquidity and Capital Resources – Restrictions on Dividends to Koppers Holdings."

Issuer Purchases of Equity Securities

The following table sets forth information regarding Koppers Holdings' repurchases of shares of its common stock during the three months ended December 31, 2021:

Period	*Total Number of Common Shares Purchased* [1]	*Average Price paid per Common Share*	*Total Number of Common Shares Purchased as Part of Publicly Announced Plans or Programs*	*Approximate Dollar Value of Common Shares that May Yet be Purchased Under the Plans or Programs (Dollars in Millions)*
October 1 – October 31	0	$ 0.00	0	$ 0.0
November 1 – November 30	234,508	$33.82	234,508	$90.6
December 1 – December 31	0	$ 0.00	0	$ 0.0
Total	234,508	$33.82	234,508	$90.6

(1) On August 6, 2021, we announced that the board of directors approved a $100 million share repurchase program. The repurchase program has no expiration date and replaces our previous share repurchase program of $75 million, which was approved in November 2011 and had approximately $24.8 million remaining prior to approval of the new program.

ITEM 6. SELECTED FINANCIAL DATA

Not applicable.

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

Overview

See description of the segments in "Item 1 – Business".

Non-GAAP Financial Measures

We utilize certain financial measures that are not in accordance with U.S. generally accepted accounting principles (U.S. GAAP) to analyze and manage the performance of our business. We believe that adjusted EBITDA provides information useful to investors in understanding the underlying operational performance of the company, our business and performance trends, and facilitates comparisons between periods and with other corporations in similar industries. The exclusion of certain items permits evaluation and a comparison of results for business operations, and it is on this basis that our management internally assesses our performance. In addition, our board of directors and executive management team use adjusted EBITDA as a performance measure under the company's annual incentive plans.

Although we believe that these non-GAAP financial measures enhance investors' understanding of its business and performance, these non-GAAP financial measures should not be considered an alternative to GAAP basis financial measures and should be read in conjunction with the relevant GAAP financial measures. Other companies in a similar industry may define or calculate these measures differently than we do, limiting their usefulness as comparative measures. Because of these limitations, these non-GAAP financial measures should not be considered in isolation or as substitutes for performance measures calculated in accordance with GAAP.

Adjusted EBITDA is a non-GAAP financial measure defined as net income from continuing operations before interest, income taxes, depreciation and amortization along with other adjustments. These adjustments are items that we believe are not representative of underlying business performance. Adjusted items typically include certain expenses associated with impairment, restructuring and plant closure costs, significant gains and losses on asset disposals or business combinations, LIFO and mark-to-market commodity hedging and other unusual items. Adjusted EBITDA is the primary measure of profitability we use to evaluate our businesses. Refer to "Note 9 – Segment Information" for reconciliations from net income to adjusted EBITDA on a consolidated basis.

Outlook

Trend Overview

Our businesses and results of operations are affected by various competitive and other factors including (i) the impact of global economic conditions on demand for our products, including the impact of imported products from competitors in certain regions where we operate; (ii) raw material pricing and availability, in particular the cost and availability of hardwood lumber for railroad crossties and softwood lumber for utility poles, scrap copper prices, and the cost and amount of coal tar available in global markets, which is negatively affected by reductions in blast furnace steel production; (iii) volatility in oil prices, which impacts the cost of coal tar and certain other raw materials, as well as selling prices and margins for certain of our products including carbon black feedstock, phthalic anhydride, and naphthalene; (iv) competitive conditions in global carbon pitch markets; and (v) changes in foreign exchange rates.

Effects of COVID-19 on our operations

Our operating results may fluctuate due to a variety of factors that are outside of our control, including from the effects of the current pandemic. The COVID-19 outbreak began to have a global effect in the first quarter of 2020 and continues to have a significant impact on global markets driven by supply chain and production disruptions, workforce restrictions, trends in

spending patterns and other factors. During the COVID-19 pandemic, substantially all of our global businesses have continued to operate without significant disruption. In the United States, Koppers was designated as an essential business, as determined by the Cybersecurity and Infrastructure Security Agency (CISA) within the Department of Homeland Security. As a result, we have been able to meet the demands of our customers in the various markets we serve by continuing to operate to transport critical goods, provide power and connectivity to homes and businesses, and keep our infrastructure running reliably.

Our consolidated financial statements and discussion and analysis of financial condition and results of operations reflect estimates and assumptions made by us as of December 31, 2021, including those related to COVID-19. Events and changes in circumstances arising after December 31, 2021, including those resulting from the impacts of COVID-19, will be reflected in our estimates for future periods.

Railroad and Utility Products and Services

Historically, North American demand for crossties had been in the range of 22 million to 25 million crossties annually. However, the crosstie replacement market has been significantly lower in recent years. According to the Railway Tie Association ("RTA"), the estimated total crosstie installations in 2021 were approximately 18.8 million, of which 14.4 million were for Class I railroads. Throughout the pandemic, some sawmills were operating at 50 percent or less of their production capacity. Sawmills provide raw materials to several industries beyond the wood crosstie market and as demand and pricing for pallet and flooring lumber increased significantly throughout 2021, overall crosstie production output has been lower than forecasted. Crosstie prices increased significantly as a result of limited supply and railroad customers are deferring their purchases. Given continuing economic uncertainties, including those related to COVID-19, the RTA is forecasting a modest increase of 2.2 percent, or 19.2 million crossties, in 2022, primarily from the commercial market while Class I volumes are expected to remain at relatively similar demand levels.

According to the American Association of Railroads ("AAR"), rail traffic in 2021 was substantially higher than in 2020 for most categories. Coal carloads were considerably higher than the prior year due to sharply higher natural gas prices, while carloads of motor vehicles suffered as microchip shortages forced automakers to cut output. For intermodal, a record-setting first-half of 2021 gave way to a lower second half as supply chain challenges persisted. Even so, 2021 ranked as the second-best U.S. intermodal year, behind only 2018. In 2021, total U.S. carload traffic increased 6.6 percent from the prior year, while intermodal units strengthened by 4.9 percent. The combined U.S. traffic for carloads and intermodal units was higher by 5.7 percent than the prior year.

With respect to our utility products business, the installed base for wood distribution poles in the U.S. is approximately 150 million and nearly half are 40 years old. Industry demand has historically been in the range of two million to three million poles annually. On an overall basis, we believe that the rate at which utilities purchase utility poles will grow as they continue replacement programs within their service territories. As a whole, the key factors that drive growth in the utility pole market include growing global energy consumption as well as expansion of the global telecommunication industry. Now more than ever, utilities need to maintain their infrastructure to avoid interruptions in service as portions of the population continue to work remotely due to the COVID-19 pandemic. As long as there are not any extended supply chain disruptions, we anticipate that 2022 demand for pole replacements will be relatively stable to slightly higher, as the overall industry is trending toward expanded and upgraded transmission networks. In addition, there is a developing trend in the industry for utilities to maintain some additional inventory to prepare for potential damaging storms.

With respect to raw materials, we expect the availability of pole supply to be affected as lumber for other uses continue to be in high demand and, consequently, lead to increased costs for pole material. Also, transportation costs, which include fuel costs, are expected to experience some upward pressure and affect the price of pole material delivered to the pole peelers from the forest.

Longer term, we are evaluating opportunities to potentially expand our market presence in the United States as well as certain overseas markets. We believe there remains an overall need for sustained investment in infrastructure and capacity expansion and with our vertical integration capabilities in wood treatment and strong customer relationships, we will ultimately benefit from increased demand.

For the overall segment, a positive development involves the Infrastructure Investment and Jobs Act, which was signed into law on November 15, 2021, and will usher in more than a trillion dollars in new spending across eight years to improve the nation's

roads, bridges, rail, Internet, water systems and more. As a global leader in water- and oil-borne preservatives serving many end markets with our wood-treatment technologies, we are well-positioned to benefit from the new legislation. Our products are used in multiple infrastructure applications, including utility poles, railroad ties, highway and construction concrete, steel, aluminum, and wood for construction projects.

As part of optimizing our business, we continue to evaluate a number of opportunities to improve efficiencies in our operational processes, people and facilities. With our 14 North American RUPS treating facilities operating at less than full utilization, our goal is to either capture more volume through the existing facilities or consolidate our operating footprint. In January 2022, we began curtailing operations at our Sweetwater, Tennessee plant. During 2021, we exited the Texas Electric Cooperatives' Jasper, Texas facility and relocated the production of utility products to our Somerville, Texas plant. Separately, in the third quarter of 2020, we permanently closed our Denver, Colorado wood treatment facility. Concurrent with the decision to close the Denver facility, we announced our plan to modernize and upgrade parts of our treating network, specifically at our facility in North Little Rock, Arkansas, which would be primarily funded through proceeds from the sale of non-core assets, including the Denver facility. In October 2021, we sold our closed Denver, Colorado crosstie treating facility and we recorded a gain on sale of $23.4 million. In addition, as part of the sales agreement, we may receive additional contingent post-closing payments secured by a guaranty from the buyer after applicable redevelopment milestones are reached. At this time, we are unable to estimate how much, if any, of these additional funds will ultimately be paid to us.

Performance Chemicals

As most of the products sold by PC are copper-based products, changes in the price and availability of copper can have a significant impact on product pricing and margins. We attempt to moderate the variability in copper pricing over time by entering into hedging transactions for the majority of our copper needs, which primarily range from six months up to 36 months. These hedges typically match expected customer purchases and from time to time, we enter into forward transactions based upon long-term forecasted needs of copper. Copper prices reached peak levels in mid-2021, boosted by pent-up demand as growth accelerated when pandemic lockdowns were eased and the market faced tight supplies. In 2022, projections for copper prices are mixed and are contingent on supply and demand dynamics as well as the impact of higher interest rates on economic growth.

Product demand for our PC business has historically been closely associated with consumer spending on home repair and remodeling projects in North America, and therefore, trends in existing home sales serve as a leading indicator. Overall, the market for existing homes is showing strong demand. According to the National Association of Realtors® ("NAR"), total existing-home sales increased 8.5 percent in 2021 compared with the prior year, which is the highest annual level since 2006. The NAR reported, however, total existing home sales in December decreased 4.6 percent from November, and were down 7.1 percent from a year ago. While December sales were softer, the slowdown was more a sign of supply constraints than an indication of a weakened demand for housing.

According to the Leading Indicator of Remodeling Activity ("LIRA") reported by the Joint Center for Housing Studies of Harvard University, there was 9.4 percent year-over-year growth in home renovation and repair expenditures in the fourth quarter of 2021. The LIRA projects annual growth in renovation and repair spending of 17.3 percent by the third quarter of 2022. While annual improvement and repair spending is projected to reach $430 billion by the second half of 2022, several headwinds, such as rising costs of labor and construction materials, difficulty retaining contractors, and rising interest rates, may temper growth expectations.

The Conference Board Consumer Confidence Index® increased to 115.2 in December, then declined slightly to 113.8 in January 2022. Consumer confidence moderated somewhat in January, following gains in the final three months of 2021, suggesting the economy finished the year on solid footing; however, the expectations related to near-term growth prospects reflect some moderation during the first quarter of 2022.

Although the market data and projections for home improvements are continually changing, we anticipate ongoing demand for residential treated wood and in looking at residential renovation markets, businesses are indicating a continued positive outlook. While a global pandemic, an inflationary environment and supply chain delays constitute potential risks, consumers are indicating their continued plans to purchase homes, automobiles, and major appliances over the next six months.

Carbon Materials and Chemicals

The primary products produced by CMC are creosote, which is a registered pesticide in the United States and used primarily in the pressure treatment of railroad crossties, and carbon pitch, which is sold primarily to the aluminum industry for the production of carbon anodes used in the smelting of aluminum. We have realigned capacity in our CMC plants in North America and Europe over the past several years to levels required to meet creosote demand in North America for the treatment of railroad crossties. The CMC business currently supplies our North American RUPS business with its creosote requirements.

The availability of coal tar, the primary raw material for our CMC business, is linked to levels of metallurgical coke production. As the global steel industry, excluding Asia, has reduced the production of steel using metallurgical coke, the volumes of coal tar have been reduced. Also, coal tar raw material supply remains constrained globally due to reductions in blast furnace steel capacity.

For the external markets served by our CMC business, we anticipate a relative stability in manufacturing overall as well as in the steel, aluminum and carbon black industries. According to IHS Markit Automotive Group (IHS), global light vehicle production in 2021 is projected to be at 75.5 million units, a 1.2 percent improvement from the prior year period. The industry demand levels will likely continue to be constrained as the semiconductor supply chain remains challenged. For 2022, IHS forecasts a rebound in light vehicle production of 9.0 percent, to 82.3 million units.

Results of Operations – Comparison of Years Ended December 31, 2021 and December 31, 2020

Consolidated Results

Net sales for the years ended December 31, 2021 and 2020 are summarized by segment in the following table:

	Year Ended December 31,		
	2021	*2020*	*Net Change*
(Dollars in millions)			
Railroad and Utility Products and Services	**$ 729.9**	$ 759.1	-4%
Performance Chemicals	**503.3**	526.3	-4%
Carbon Materials and Chemicals	**445.4**	383.7	16%
	$1,678.6	$1,669.1	1%

RUPS net sales for the year ended December 31, 2021 decreased by $29.2 million, or four percent, compared to the prior year. The sales decrease was primarily related to volume decreases in our utility pole business as of result of transitioning production from the Texas Electric Cooperatives' Jasper, Texas plant to our Somerville, Texas plant along with volume decreases in the commercial crosstie market and volume decreases of untreated crossties for our Class I customers. Increased demand for lumber driven by strong construction markets resulted in decreased purchasing activity of untreated crossties by our customers during the current period. These decreases were offset, in part, by pricing increases in various markets within the segment and volume increases in our maintenance-of-way and crosstie disposal businesses. Foreign currency changes compared to the prior year period had a favorable impact on sales in the current year period of $3.5 million, mainly from our Australian utility pole business.

PC net sales for the year ended December 31, 2021 decreased by $23.0 million, or four percent, compared to the prior year. The sales decrease was primarily due to volume decreases for preservatives in North America as high lumber prices and a return to normal consumer spending habits have tempered customer demand compared to extremely high levels of pandemic-fueled demand in 2020. The decreases were offset, in part, by higher demand for preservatives in our international markets resulting from continued pent-up demand after the lifting of earlier restrictions associated with the pandemic. PC also benefited from pricing increases in the current year period for our copper-based preservatives. Foreign currency changes compared to the prior year period from our international markets had a favorable impact on sales in the current year period of $7.2 million.

CMC net sales for the year ended December 31, 2021 increased by $61.7 million, or 16 percent, compared to the prior year due mainly to higher sales prices for carbon pitch, distillates and chemicals in the current year. Foreign currency translation also had a favorable impact on sales in the current year of $11.3 million, mainly from our Australian and European markets. These increases were offset, in part, by lower sales volumes of carbon pitch and phthalic anhydride in the current year.

Cost of sales as a percentage of net sales was 80 percent for the year ended December 31, 2021, compared to 78 percent in the prior year. Gross margin was unfavorably impacted in the current year period primarily by an increase in raw material costs along with total LIFO expense of $28.2 million compared to the prior year period which was favorably impacted by a LIFO benefit of $13.7 million.

Depreciation and amortization charges for the year ended December 31, 2021 were $3.6 million higher when compared to the prior year period due mainly to an increase in asset retirement obligations at our European CMC operations as well as an increase in capitalized assets in our North American RUPS operations.

Gain on sale of assets for the year ended December 31, 2021 of $31.2 million and is primarily related to the sale of our former RUPS crosstie treating plant located in Denver, Colorado as well as two previously decommissioned CMC plants as described in Note 4 – "Plant Closures and Divestitures".

Impairment and restructuring charges for the year ended December 31, 2021 were $4.3 million lower when compared to the prior year period. We recorded charges for asset retirement obligations, fixed asset write-offs and severance in the prior year period related to the announced closure of our Denver, Colorado facility. The current year period included residual demolition and other plant closure period costs related to the closure.

Selling, general and administrative expenses for the year ended December 31, 2021 were $5.8 million higher when compared to the prior year period due mainly to an increase of $2.6 million in employee benefit related expenses, $1.9 million for consulting and professional services and $0.7 million in travel and facility related charges.

Interest expense for the year ended December 31, 2021 was $8.4 million lower when compared to the prior year primarily as a result of our lower average debt level and lower interest rates due to the significant decrease in underlying LIBOR rates. In the third quarter of 2020, we used the net proceeds of the KJCC sale to reduce our borrowings under the Credit Facility.

Income tax expense as a percentage of income before income taxes for the years ended December 31, 2021 and 2020 was 29.9 percent and 19.1 percent, respectively. In 2020, we recorded a benefit of $13.3 million due to legislative changes to the interest expense limitation that were a result of the Coronavirus Aid, Relief, and Economic Security Act (the "CARES Act").

Discontinued operations for the year ended December 31, 2021 resulted in income of $0.1 million compared to a loss of $3.9 million in the prior year period. In the prior year period, the loss was driven by a reduction in net sales and lower end market demand attributable to the economic effects of COVID-19 on our KJCC operations, which was sold in the third quarter of 2020.

Gain on sale of discontinued operations for the year ended December 31, 2020 is related to the sale of our KJCC business in China in September 2020. See Note 5 – "Discontinued Operations" for further detail.

Segment Results

Segment adjusted EBITDA and adjusted EBITDA margin for the years ended December 31, 2021 and 2020 are summarized in the following table:

	Year Ended December 31,		
	2021	*2020*	*% Change*
(amounts in millions)			
Adjusted EBITDA:			
Railroad and Utility Products and Services	**$ 45.4**	$ 65.3	-30%
Performance Chemicals	**101.8**	100.7	1%
Carbon Materials and Chemicals	**76.3**	45.0	70%
Total Adjusted EBITDA	**$223.5**	$211.0	6%
Adjusted EBITDA margin as a percentage of GAAP sales:			
Railroad and Utility Products and Services	**6.2%**	8.6%	-2.4%
Performance Chemicals	**20.2%**	19.1%	1.1%
Carbon Materials and Chemicals	**17.1%**	11.7%	5.4%
Total Adjusted EBITDA margin	**13.3%**	12.6%	0.7%

RUPS adjusted EBITDA decreased by $19.9 million compared to the prior year period. Adjusted EBITDA as a percentage of net sales decreased to 6.2 percent from 8.6 percent in the prior year period and was unfavorably impacted in our domestic utility pole business by the costs, loss of throughput and inefficiencies associated with pole treatment preservative conversions at our Vidalia, Georgia and Vance, Alabama plants, a shortage of pole treatment preservative in the fourth quarter of the current year period and higher fuel costs and labor inefficiencies driven by the pandemic. In addition, unfavorability in our railroad crosstie business was driven by lower absorption of fixed costs due to approximately two million less crossties procured than the prior year period as a result of decreased purchasing activity of untreated crossties by our Class I customers driven by the impact higher lumber prices had on the hardwood market. Finally, pandemic-driven costs and inefficiencies in our maintenance-of-way businesses contributed to a reduction in adjusted EBITDA over the prior year period.

PC adjusted EBITDA increased by $1.1 million compared to the prior year. Adjusted EBITDA as a percentage of net sales increased to 20.2 percent from 19.1 percent in the prior year. The current year was favorably impacted by lower realized raw material costs associated with the company's copper hedging program along with higher demand for preservatives in our international markets. PC benefited from pricing increases in the current year period for our copper-based preservatives in addition to the contribution from our copper-hedging program which mitigated increases in our raw material costs. These favorable drivers were offset, in part, by volume decreases for preservatives in North America.

CMC adjusted EBITDA increased by $31.3 million compared to the prior year. Adjusted EBITDA as a percentage of net sales increased to 17.1 percent from 11.7 percent in the prior year. The current year was favorably impacted by higher sales prices for carbon pitch, distillates and chemicals, a recovery of insurance proceeds. These increases were offset, in part, by an increase in raw material costs and lower sales volumes of carbon pitch and phthalic anhydride in the current year.

Results of Operations – Comparison of Years Ended December 31, 2020 and December 31, 2019

Consolidated Results

Net sales for the years ended December 31, 2020 and 2019 are summarized by segment in the following table:

	Year Ended December 31,		
	2020	*2019*	*Net Change*
(Dollars in millions)			
Railroad and Utility Products and Services	$ 759.1	$ 733.5	3%
Performance Chemicals	526.3	448.3	17%
Carbon Materials and Chemicals	383.7	455.2	-16%
	$1,669.1	$1,637.0	2%

RUPS net sales for the year ended December 31, 2020 increased by $25.6 million, or three percent, compared to the prior year. The sales increase was primarily due to volume increases in the Class I crosstie market as well as the domestic and Australian utility pole markets, along with price increases in the domestic utility pole market in 2020. Sales of crossties increased by $16.8 million in 2020. These increases were offset, in part, by volume decreases in the commercial crosstie market and our maintenance-of-way businesses in 2020.

PC net sales for the year ended December 31, 2020 increased by $78.0 million, or 17 percent, compared to the prior year. The sales increase was due primarily to higher demand for copper-based preservatives in North America due to new customer additions and higher organic volumes driven by increased home repair and remodeling activities during the pandemic, along with an increase in sales volumes in our international markets resulting from pent-up demand due to several months of restrictions associated with the pandemic. These increases were partially offset by an unfavorable impact from foreign currency translation in 2020 of $5.1 million.

CMC net sales for the year ended December 31, 2020 decreased by $71.5 million, or 16 percent, compared to the prior year due mainly to lower sales prices for carbon pitch, carbon black feedstock, phthalic anhydride and naphthalene as a result of depressed oil prices in 2020. Other contributing factors included lower sales volumes of carbon pitch and naphthalene as a result of the economic conditions. These decreases were offset, in part, by volume increases of carbon black feedstock.

Cost of sales as a percentage of net sales was 78 percent for the year ended December 31, 2020, compared to 80 percent in the prior year. Gross margin at PC was favorably impacted by higher sales volumes, a favorable sales mix and better absorption on higher production volumes. Improved margins at RUPS were due to a favorable sales mix in our Class I crosstie market and higher margins in our domestic utility pole and maintenance-of-way markets. Lower gross margins for CMC in 2020 were a result of lower sales prices for carbon pitch, carbon black feedstock, phthalic anhydride and naphthalene.

Depreciation and amortization charges for the year ended December 31, 2020 were consistent with the prior year.

Impairment and restructuring charges were $0.5 million higher when compared to the prior year period. Charges in 2020 consisted of asset retirement obligations, fixed asset write-offs, severance, accelerated depreciation, demolition and other plant closure period costs related to the closure of our Denver, Colorado facility. The prior year period primarily consisted of asset retirement obligation charges, accelerated depreciation and inventory and fixed asset write-offs related to the closure of our Follansbee, West Virginia facility.

Selling, general and administrative expenses for the year ended December 31, 2020 were $5.2 million lower when compared to the prior year period due mainly to a decrease in consulting and professional service expenses, travel and facility related costs and employee related benefits.

Interest expense for the year ended December 31, 2020 was $12.8 million lower when compared to the prior year period primarily due to our lower average debt level and lower interest rates due to the significant decrease in LIBOR rates. In the third quarter of 2020, we used the net proceeds of the KJCC sale to reduce our borrowings under the Credit Facility.

Income taxes for the year ended December 31, 2020 were $21.0 million higher when compared to the prior year period. Both periods included benefits that significantly influenced income taxes.

For the year ended December 31, 2020, our income tax provision benefited by a total of $13.3 million due to legislative changes to the interest expense limitation that were a result of the CARES Act.

For the year ended December 31, 2019, our tax provision was favorably impacted due to a legal entity restructuring and tax audit closures. We completed a Dutch legal entity restructuring project, which resulted in an intra-entity transfer of certain intangible assets and intellectual property. This transaction resulted in the recognition of a deferred tax asset of $14.9 million. We also recorded a favorable tax benefit of $4.3 million for the year ended December 31, 2019 for the reversal of various unrecognized tax benefits due to the closure of a U.S. tax audit.

Income tax expense as a percentage of income before income taxes for the years ended December 31, 2020 and 2019 was 19.1 percent and zero percent, respectively. The increase was partially due to income before income taxes being $46.4 million higher when compared to the prior year period and the benefits from a Dutch legal entity restructuring recorded for the year ended December 31, 2019.

Discontinued operations for the year ended December 31, 2020 resulted in a loss of $3.9 million compared to income of $3.7 million in the prior year period due primarily to a year-over-year reduction in net sales of $104.2 million attributable to lower end market demand on our KJCC operations and only nine months of operations in 2020 due to the sale of the company.

Segment Results

Segment adjusted EBITDA and adjusted EBITDA margin for the years ended December 31, 2020 and 2019 are summarized in the following table:

	Year Ended December 31,		
	2020	*2019*	*% Change*
(amounts in millions)			
Adjusted EBITDA:			
Railroad and Utility Products and Services	$ 65.3	$ 60.2	8%
Performance Chemicals	100.7	68.6	47%
Carbon Materials and Chemicals	45.0	73.5	-39%
Corporate unallocated	0.0	(1.2)	-100%
Total Adjusted EBITDA	$211.0	$201.1	5%
Adjusted EBITDA margin as a percentage of GAAP sales:			
Railroad and Utility Products and Services	8.6%	8.2%	0.4%
Performance Chemicals	19.1%	15.3%	3.8%
Carbon Materials and Chemicals	11.7%	16.1%	-4.4%
Total Adjusted EBITDA margin	12.6%	12.3%	0.4%

RUPS adjusted EBITDA increased by $5.1 million compared to the prior year period. Adjusted EBITDA as a percentage of net sales increased to 8.6 percent from 8.2 percent in the prior year period. Adjusted EBITDA as a percentage of net sales for the year ended December 31, 2020 was favorably impacted by higher margins in our domestic utility pole and maintenance-of-way markets, a favorable sales mix in our Class I crosstie market and lower selling, general and administrative costs in 2020.

PC adjusted EBITDA increased by $32.1 million compared to the prior year period. Adjusted EBITDA as a percentage of net sales increased to 19.1 percent in 2020 compared to 15.3 percent in the prior year period. Adjusted EBITDA as a percentage of net sales for the year ended December 31, 2020 was favorably impacted by higher sales volumes in North America driven by increased home repair and remodeling activities during the pandemic, a favorable sales mix, better absorption on higher production volumes during the pandemic and lower selling, general and administrative costs.

CMC adjusted EBITDA for the year ended December 31, 2020 decreased by $28.5 million, or 39 percent, compared to 2019. Adjusted EBITDA as a percentage of net sales for 2020 decreased to 11.7 percent from 16.1 percent in 2019. Adjusted EBITDA for the year ended December 31, 2020 was negatively affected primarily by lower sales prices for carbon black feedstock, phthalic anhydride and naphthalene as a result of depressed oil prices in 2020. Other contributing factors included lower sales prices and volumes of carbon pitch as a result of economic conditions. These decreases were offset, in part, by volume increases of carbon black feedstock.

Adjusted EBITDA is reconciled to net income, the most directly comparable financial measure determined and reported in accordance with U.S. GAAP.

	Year Ended December 31,		
	2021	2020	2019
(amounts in millions)			
Net income	$ 84.9	$121.0	$ 67.4
Interest expense	40.5	48.9	61.7
Depreciation and amortization	57.7	54.1	51.4
Depreciation in impairment and restructuring charges	0.7	2.0	3.4
Income taxes	34.5	21.0	0.0
Discontinued operations	0.2	(31.9)	(3.7)
Sub-total	218.5	215.1	180.2
Adjustments to arrive at adjusted EBITDA:			
Impairment, restructuring and plant closure costs[1]	4.2	15.7	20.4
(Gain) on sale of assets	(31.2)	0.0	0.0
LIFO expense (benefit)	28.2	(13.7)	4.5
Mark-to-market commodity hedging losses (gains)	3.8	(9.2)	(4.0)
Pension settlement	0.0	0.1	0.0
Discretionary incentive[2]	0.0	3.0	0.0
Total adjustments	5.0	(4.1)	20.9
Adjusted EBITDA	$223.5	$211.0	$201.1

(1) Includes costs associated with restructuring, sales and closures of certain RUPS and CMC facilities as described in Note 4 – "Plant Closures and Divestitures".
(2) Represents a one-time employee incentive associated with the sale of KJCC as described in Note 5 – "Discontinued Operations".

Cash Flow

Net cash provided by operating activities was $103.0 million for the year ended December 31, 2021 as compared to net cash provided by operating activities of $127.1 million for the year ended December 31, 2020. The net decrease of $24.1 million was due primarily to higher working capital usage of $28.2 million primarily as a result of higher inventory values from increased raw material prices and inventory levels as well as increased receivables due to higher fourth quarter 2021 sales as compared to the prior year. Operating profit, excluding gain on sale of assets and changes in derivative contracts, was slightly down year-over-year but was offset by a change in other liabilities as a result of lower asset retirement costs.

Net cash provided by operating activities was $127.1 million for the year ended December 31, 2020 as compared to net cash provided by operating activities of $115.3 million for the year ended December 31, 2019. The net increase of $11.8 million was due primarily to an increase in operating profit partly offset by higher working capital usage of $30.6 million compared to the prior year as a result of timing of payments between periods and an increase in asset retirement costs.

Net cash used in investing activities was $89.5 million for the year ended December 31, 2021 as compared to net cash provided by investing activities of $5.6 million for the year ended December 31, 2020. The net change in cash used in investing activities of $95.1 million is primarily due to an increase in capital expenditures of $55.2 million in the current year period for increased investment in growth projects, primarily the expansion of the RUPS facility in North Little Rock, Arkansas, and net cash of $74.7 million provided by the sale of KJCC in the prior year, partially offset by cash received related to sales of the Denver, Colorado plant and two previously decommissioned CMC plants as well as insurance proceeds in the current year.

Net cash provided by investing activities was $5.6 million for the year ended December 31, 2020 as compared to net cash used in investing activities of $33.8 million for the year ended December 31, 2019. The net change in cash provided by investing activities of $39.4 million is primarily due to net cash of $74.7 million provided by the sale of KJCC partly offset by an increase in capital expenditures of $32.6 million used mainly for production expansion and modernization across our businesses.

Net cash used in financing activities was $4.0 million for the year ended December 31, 2021 as compared to net cash used in financing activities of $128.7 million for the year ended December 31, 2020. The cash used in financing activities in the year ended December 31, 2021 reflected repurchases of common stock of $11.5 million partially offset by net borrowings of debt of $5.1 million. The cash used in financing activities in the prior year period primarily reflected net repayments of debt of $128.0 million.

Net cash used in financing activities was $128.7 million for the year ended December 31, 2020 as compared to net cash used in financing activities of $88.7 million for the year ended December 31, 2019. The cash used in financing activities in both periods primarily related to repayment of debt.

Liquidity and Capital Resources

We have a $600.0 million senior secured revolving credit facility and a $100.0 million secured term loan facility (collectively, the "Credit Facility") as described in Note 15 of the Notes to Consolidated Financial Statements.

Restrictions on Dividends to Koppers Holdings

Koppers Holdings depends on the dividends from the earnings of Koppers Inc. and its subsidiaries to generate the funds necessary to meet its financial obligations, including the payment of any declared dividend of Koppers Holdings. The Credit Facility prohibits Koppers Inc. from making dividend payments to Koppers Holdings unless (1) such dividend payments are permitted by the indenture governing Koppers Inc.'s $500 million Senior Notes due 2025 (the "2025 Notes"), (2) no event of default or potential default has occurred or is continuing under our Credit Facility, and (3) we are in pro forma compliance with our fixed charge coverage ratio covenant after giving effect to such dividend. The indenture governing the 2025 Notes restricts Koppers Inc.'s ability to finance our payment of dividends if (1) a default has occurred or would result from such financing, (2) Koppers Inc., or a restricted subsidiary of Koppers Inc. which is not a guarantor under the indenture, is not able to incur additional indebtedness (as defined in the indenture), and (3) the sum of all restricted payments (as defined in the indenture) have exceeded the permitted amount (which we refer to as the "basket") at such point in time.

The basket is governed by a formula based on the sum of a beginning amount, plus or minus a percentage of Koppers Inc.'s consolidated net income (as defined in the indenture), plus the net proceeds of Koppers Inc.'s qualified stock issuance or conversions of debt to qualified stock, plus the net proceeds from the sale of or a reduction in an investment (as defined in the indenture) or the value of the assets of an unrestricted subsidiary which is designated a restricted subsidiary. At December 31, 2021, the basket totaled $271.0 million. Notwithstanding such restrictions, the indenture governing the 2025 Notes permits an additional aggregate amount of $0.30 per share each fiscal quarter to finance dividends on the capital stock of Koppers Holdings, whether or not there is any basket availability, provided that at the time of such payment, no default in the indenture has occurred or would result from financing the dividends. In addition, certain required coverage ratios in Koppers Inc.'s Credit Facility may restrict the ability of Koppers Inc. to pay dividends.

Liquidity

The following table summarizes our estimated liquidity as of December 31, 2021 *(dollars in millions)*:

Cash and cash equivalents[1]	$ 43.2
Amount available under credit facility	305.2
Total estimated liquidity	$348.4

(1) Cash includes approximately $43.1 million held by foreign subsidiaries and excludes approximately $2.3 million of restricted cash.

Our liquidity was $344.0 million at December 31, 2020.

Our need for cash in the next twelve months relates primarily to contractual obligations which include debt service, pension plan funding, purchase commitments and operating leases, as well as capital expenditures, working capital, and potential return of capital to shareholders. We may also use cash to pursue other potential strategic acquisitions or voluntary pension plan contributions. Capital expenditures in 2022, excluding acquisitions, if any, are expected to total approximately $95 million and are expected to be funded by cash from operations. We anticipate that our estimated liquidity will continue to be adequate to fund our cash requirements for the next twelve months.

From time to time, we manage our working capital to increase our flexibility to pay down debt. Debt will fluctuate throughout any operating period based upon the timing of receipts from customers and payments to vendors. As of December 31, 2021 and December 31, 2020, approximately 75 percent and 70 percent of accounts payable was current, approximately 20 percent was 1-30 days past due and approximately five percent and ten percent was past due greater than 30 days, respectively.

Schedule of Certain Contractual Obligations

The following table details our projected payments for our significant contractual obligations as of December 31, 2021. The table is based upon available information and certain assumptions we believe to be reasonable.

	Payments Due by Period				
	2022	*2023-2024*	*2025-2026*	*Later years*	*Total*
(in millions)					
Long-term debt [1]	$ 2.0	$287.1	$500.0	$ 0.0	$ 789.1
Interest on debt	37.2	70.2	15.0	0.0	122.4
Operating leases	28.0	39.5	24.8	25.0	117.3
Federal tax payments [2]	0.8	2.3	0.0	0.0	3.1
Purchase commitments [3]	245.8	308.4	172.2	26.0	752.4
Total contractual cash obligations [4]	$313.8	$707.5	$712.0	$51.0	$1,784.3

(1) Consists primarily of the maturity of the 2025 Notes and the Credit Facility that will mature in 2025.
(2) Relates to the transition tax in accordance with the Tax Act.
(3) Consists primarily of raw materials purchase contracts. These are typically not fixed price arrangements; the prices are based on the prevailing market prices. As a result, we generally expect to be able to hedge the purchases with sales at those future prices.
(4) Not included in contractual obligations are commercial commitments associated with standby letters of credit totaling $7.8 million, which expire in 2022.

Pension and other employee benefit plan funding obligations (for defined benefit plans) are not included in the contractual obligation table. We expect defined benefit plan contributions to total approximately $2.0 million in 2022. Estimated funding obligations are determined by asset performance, workforce and retiree demographics, tax and employment laws and other actuarial assumptions which may change the annual funding obligations in addition to decisions to fund in excess of statutorily required amounts. The funded status of our defined benefit plans is disclosed in Note 14 in our consolidated financial statements.

As of December 31, 2021, there was $2.3 million of tax liabilities related to unrecognized tax benefits. Because of the high degree of uncertainty regarding the timing of future cash outflows associated with these liabilities, we are unable to estimate the years in which settlement will occur with the respective taxing authorities. See Note 10 in our consolidated financial statements for further information.

Debt Covenants at December 31, 2021

The covenants that affect availability of the Credit Facility and which may restrict the ability of Koppers Inc. to pay dividends include the following financial ratios:

- The fixed charge coverage ratio, calculated as of the end of each fiscal quarter for the four fiscal quarters then ended, is not permitted to be less than 1.10. The fixed charge coverage ratio at December 31, 2021 was 1.50.
- The total secured leverage ratio, calculated as of the end of each fiscal quarter for the four fiscal quarters then ended, is not permitted to exceed 2.75. The total secured leverage ratio at December 31, 2021 was 1.23.
- The total leverage ratio, calculated as of the end of each fiscal quarter for the four fiscal quarters then ended, is not permitted to exceed 4.75. The total leverage ratio at December 31, 2021 was 3.34.

We are currently in compliance with all covenants governing the Credit Facility. Our continued ability to meet those financial ratios can be affected by events beyond our control, however, excluding possible acquisitions, we currently expect that our net cash flows from operating activities and funds available from our Credit Facility will be sufficient to provide for our working capital needs and capital spending requirements over the next twelve months.

Net leverage ratio is a non-GAAP financial measure defined as net debt (total debt less cash) divided by adjusted EBITDA for the latest twelve months and is a financial measure used by us to assess our borrowing capacity and ability to service our debt. Net debt will fluctuate before, after and throughout the related period based upon the timing of receipts from customers and payments to vendors. Refer to "Segment Results" of "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations" for reconciliation to net income from adjusted EBITDA. The following table summarizes net leverage ratio as calculated by us for the years indicated below:

	Year Ended December 31,	
	2021	*2020*
(amounts in millions)		
Total debt	**$783.5**	$775.9
Less: Cash	**45.5**	38.5
Net debt	**$738.0**	$737.4
Adjusted EBITDA	**$223.5**	$211.0
Net leverage ratio	**3.3**	3.5

Our long-term net leverage ratio target continues to be 2.0 to 3.0 times.

Other Matters

Foreign Operations and Foreign Currency Transactions

We are subject to foreign currency translation fluctuations due to our foreign operations. For the years ended December 31, 2021, 2020 and 2019, exchange rate fluctuations resulted in a decrease to comprehensive income of $16.4 million, an increase of $22.8 million and a decrease of $1.3 million, respectively. Foreign currency transaction gains and losses result from transactions denominated in a currency which is different from the currency used by the entity to prepare its financial statements. Foreign currency transaction (losses) gains were $(0.7) million, $2.5 million and $1.0 million for the years ended December 31, 2021, 2020 and 2019, respectively.

Recently Issued Accounting Guidance

Information regarding recently issued accounting guidance is contained in Note 3 "New Accounting Pronouncements" of the Notes to Consolidated Financial Statements.

Critical Accounting Policies

The preparation of financial statements in conformity with generally accepted accounting principles in the United States requires management to use judgment in making estimates and assumptions that affect the reported amounts of revenues and expenses, assets and liabilities, and the disclosure of contingent liabilities. The following accounting policies are based on, among other things, judgments and assumptions made by management that include inherent risks and uncertainties. Our management's estimates are based on the relevant information available at the end of each period. With the exception of the revenue recognition policy, each of the following policies contain critical accounting estimates.

Revenue Recognition. We recognize revenue upon the completion of performance obligations under contracts with our customers and when control of a good or service is transferred to the customer. Substantially all of our contracts with our customers are ship and invoice arrangements where revenue is recognized when we complete our performance obligations and transfer control to the customer. We also have certain arrangements where revenue is recognized under the contract where control of the goods or services had been transferred to the customer prior to shipment. Revenue recognition generally occurs at the point of shipment; however in certain circumstances as shipping terms dictate, we transfer control and revenue is recognized at the point of destination. To determine the transaction price at the time when revenue is recognized, we evaluate whether the price is subject to adjustments, such as for warranties, discounts or volume rebates, to determine the net consideration to which we expect to be entitled. Shipping and handling costs are included as a component of cost of sales.

For certain contracts, we also recognize revenue related to the procurement of certain untreated railroad crossties upon delivery to our plant and acceptance by the customer. Service revenue, consisting primarily of wood treating services, is recognized at the time the service is provided and the performance obligation is satisfied.

Goodwill and Intangible Assets. Goodwill is not amortized but is assessed for impairment annually, using a quantitative goodwill impairment test, or more frequently if a change in circumstances or the occurrence of events indicate the carrying value may not be recoverable. In making this assessment, management may first consider qualitative factors to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying amount. Examples of qualitative factors include macroeconomic conditions, industry and market considerations, cost factors, overall financial performance, entity-specific events, events affecting reporting units, and sustained changes in our stock price.

If results of the qualitative assessment indicate a more likely than not determination or if a qualitative assessment is not performed, a quantitative test is performed utilizing a combination of an income approach, using a discounted cash flow methodology, and a market approach, by comparing the estimated fair value of each reporting unit with its book value. We perform an assessment of goodwill at the reporting unit level, utilizing a combination of an income approach, using a discounted cash flow methodology, and a market approach, by comparing the estimated fair value calculations of each reporting unit with its net book value. The discounted cash flow calculations are dependent on several subjective factors including the timing of future forecasted cash flows including future forecasted revenue growth rates, and the discount rate.

We have three reporting units for purposes of goodwill evaluation. These units consist of our PC operating segment, our Railroad Products and Services reporting unit and our Utility Products reporting unit. Railroad Products and Services and Utility Products are one level below our RUPS operating segment. The Railroad Products and Services reporting unit primarily serves the rail industry in North America and the Utility Products reporting unit serves the utility industries in the United States and Australia.

Goodwill remaining on our consolidated balance sheet at December 31, 2021 was $296.0 million. During the fourth quarter of 2021, we performed an impairment test for goodwill for each of our reporting units using the quantitative approach. Based on our evaluation performed, we determined the fair value of each of the reporting units exceeded its respective carrying amount, and therefore, we determined that goodwill was not impaired at any of our reporting units as of December 31, 2021. We define "*headroom*" as the percentage difference between the fair value of a reporting unit and its carrying value. For the 2021 impairment test, the headroom for the reporting units ranged between ten percent to 65 percent. Our Railroad Products and Services reporting unit and our Utility Products reporting unit have headroom at the low-end of that range and could experience impairment in the future if we do not achieve our profitability projections, there is a change in key assumptions underlying the valuation or if we experience a substantial decrease in our stock price.

Identifiable intangible assets are valued at fair value upon the acquisition of a business. Identifiable intangible assets are amortized on a straight-line basis over their estimated useful lives. We have identifiable intangible assets of $131.5 million as of December 31, 2021. We annually evaluate the remaining useful life of the intangible asset being amortized to determine whether events or circumstances warrant a revision to the remaining period of amortization. If the estimate of an intangible asset's remaining useful life is changed, the remaining carrying amount of the intangible asset will be amortized prospectively over that revised remaining useful life. Identifiable intangible assets are also subject to testing for recoverability whenever events or changes indicate that its carrying value may not be recoverable.

Changes in economic and operating conditions impacting these assumptions could result in goodwill and intangible asset impairments in future periods. Additionally, disruptions to our business such as prolonged recessionary periods or unexpected significant declines in operating results of the relevant reporting units could result in charges for goodwill and other asset impairments in future periods.

Deferred Tax Assets. As of December 31, 2021, our balance sheet included $44.2 million of deferred tax assets, which is net of a $44.5 million valuation allowance. We also had $62.6 million of deferred tax liabilities resulting in net deferred tax liabilities of $18.4 million, which are predominantly related to our domestic entities. In assessing the realizability of deferred tax assets, management considers whether it is more likely than not that some portion or all of the deferred tax assets will be realized. In evaluating the need for a valuation allowance, management considers various factors, including the expected level of future taxable income, available tax planning strategies and reversals of existing taxable temporary differences.

The realization of a majority of our deferred tax assets is not subject to any expiration and is dependent upon the reversal of the underlying temporary differences. To the extent future taxable income projections are not achieved, we could be required to record a valuation allowance against certain deferred tax assets. Item 8. Financial Statements and Supplementary Data – Note 10 includes information on deferred tax activity during the past two years.

Asset Retirement Obligations. We measure asset retirement obligations based upon the applicable accounting guidance, using certain assumptions including estimates regarding the recovery of residues in storage tanks. In the event that operational or regulatory issues vary from our estimates, we could incur additional significant charges to income and increases in cash expenditures related to the disposal of those residues. Certain conditional asset retirement obligations related to facilities have not been recorded in the consolidated financial statements due to uncertainties surrounding the ultimate settlement date and estimate of fair value related to a legal obligation to perform an asset retirement activity. At the date a reasonable estimate of the ultimate settlement can be made, we will record an asset retirement obligation and such amounts may be material to the consolidated financial statements in the period in which they are recorded. Item 8. Financial Statements and Supplementary Data – Note 2 includes information on expense recognized during the past two years.

Pension and Postretirement Benefits. Accounting for pension and other postretirement benefit obligations involves numerous assumptions, the most significant of which relate to the following:

- the discount rate for measuring the present value of future plan obligations; and
- the expected long-term return on plan assets.

We develop our demographics and utilize the work of third-party actuaries to assist in the measurement of these obligations. We have selected different discount rates for our pension plans and our other post-retirement benefit plans due to the different projected benefit payment patterns. In determining the assumed discount rates at December 31, 2021, we used our third-party actuary's discount rate model. This model calculates an equivalent single discount rate for the projected benefit plan cash flows using a hypothetical bond portfolio to match expected cash flows under our benefit plans. The bonds used are rated AA or higher by a recognized rating agency and only non-callable bonds are included with the exception of those with a "make-whole call" feature. The actuary limited the selection to those bonds with a minimum of 100,000 outstanding issues. Outlier bonds whose yields exceeded two standard deviations from the yield curve derived from similar quality bonds were excluded.

Of the assumptions used to measure the year-end obligations and estimated annual net periodic benefit cost, the discount rate has the most significant effect on the periodic benefit cost reported for the plans. Decreasing the discount rates by 0.25 percent for our pension plans and 0.25 percent for our other postretirement benefit plans would increase pension obligations and other postretirement benefit plan obligations by $5.0 million and would increase defined benefit pension expense and other postretirement benefit plan expense by $0.3 million.

The asset rate of return assumption considers the asset mix of the plans (currently targeted at approximately 30 to 40 percent equity securities and 60 to 70 percent fixed income securities for the funded pension plans), past performance and other factors, including expected re-allocations of asset mix occurring within a reasonable period of time. Our asset rate of return assumption is 3.91 percent for 2021 defined benefit pension expense. Decreasing the asset rate of return assumption by 0.25 percent would increase our defined benefit pension expense by $0.5 million.

Item 8. Financial Statements and Supplementary Data – Note 14 includes detailed information about the assumptions used to calculate the components of our annual defined benefit pension and other postretirement plan expense, as well as the obligations and accumulated other comprehensive loss reported on the year-end balance sheets.

Environmental Liabilities. As discussed under Environmental Matters in "Item 1 – Business", we are subject to federal, state, local and foreign laws and regulations and potential liabilities relating to the protection of the environment and human health and safety. We expect to incur substantial costs for ongoing compliance with such laws and regulations. We may also incur costs as a result of governmental or third-party claims, or otherwise incur costs, relating to cleanup of, or for injuries resulting from, contamination at sites associated with past and present operations. We accrue for environmental liabilities when a determination can be made that they are probable and reasonably estimable. The amount accrued is determined through the evaluation of various information, which could include claims, settlement offers, demands by government agencies, estimates performed by independent third parties, identification of other responsible parties and an assessment of their ability to contribute, and our prior experience. Inherent uncertainties exist in such evaluations primarily due to unknown conditions and other circumstances, changing governmental regulations and legal standards regarding liability, and evolving technologies. Item 8. Financial Statements and Supplementary Data – Note 19 includes information about environmental liabilities.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Like other global companies, we are exposed to market risks relating to fluctuations in commodity prices, interest rates and foreign currency exchange rates. The objective of our financial risk management is to minimize the negative impact of commodity price, interest rate and foreign exchange rate fluctuations on our earnings, cash flows and equity.

To manage commodity price risk, we enter into swap contracts for future forecasted purchases of copper. This reduces the impact of commodity price volatility on gross profit. To manage the interest rate risks, we use a combination of fixed and variable rate debt. This reduces the impact of short-term fluctuations in interest rates. To manage foreign currency exchange rate risks, we use forward exchange contracts to hedge firm commitments up to twelve months and all such contracts are marked to market with the recognition of a gain or loss at each reporting period.

The following analyses present the sensitivity of the market value, earnings and cash flows of our financial instruments and foreign operations to hypothetical changes in interest and exchange rates and market prices for copper as if these changes occurred at December 31, 2021. The range of changes chosen for these analyses reflects our view of changes which are reasonably possible over a one-year period. Market values are the present values of projected future cash flows based on the interest rate, exchange rate and copper price assumptions. These forward-looking statements are selective in nature and only address the potential impacts from financial instruments and foreign operations. They do not include other potential effects that could impact our business as a result of these changes.

Commodity Price Sensitivity Analysis. Our exposure to market risk for changes in copper prices relates primarily to the purchase price of the raw material and the fixed price sales agreements we have with customers of our PC segment. We utilize swap contracts to manage this price risk. As of December 31, 2021, we had outstanding copper swap contracts totaling 35.1 million pounds and the fair value of these contracts resulted in an unrealized gain of $60.9 million. A portion of the gain totaling $53.8 million, before tax, is recognized in other comprehensive income and a portion of the gain totaling $7.1 million is recognized in income, before tax. Holding other variables constant, if there were a 10 percent reduction in the December 31, 2021 market price of copper, the fair value of these contracts would be a gain of $45.6 million. This hypothetical gain would be allocated $41.2 million to other comprehensive income and $4.4 million would be recognized in income, before tax.

Interest Rate and Debt Sensitivity Analysis. Our exposure to market risk for changes in interest rates relates primarily to our debt obligations. We have fixed and variable rate debt and the ability to incur variable rate debt under the Koppers Inc. Credit Facility. At December 31, 2021, we had $500.0 million of fixed rate debt and $283.5 million of variable rate debt. For fixed rate debt, interest rate changes affect the fair market value but do not impact earnings or cash flows. For variable rate debt, interest rate changes generally do not affect the fair market value but do impact future earnings and cash flows, assuming other factors are held constant. The earnings and cash flows for the year ending December 31, 2021, assuming a one percentage point increase in interest rates, would have decreased approximately $2.8 million, holding other variables constant for variable rate debt.

Exchange Rate Sensitivity Analysis. Our exchange rate exposures result primarily from our investment and ongoing operations in Australia, Brazil, Canada, Chile, Denmark, the Netherlands, New Zealand and the United Kingdom. Holding other variables constant, if there were a ten percent reduction in all relevant exchange rates, the effect on our earnings, based on actual earnings from foreign operations for the year ended December 31, 2021, would be a reduction of approximately $4.7 million.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

Koppers Holdings Inc.

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MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

The management of Koppers Holdings Inc. is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external reporting purposes in accordance with accounting principles generally accepted in the United States of America.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Management has assessed the effectiveness of Koppers Holdings Inc.'s internal control over financial reporting as of December 31, 2021. In making this assessment, management has utilized the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in *Internal Control – Integrated Framework* (2013 Framework). Management concluded that based on its assessment, Koppers Holdings Inc.'s internal control over financial reporting was effective as of December 31, 2021.

The effectiveness of Koppers Holdings Inc.'s internal control over financial reporting as of December 31, 2021, has been audited by KPMG LLP, the independent registered public accounting firm that also audited the consolidated financial statements included in this annual report, as stated in their attestation report which appears on page 49.

February 23, 2022

/s/ Leroy M. Ball
Leroy M. Ball
President and Chief Executive Officer

/s/ Jimmi Sue Smith
Jimmi Sue Smith
Chief Financial Officer and Treasurer

Report of Independent Registered Public Accounting Firm

To the Shareholders and Board of Directors

Koppers Holdings Inc.:

Opinion on Internal Control Over Financial Reporting

We have audited Koppers Holdings Inc. and subsidiaries' (the Company) internal control over financial reporting as of December 31, 2021, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2021, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2021 and December 31, 2020, the related consolidated statements of operations, comprehensive income, shareholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2021, and the related notes and financial statement schedule II (collectively, the consolidated financial statements), and our report dated February 23, 2022 expressed an unqualified opinion on those consolidated 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 of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included 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/ KPMG LLP
Pittsburgh, Pennsylvania
February 23, 2022

Report of Independent Registered Public Accounting Firm

To the Shareholders and Board of Directors

Koppers Holdings Inc.:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Koppers Holdings Inc. and subsidiaries (the Company) as of December 31, 2021 and December 31, 2020, the related consolidated statements of operations, comprehensive income, shareholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2021, and the related notes and financial statement schedule II (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2021 and December 31, 2020, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2021, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2021, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission, and our report dated February 23, 2022 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated 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 consolidated 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 consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated 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 consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of a critical audit matter does not alter in any way our opinion on the consolidated 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.

Assessment of the carrying value of Goodwill in the Utility Products Reporting Unit

As described in Notes 2 and 13 to the consolidated financial statements, the Company's goodwill balance as of December 31, 2021 was $296.0 million, of which $79.8 million related to the Utility Products reporting unit. The Company performs goodwill impairment testing at the reporting unit level annually or more frequently if a change in circumstances or the occurrence of events indicates that a potential impairment exists. The Company uses a combination of an income approach, using a discounted cash flow methodology, and a market approach in its annual goodwill impairment assessment.

We identified the assessment of the carrying value of goodwill for the Utility Products reporting unit as a critical audit matter. Significant auditor judgment was required to evaluate the Company's estimate of fair value of the Utility Products reporting unit, which was developed, in part, using a discounted cash flow model. Specifically, the key assumptions used in the reporting unit's discounted cash flow model are forecasted cash flows, including forecasted revenue growth rates, and the discount rate, as changes to those assumptions could have a significant effect on the Company's assessment of the impairment of the goodwill.

The following are the primary procedures we performed to address this critical audit matter. We evaluated the design and tested the operating effectiveness of certain internal controls related to the Company's goodwill impairment assessment process. This included controls over the development of the forecasted cash flows, including forecasted revenue growth rates, and discount rate assumptions. We evaluated the Company's forecasted cash flows and revenue growth rates by comparing them to external market and industry data. We compared the Company's historical revenue and cash flows forecasts to actual results to assess the Company's ability to accurately forecast. We involved valuation professionals with specialized skills and knowledge, who assisted in:

- Evaluating the Company's discount rate, by comparing it against a discount rate that was independently developed using publicly available third-party market data for comparable entities.
- Developing an independent estimate of the Utility Products reporting unit's fair value using the reporting unit's cash flow forecast and an independently developed discount rate, and comparing the result of our estimate of fair value to the Company's fair value estimate.

/s/ KPMG LLP

We have served as the Company's auditor since 2016.

Pittsburgh, Pennsylvania
February 23, 2022

KOPPERS HOLDINGS INC.
CONSOLIDATED STATEMENT OF OPERATIONS

	Year Ended December 31,		
	2021	2020	2019
(Dollars in millions, except per share amounts)			
Net sales	$1,678.6	$1,669.1	$1,637.0
Cost of sales	1,344.5	1,308.7	1,306.3
Depreciation and amortization	57.7	54.1	51.4
Selling, general and administrative expenses	148.9	143.1	148.3
Impairment and restructuring charges	2.2	6.5	6.0
(Gain) on sale of assets	(31.2)	0.0	0.0
Operating profit	156.5	156.7	125.0
Other income, net	3.6	2.3	0.4
Interest expense	40.5	48.9	61.7
Income from continuing operations before income taxes	119.6	110.1	63.7
Income tax provision	34.5	21.0	0.0
Income from continuing operations	85.1	89.1	63.7
Income (loss) from discontinued operations, net of tax benefit (expense) of $0.0, $0.9 and $(1.4)	0.1	(3.9)	3.7
(Loss) gain on sale of discontinued operations, net of tax benefit (expense) of $0.1, $(8.3) and $0.0	(0.3)	35.8	0.0
Net income	84.9	121.0	67.4
Net (loss) income attributable to noncontrolling interests	(0.3)	(1.0)	0.8
Net income attributable to Koppers	$ 85.2	$ 122.0	$ 66.6
Earnings (loss) per common share attributable to Koppers common shareholders:			
Basic -			
Continuing operations	$ 4.02	$ 4.25	$ 3.09
Discontinued operations	(0.02)	1.56	0.13
Earnings per basic common share	$ 4.00	$ 5.81	$ 3.22
Diluted -			
Continuing operations	$ 3.90	$ 4.17	$ 3.03
Discontinued operations	(0.02)	1.54	0.13
Earnings per diluted common share	$ 3.88	$ 5.71	$ 3.16
Weighted average shares outstanding (in thousands):			
Basic	21,238	20,992	20,665
Diluted	21,925	21,374	21,068

KOPPERS HOLDINGS INC.
CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

	Year Ended December 31,		
	2021	2020	2019
(Dollars in millions)			
Net income	$ 84.9	$121.0	$67.4
Changes in other comprehensive income:			
Currency translation adjustment	(16.4)	22.8	(1.3)
Unrealized (loss) gain on cash flow hedges, net of tax benefit (expense) of $0.5, $(12.6) and $(4.1)	(3.8)	41.2	8.7
Unrecognized pension prior service cost (benefit), net of tax benefit of $0.0, $0.0 and $0.0	0.1	0.0	(0.1)
Unrecognized pension net (loss) gain, net of tax benefit (expense) of $1.3, $0.4 and $(0.8)	(3.8)	(1.1)	2.1
Total comprehensive income	61.0	183.9	76.8
Comprehensive (loss) income attributable to noncontrolling interests	(0.2)	0.1	0.6
Comprehensive income attributable to Koppers	$ 61.2	$183.8	$76.2

The accompanying notes are an integral part of these consolidated financial statements.

KOPPERS HOLDINGS INC.
CONSOLIDATED BALANCE SHEET

	December 31, 2021	December 31, 2020
(Dollars in millions, except per share amounts)		
Assets		
Cash and cash equivalents, including restricted cash (Note 5)	$ 45.5	$ 38.5
Accounts receivable, net of allowance of $3.3 and $2.6	182.8	175.1
Inventories, net	313.8	295.8
Derivative contracts	61.0	38.5
Other current assets	25.0	16.6
Total current assets	628.1	564.5
Property, plant and equipment, net	489.1	409.1
Operating lease right-of-use assets	91.2	102.5
Goodwill	296.0	297.8
Intangible assets, net	131.5	149.8
Deferred tax assets	15.0	18.4
Non-current derivative contracts	0.0	31.9
Other assets	11.0	24.6
Total assets	$1,661.9	$1,598.6
Liabilities		
Accounts payable	$ 171.9	$ 154.1
Accrued liabilities	90.5	106.7
Current operating lease liabilities	21.3	21.2
Current maturities of long-term debt	2.0	10.1
Total current liabilities	285.7	292.1
Long-term debt	781.5	765.8
Accrued postretirement benefits	38.6	46.2
Deferred tax liabilities	33.4	21.3
Operating lease liabilities	70.3	81.3
Other long-term liabilities	41.6	45.9
Total liabilities	1,251.1	1,252.6
Commitments and contingent liabilities (Note 19)		
Equity		
Senior Convertible Preferred Stock, $0.01 par value per share; 10,000,000 shares authorized; no shares issued	0.0	0.0
Common Stock, $0.01 par value per share; 80,000,000 shares authorized; 24,026,844 and 23,688,347 shares issued	0.2	0.2
Additional paid-in capital	249.5	234.1
Retained earnings	300.9	215.8
Accumulated other comprehensive loss	(40.0)	(15.9)
Treasury stock, at cost, 2,930,694 and 2,589,803 shares	(104.0)	(92.5)
Total Koppers shareholders' equity	406.6	341.7
Noncontrolling interests	4.2	4.3
Total equity	410.8	346.0
Total liabilities and equity	$1,661.9	$1,598.6

The accompanying notes are an integral part of these consolidated financial statements.

KOPPERS HOLDINGS INC.
CONSOLIDATED STATEMENT OF CASH FLOWS

	Year Ended December 31,		
	2021	2020	2019
(Dollars in millions)			
Cash provided by (used in) operating activities:			
Net income	$ 84.9	$ 121.0	$ 67.4
Adjustments to reconcile net cash provided by (used in) operating activities:			
Depreciation and amortization	57.7	54.1	55.1
Stock-based compensation	13.0	11.3	12.1
Change in derivative contracts	3.8	(9.2)	(4.1)
Non-cash interest expense	2.7	2.6	2.6
Loss (gain) on sale of discontinued operations	0.3	(35.8)	0.0
(Gain) loss on sale of assets and investment	(31.5)	0.0	0.8
Insurance proceeds	(6.1)	(0.7)	(3.0)
Deferred income taxes	16.9	9.4	(10.9)
Change in other liabilities	2.1	(8.6)	(18.4)
Other – net	4.0	(0.4)	(0.3)
Changes in working capital:			
Accounts receivable	(12.7)	(11.5)	25.4
Inventories	(24.3)	8.7	(14.8)
Accounts payable	20.9	(25.3)	(3.1)
Accrued liabilities	(21.0)	8.5	3.9
Other working capital	(7.7)	3.0	2.6
Net cash provided by operating activities	103.0	127.1	115.3
Cash (used in) provided by investing activities:			
Capital expenditures	(125.0)	(69.8)	(37.2)
Insurance proceeds	6.1	0.7	3.0
Net cash provided by sale of discontinued operations and asset sales	29.4	74.7	0.4
Net cash (used in) provided by investing activities	(89.5)	5.6	(33.8)
Cash (used in) provided by financing activities:			
Net increase (decrease) in credit facility borrowings	15.2	(57.3)	(61.1)
Repayments of long-term debt	(10.1)	(70.7)	(29.7)
Issuances of Common Stock	2.4	1.1	4.0
Repurchases of Common Stock	(11.5)	(1.6)	(0.9)
Payment of debt issuance costs	0.0	(0.2)	(1.0)
Net cash used in financing activities	(4.0)	(128.7)	(88.7)
Effect of exchange rate changes on cash	(2.5)	1.5	(0.4)
Change in cash and cash equivalents of discontinued operations held for sale	0.0	0.7	2.5
Net increase (decrease) in cash and cash equivalents	7.0	6.2	(5.1)
Cash and cash equivalents at beginning of period	38.5	32.3	37.4
Cash and cash equivalents at end of period	$ 45.5	$ 38.5	$ 32.3
Cash paid for amounts included in the measurement of lease liabilities:			
Operating cash outflow from operating leases	$ 30.5	$ 31.5	$ 31.1
Supplemental disclosure of non-cash investing and financing activities:			
Right-of-use assets obtained in exchange for new operating lease liabilities	$ 12.6	$ 8.6	$ 29.9
Supplemental disclosure of cash flow information:			
Cash paid during the year for:			
Interest	$ 38.1	$ 50.1	$ 60.9
Income taxes	23.4	13.4	16.8
Noncash investing activities:			
Accrued capital expenditures	7.3	8.9	0.4

The accompanying notes are an integral part of these consolidated financial statements.

KOPPERS HOLDINGS INC.
CONSOLIDATED STATEMENT OF SHAREHOLDERS' EQUITY

	Year Ended December 31,		
	2021	2020	2019
(Dollars in millions)			
Senior Convertible Preferred Stock			
Balance at beginning and end of year	$ 0.0	$ 0.0	$ 0.0
Common Stock			
Balance at beginning and end of year	0.2	0.2	0.2
Additional paid-in capital			
Balance at beginning of year	234.1	221.9	206.0
Employee stock plans	13.0	11.3	12.1
Issuance of common stock	2.4	0.9	3.8
Balance at end of year	249.5	234.1	221.9
Retained earnings			
Balance at beginning of year	215.8	93.8	27.2
Net income attributable to Koppers	85.2	122.0	66.6
Balance at end of year	301.0	215.8	93.8
Accumulated other comprehensive loss			
Currency translation adjustment:			
Balance at beginning of year	(18.1)	(39.8)	(38.5)
Loss on sale of subsidiary	(4.4)	0.0	0.0
Change in currency translation adjustment	(12.2)	21.7	(1.3)
Balance at end of year	(34.7)	(18.1)	(39.8)
Unrecognized gains (losses) on cash flow hedges:			
Balance at beginning of year	44.4	3.2	(5.5)
Reclassification of unrealized (gains) losses on cash flow hedges to expense, net of tax benefit (expense) of $7.2, $0.1 and $(1.5)	(22.8)	(0.2)	4.6
Change in cash flow hedges, net of tax (expense) benefit of $(6.7), $(12.7) and $(2.6)	19.0	41.4	4.1
Balance at end of year	40.6	44.4	3.2
Unrecognized pension prior service cost (benefit):			
Balance at beginning of year	(0.6)	(0.6)	(0.6)
Revaluation of unrecognized prior service benefit, net of tax benefit of $0.0, $0.0 and $0.0	0.1	0.0	0.0
Balance at end of year	(0.5)	(0.6)	(0.6)
Unrecognized pension net loss:			
Balance at beginning of year	(41.6)	(40.5)	(42.6)
Reclassification of unrecognized pension net loss to expense, net of tax expense of $0.3, $0.3 and $0.3	1.1	1.1	1.1
Revaluation of unrecognized pension net loss, net of tax (benefit) expense of $(1.6), $(0.7) and $0.4	(4.9)	(2.2)	1.0
Balance at end of year	(45.4)	(41.6)	(40.5)
Total balance at end of year	(40.0)	(15.9)	(77.7)
Treasury stock			
Balance at beginning of year	(92.5)	(90.9)	(90.0)
Purchases	(11.6)	(1.6)	(0.9)
Balance at end of year	(104.1)	(92.5)	(90.9)
Total Koppers shareholders' equity – end of year	406.6	341.7	147.3
Noncontrolling interests			
Balance at beginning of year	4.3	11.4	10.8
Net (loss) income attributable to noncontrolling interests	(0.3)	(1.0)	0.8
Sale of discontinued operations	0.0	(7.2)	0.0
Currency translation adjustment	0.2	1.1	(0.2)
Balance at end of year	4.2	4.3	11.4
Total equity – end of year	$ 410.8	$346.0	$158.7

The accompanying notes are an integral part of these consolidated financial statements.

KOPPERS HOLDINGS INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. Description of Business

Parent company of Koppers Inc. – In these financial statements, unless otherwise indicated or the context requires otherwise, when the terms "Koppers," the "Company," "we," "our" or "us," are used, they mean Koppers Holdings Inc. ("Koppers Holdings") and its subsidiaries on a consolidated basis. The use of these terms is not intended to imply that Koppers Holdings and Koppers Inc. are not separate and distinct legal entities from each other and from their respective subsidiaries. Koppers Holdings has no direct operations and no significant assets other than the stock of Koppers Inc. It depends on the dividends from the earnings of Koppers Inc. and its subsidiaries to generate the funds necessary to meet its financial obligations. The terms of Koppers Inc.'s Credit Facility prohibit Koppers Inc. from paying dividends and otherwise transferring assets except for certain limited dividends. Further, the terms of the indenture governing Koppers Inc.'s Senior Notes due 2025 significantly restrict Koppers Inc. from paying dividends and otherwise transferring assets to Koppers Holdings.

Business description – We are a global integrated provider of treated wood products, wood treatment chemicals and carbon compounds for use in a variety of markets including the railroad, specialty chemical, utility, residential lumber, agriculture, aluminum, steel, rubber and construction industries. Our business is operated through three business segments, Railroad and Utility Products and Services ("RUPS"), Performance Chemicals ("PC") and Carbon Materials and Chemicals ("CMC").

Our RUPS segment sells treated and untreated wood products, rail joint bars and services primarily to the railroad industry and treated wood products to the utility industry. Railroad products include procuring and treating items such as crossties, switch ties and various types of lumber used for railroad bridges and crossings and the manufacture of rail joint bars. Utility products include transmission and distribution poles and pilings. The segment also operates a railroad services business that conducts engineering, design, repair and inspection services for railroad bridges, a business related to the recovery of used crossties and utility poles and a business related to the inspection of utility poles.

Our PC segment develops, manufactures, and markets wood preservation chemicals and wood treatment technologies and services a diverse range of end-markets including infrastructure, residential and commercial construction and agriculture.

Our CMC segment is primarily a manufacturer of creosote, carbon pitch, naphthalene, phthalic anhydride and carbon black feedstock. Creosote is used in the treatment of wood and carbon black feedstock which is used in the production of carbon black. Carbon pitch is a critical raw material used in the production of aluminum and for the production of steel in electric arc furnaces. Naphthalene is used for the production of phthalic anhydride and as a surfactant in the production of concrete. Phthalic anhydride is used in the production of plasticizers, polyester resins and alkyd paints.

2. Summary of Significant Accounting Policies

Basis of presentation – The consolidated financial statements include our accounts and all majority-owned subsidiaries for which we are deemed to exercise control over its operations. All significant intercompany transactions have been eliminated in consolidation. Certain prior period amounts in the Notes to Consolidated Financial Statements have been reclassified to conform to the current period's presentation.

Use of estimates – Accounting principles generally accepted in the United States require management to make estimates and judgments that affect the reported amounts of assets and liabilities and the disclosure of contingencies on the date of the financial statements as well as the reported amounts of revenues and expenses during the reporting period. Estimates have been prepared on the basis of the most current and best available information and actual results could differ materially from these estimates.

Revenue recognition – Revenue is recognized upon the completion of performance obligations under our contracts with customers and when control of a good or service is transferred to the customer. Substantially all of our contracts with customers are ship and invoice arrangements where revenue is recognized when we complete our performance obligations and transfer control to the customer. Revenue recognition generally occurs at the point of shipment; however in certain circumstances as shipping terms dictate, we transfer control and revenue is recognized at the point of destination. Payment terms on ship and invoice arrangements are typically within 45 days. Shipping and handling costs are included as a component of cost of sales.

We recognize revenue related to the procurement of certain untreated railroad crossties upon delivery to our plant and acceptance by the customer. Service revenue, consisting primarily of wood treating services, is recognized at the time the service is provided and the performance obligation is satisfied. Payment on sales of untreated railroad crossties and wood treating services are generally due within 30 days of the invoice date.

Contract Balances – The timing of revenue recognition in accordance with ASC 606 results in both billed accounts receivable and unbilled receivables, both classified as accounts receivable, net of allowance within the consolidated balance sheet. Contract assets of $7.9 million and $5.8 million are recorded within accounts receivable, net of allowance within the consolidated balance sheet as of December 31, 2021 and December 31, 2020, respectively.

Cash, cash equivalents and restricted cash – Cash and cash equivalents include cash on hand and on deposit and investments in highly liquid investments with an original maturity of 90 days or less. Restricted cash of $2.3 million as of December 31, 2021 is being held in an escrow account for a remaining period of three months to cover potential customary indemnity claims by the buyers of one of our businesses sold as described in Note 4 – "Plant Closures and Divestitures."

Accounts receivable – We maintain allowances for doubtful accounts for estimated losses resulting from the inability of customers to make required payments. In circumstances where we become aware of a specific customer's inability to meet its financial obligations to Koppers, a specific reserve for bad debts is recorded against amounts due. If the financial condition of our customers were to deteriorate, resulting in an inability to make payments, additional allowances may be required.

Inventories – In the United States, CMC and RUPS inventories are valued at the lower of cost, utilizing the last-in, first-out ("LIFO") basis, or net realizable value. Utilities and industrial products inventories are valued at the lower of cost, utilizing the moving average cost basis, or net realizable value. PC inventories and all other inventories outside of the United States are valued at the lower of cost, utilizing the first-in, first-out ("FIFO") basis, and net realizable value. Net realizable value is the estimated selling price in the ordinary course of business, less reasonably predictable costs of completion, disposal and transportation. LIFO inventories constituted approximately 45 percent and 53 percent of the FIFO inventory value at December 31, 2021 and 2020, respectively. In 2021, 2020 and 2019, we recorded inventory write-downs of $0.6 million, $0.6 million and $1.0 million, respectively, related to lower of cost and net realizable value for our subsidiaries that value inventory on the FIFO basis.

Property, plant and equipment – Property, plant and equipment are recorded at purchased cost and include improvements which significantly increase capacities or extend useful lives of existing plant and equipment. Depreciation expense is calculated by applying the straight-line method over estimated useful lives. Estimated useful lives for buildings generally range from ten to 20 years and depreciable lives for machinery and equipment generally range from three to 15 years. Net gains and losses related to asset disposals are recognized in earnings in the period in which the disposal occurs. Routine repairs, replacements and maintenance are expensed as incurred.

We periodically evaluate whether current facts and circumstances indicate that the carrying value of depreciable long-lived assets may not be recoverable. If an asset, or logical grouping of assets, is determined to be impaired, the asset is written down to its fair value using discounted future cash flows and, if available, quoted market prices. Refer to Note 4 – "Plant Closures and Divestitures" for additional information.

Goodwill and other intangible assets – Goodwill and other purchased intangible assets are included in the identifiable assets of the business segment to which they have been assigned. Goodwill is not amortized and is subject to an impairment test that we conduct annually or more frequently if a change in circumstances or the occurrence of events indicates that potential impairment exists. We perform an assessment of goodwill at the reporting unit level, utilizing a combination of an income approach, using a discounted cash flow methodology, and a market approach, by comparing the estimated fair value calculations of each reporting unit with its net book value. The discounted cash flow calculations are dependent on several subjective factors including the timing of future forecasted cash flows including future forecasted revenue growth rates, and the discount rate. If assumptions or estimates in the fair value calculations change or if future forecasted cash flows or future forecasted growth rates vary from what was planned, this may impact the impairment analysis. We performed an impairment test for goodwill for each of the reporting units using the above quantitative testing approach. Based on the evaluations performed, we determined that the fair value of each of the reporting units exceeded its carrying amount, and therefore, we determined that goodwill was not impaired.

Identifiable intangible assets, other than goodwill, are recorded at fair value. Identifiable intangible assets are amortized on a straight-line basis over their estimated useful lives.

Deferred income taxes – Deferred tax assets and liabilities are recognized for future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases. The effect on deferred tax assets and liabilities of a change in tax laws is recognized in earnings in the period the new laws are enacted. A valuation allowance is recorded to reduce the carrying amounts of deferred tax assets unless it is more likely than not that such assets will be realized.

Leases – Lease arrangements are determined whether or not to be a lease at inception. Right-of-use ("ROU") assets represent our right to use an underlying asset for the lease term and lease liabilities represent our obligation to make lease payments. ROU lease liabilities are recognized based on the present value of the future minimum lease payments over the term of the lease as of the start date and may include consideration of certain adjustments including non-lease components. ROU assets are determined based on the determined ROU lease liability and may include the consideration of certain adjustments including initial direct costs, prepaid lease payments, lease incentives received, and non-lease components. The option to extend or terminate a lease is included in the determination of the ROU asset and lease liability only when it is reasonably certain that we will exercise that option.

Asset retirement obligations – Asset retirement obligations are initially recorded at present value and are capitalized as part of the cost of the related long-lived asset when sufficient information is available to estimate present value. The capitalized costs are subsequently charged to depreciation expense over the estimated useful life of the related long-lived asset. The present value of the obligation is determined by calculating the discounted value of expected future cash flows and accretion expense is recorded each month to ultimately increase this obligation to fair value.

We recognize asset retirement obligations for the removal and disposal of residues; dismantling of certain tanks required by governmental authorities; cleaning and dismantling costs for owned rail cars; cleaning costs for leased rail cars and barges; and site demolition, when required by governmental authorities or by contract.

The following table describes changes to our asset retirement obligation liabilities:

	December 31,	
	2021	2020
(Dollars in millions)		
Asset retirement obligation at beginning of year	**$19.8**	$20.7
Accretion expense	**1.0**	1.1
Revision in estimated cash flows [(a)]	**(0.3)**	4.6
Cash expenditures	**(7.3)**	(6.6)
Balance at end of period	**$13.2**	$19.8

(a) Revision in estimated cash flows for 2020 includes $2.9 million of charges related to restructuring activities. See Note 4 – "Plant Closures and Divestitures" for additional information.

Litigation and contingencies – Amounts associated with litigation and contingencies are accrued when management, after taking into consideration the facts and circumstances of each matter including any settlement offers, has determined that it is probable that a liability has been incurred and the amount of loss can be reasonably estimated. Legal costs for litigation are expensed as incurred with the exception of legal fees relating to the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended ("CERCLA"), sites.

Environmental liabilities – We accrue for remediation costs and penalties when the responsibility to remediate is probable and the amount of related cost is reasonably estimable. If only a range of potential liability can be estimated and no amount within the range is more probable than another, the accrual is recorded at the low end of that range. Remediation liabilities are discounted if the amount and timing of the cash disbursements are readily determinable.

COVID-19 Assessment

In March 2020, the World Health Organization categorized the current coronavirus disease ("COVID-19") as a pandemic. COVID-19 continues to impact the United States and other countries across the world, and the duration and ultimate severity of its effects are currently unknown. This current level of uncertainty over the economic and operational impacts of COVID-19 means the related future financial impact cannot be reasonably estimated at this time. Our consolidated financial statements presented herein reflect certain estimates and assumptions made by management that affect the reported amounts of assets and liabilities and disclosure of such assets and liabilities at the date of the consolidated financial statements and reported amounts of revenue and expenses during the reporting periods presented.

Such estimates and assumptions affect, among other things, our goodwill, long-lived asset and intangible asset valuation; inventory valuation; valuation of deferred income taxes; the allowance for doubtful accounts; and measurement of cash incentive plans. Events and changes in circumstances arising after December 31, 2021, including those resulting from the impacts of COVID-19, will be reflected in management's estimates for future periods.

3. New Accounting Pronouncements

In March 2020, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2020-04: Reference Rate Reform (Topic 848) Facilitation of the Effects of Reference Rate Reform on Financial Reporting. This update provides temporary optional expedients and exceptions to U.S. GAAP on contract modifications, hedging relationships, and other transactions affected by reference rate reform to ease entities' financial reporting burdens as the market transitions from the London Interbank Offered Rate (LIBOR) and other interbank offered rates to alternative reference rates. The guidance was effective upon issuance and may be applied prospectively to contract modifications made, hedging relationships entered into, and other transactions affected by reference rate reform, evaluated on or before December 31, 2022, beginning during the reporting period in which the guidance has been elected. Our debt agreements include the use of alternate rates when LIBOR is not available and we do not maintain hedging relationships applicable to this ASU. We do not expect the application of this update to have a material impact on our financial statements and, to the extent we enter into modifications of agreements that are impacted by the LIBOR phase-out, we will apply such guidance to those contract modifications.

In January 2020, the FASB issued ASU No. 2020-01, "*Investments – Equity Securities (Topic 321), Investments – Equity Method and Joint Ventures (Topic 323), and Derivatives and Hedging (Topic 815) – Clarifying the Interactions between Topic 321, Topic 323, and Topic 815.*" This ASU is effective for fiscal years beginning after December 15, 2020. The adoption of ASU No. 2020-01 did not have a material impact on our consolidated financial statements.

4. Plant Closures and Divestitures

Over the past seven years, we have been restructuring our Carbon Materials and Chemicals ("CMC") segment in order to concentrate our facilities in regions where we believe we hold key competitive advantages to better serve our global customers. These closure activities include:

- In June 2021, we sold a subsidiary related to our closed facility located in Uithoorn, the Netherlands and we recorded a gain on sale of $0.3 million. In April 2014, we had ceased coal tar distillation activities at the facility.
- In February 2021, we sold our closed Follansbee, West Virginia coal tar distillation facility and we recorded a gain on sale of $5.7 million, consisting of $2.6 million from cash proceeds in addition to the assumption of certain liabilities by the buyer.
- In September 2020, we sold Koppers (Jiangsu) Carbon Chemical Company Limited ("KJCC"). Refer to Note 5 – "Discontinued Operations" for more details.
- In October 2018, we sold our closed Clairton, Pennsylvania coal tar distillation facility. In March 2021, certain post-sale conditions were achieved and the buyer of the property released cash held in escrow to us resulting in a gain on sale of $1.8 million

Other closure and divestiture activity relates to our Railroad Utility Products and Services ("RUPS") segment. In October 2021, we sold our closed Denver, Colorado crosstie treating facility and we recorded a gain on sale of $23.4 million. As part of the

sales agreement, we may receive additional contingent post-closing payments secured by a guaranty from the buyer after applicable redevelopment milestones are reached. At this time, we are unable to estimate how much, if any, of these additional funds will ultimately be paid to us.

Details of the restructuring activities and related reserves are as follows:

(Dollars in millions)	*Severance and employee benefits*	*Asset retirement*	*Other*	*Total*
Reserve at December 31, 2019	$ 0.9	$ 0.7	$ 2.4	$4.0
Accrual	0.5	2.9	3.4	6.8
Costs charged against assets	0.0	0.0	(3.4)	(3.4)
Reversal of accrued charges	(0.3)	0.0	0.0	(0.3)
Cash paid	(0.2)	(0.8)	(0.3)	(1.3)
Currency translation	0.0	0.0	0.2	0.2
Reserve at December 31, 2020	$ 0.9	$ 2.8	$ 2.3	$6.0
Accrual	0.0	0.0	2.4	2.4
Costs charged against assets	0.0	0.0	(2.4)	(2.4)
Reversal of accrued charges	(0.2)	(0.7)	0.0	(0.9)
Cash paid	(0.7)	(1.9)	0.0	(2.6)
Sale of subsidiary	0.0	(0.2)	(2.3)	(2.5)
Reserve at December 31, 2021	**$ 0.0**	**$ 0.0**	**$ 0.0**	**$0.0**

5. Discontinued Operations

On September 30, 2020, we sold KJCC to Fangda Carbon New Material Co., Ltd and C-Chem Co., Ltd., a subsidiary of Nippon Steel Chemical & Material Co., Ltd. (the Buyers). KJCC was located in Pizhou, Jiangsu Province, China and was a 75 percent-owned coal tar distillation company which was part of our CMC segment. The pre-tax gain on the sale of KJCC was $44.1 million and the after-tax gain on the sale was $35.8 million for the year ended December 31, 2020. Restricted cash of $2.3 million is being held in an escrow account and is recorded within cash and cash equivalents as of December 31, 2021 to cover potential customary indemnity claims by the Buyers for a remaining period of three months. On December 23, 2021, the Buyers issued claims totaling $1.6 million, of which our share is $1.2 million. We have rejected the claims and until these claims are resolved, the escrow amount will not be fully released.

The sale of KJCC represented a strategic shift that has a major effect on our operations and financial results and was, therefore, classified as discontinued operations in our consolidated financial statements and notes, which have been restated accordingly.

Net sales and operating (loss) profit from discontinued operations for the years ended December 31, 2020 and 2019 consist of the following amounts:

	Year Ended December 31,	
(Dollars in millions)	*2020*	*2019*
Net sales	$31.6	$135.8
Operating (loss) profit	(5.0)	5.8

The cash flows related to KJCC have not been restated in the Consolidated Statement of Cash Flows. Net cash inflows and outflows from discontinued operations for the years ended December 31, 2020 and 2019 consist of the following amounts:

	Year Ended December 31,	
	2020	*2019*
(Dollars in millions)		
Net cash provided by operating activities	$ 0.7	$ 21.4
Net cash used in investing activities	(0.9)	(3.8)
Net cash used in financing activities	0.0	(19.8)
Effect of exchange rate changes on cash	(0.5)	(0.3)
Net decrease in cash and cash equivalents	(0.7)	(2.5)

In addition, we ceased carbon black production at our CMC facility located in Kurnell, Australia during 2011. Costs associated with this closure are included in income (loss) from discontinued operations on the consolidated statement of operations.

6. Fair Value Measurements

Carrying amounts and the related estimated fair values of our financial instruments as of December 31, 2021 and 2020 are as follows:

	December 31, 2021		*December 31, 2020*	
	Fair Value	*Carrying Value*	*Fair Value*	*Carrying Value*
(Dollars in millions)				
Financial assets:				
Investments and other assets	$ 1.3	$ 1.3	$ 1.2	$ 1.2
Financial liabilities:				
Long-term debt (including current portion)	$804.1	$789.1	$799.2	$784.2

Investments and other assets – Represents the broker-quoted cash surrender value on universal life insurance policies. This asset is classified as Level 2 in the valuation hierarchy and is measured from values received from financial institutions.

Debt – The fair value of our long-term debt is estimated based on the market prices for the same or similar issuances or on the current rates offered to us for debt of the same remaining maturities (Level 2). The fair value of our Credit Facility approximates carrying value due to the variable rate nature of this instrument.

7. Earnings and Dividends per Common Share

The computation of basic earnings per common share for the periods presented is based upon the weighted average number of common shares outstanding during the periods. The computation of diluted earnings per common share includes the effect of non-vested nonqualified stock options and stock units assuming such options and stock units were outstanding common shares at the beginning of the period. The effect of antidilutive securities is excluded from the computation of diluted loss per common share, if any.

The following table sets forth the computation of basic and diluted earnings per common share:

	Year Ended December 31,		
	2021	2020	2019
(Dollars in millions, except share amounts, in thousands, and per share amounts)			
Net income attributable to Koppers	$ 85.2	$ 122.0	$ 66.6
Less: Income (loss) from discontinued operations, net of tax	0.1	(3.9)	3.7
(Loss) gain on sale of discontinued operations	(0.3)	35.8	0.0
Noncontrolling interest related to discontinued operations	0.0	(1.0)	0.8
Income from continuing operations attributable to Koppers	$ 85.4	$ 89.1	$ 63.7
Weighted average common shares outstanding:			
Basic	21,238	20,992	20,665
Effect of dilutive securities	687	382	403
Diluted	21,925	21,374	21,068
Earnings per common share – continuing operations:			
Basic earnings per common share	$ 4.02	$ 4.25	$ 3.09
Diluted earnings per common share	3.90	4.17	3.03
Other data:			
Antidilutive securities excluded from computation of diluted earnings per common share	436	717	764

On February 23, 2022, the board of directors declared a quarterly dividend of five cents per common share, payable on April 4, 2022 to shareholders of record as of March 18, 2022.

8. Stock-based Compensation

We have outstanding stock-based compensation awards that were granted under the amended and restated 2005 Long-Term Incentive Plan (the "2005 LTIP"), the 2018 Long-Term Incentive Plan (the "2018 LTIP") and the 2020 Long-Term Incentive Plan, as amended (the "2020 LTIP"). The 2005 LTIP, the 2018 LTIP and the 2020 LTIP are collectively referred to as the "LTIP". The LTIP provides for the grant to eligible persons of stock options, stock appreciation rights, restricted stock, restricted stock units, performance shares, performance awards, dividend equivalents and other stock-based awards, which are collectively referred to as the "awards." On May 6, 2021, the shareholders approved an amendment to our 2020 LTIP and an Amended and Restated Employee Stock Purchase Plan to increase the number of shares available for grant by 1,500,000 and 300,000, respectively.

Restricted Stock Units and Performance Stock Units

Under the LTIP, the board of directors grants restricted stock units and performance stock units to certain employee participants (collectively, the "stock units"). Compensation expense for non-vested stock units is recorded over the vesting period based on the fair value at the date of grant. The fair value of restricted stock units is the market price of the underlying common stock on the date of grant and the fair value of performance stock units is determined using a Monte Carlo valuation model. For grants to most employees, the restricted stock units vest in four equal annual installments. Restricted stock units that have one-year vesting periods are also issued as compensation under the LTIP to members of the board of directors and, from time to time, are issued to employees with vesting periods of two years or less.

Performance stock units have vesting based upon a market condition. These performance stock units have multi-year performance objectives and a three-year period for vesting (if the applicable performance objective is achieved). The applicable performance objective is based on our total shareholder return relative to the Standard & Poor's SmallCap 600 Materials Index. The number of performance stock units granted represents the target award and participants have the ability to earn between zero and 200 percent of the target award based upon actual performance. If minimum performance criteria are not achieved, no performance stock units will vest. We have the discretion to settle the awards in cash rather than shares, although we currently expect that all awards will be settled by the issuance of shares.

We calculated the fair value of the performance stock unit awards on the date of the grant using assumptions listed below:

	January 2021 Grant	*March 2020 Grant*	*March 2019 Grant*
Grant date price per share of stock performance award	**$29.84**	$19.63	$26.63
Expected dividend yield per share	**0.00%**	0.00%	0.00%
Expected volatility	**68.70%**	45.60%	39.00%
Risk-free interest rate	**0.16%**	0.72%	2.50%
Look-back period in years	**3.00**	2.83	2.82
Grant date fair value per share of stock performance award	**$41.50**	$11.56	$40.30

Dividends declared, if any, on our common stock during the period prior to vesting of the stock units are credited at equivalent value as additional stock units and become payable as additional common shares upon vesting. In the event of termination of employment, other than retirement, death or disability, any non-vested stock units are forfeited, including additional stock units credited from dividends. In the event of termination of employment due to retirement, death or disability, pro-rata vesting of the stock units over the service period will result. There are special vesting provisions for the stock units related to a change in control.

The following table shows a summary of the performance stock units as of December 31, 2021:

Performance Period	*Minimum Shares*	*Target Shares*	*Maximum Shares*
2019 – 2021	256,958	256,958	256,958
2020 – 2022	0	75,395	150,835
2021 – 2023	41,897	141,813	241,747

The minimum, target and maximum shares above reflect the impact from completed performance periods. Performance stock units granted in March 2019 for the 2019 – 2021 performance period will vest in March 2021 at 182.7 percent of the original target share amount of 140,665 stock units.

The following table shows a summary of the status and activity of non-vested stock awards for the year ended December 31, 2021:

	Restricted Stock Units	*Performance Stock Units*	*Total Stock Units*	*Weighted Average Grant Date Fair Value per Unit*
Non-vested at January 1, 2021	509,509	391,744	901,253	$25.48
Granted	225,049	149,874	374,923	$34.89
Performance share adjustment	0	(60,540)	(60,540)	$ 5.55
Vested	(224,017)	(1,821)	(225,838)	$23.40
Forfeited	(4,636)	(5,091)	(9,727)	$17.36
Non-vested at December 31, 2021	**505,905**	**474,166**	**980,071**	**$30.79**

Stock Options

Stock options to most executive officers vest and become exercisable in four equal annual installments. The stock options have a term of ten years. In the event of termination of employment, other than retirement, death or disability, any non-vested options are forfeited. In the event of termination of employment due to retirement, death or disability, pro-rata vesting of the options over the service period will result. There are special vesting provisions for the stock options related to a change in control.

Compensation expense for non-vested stock options is recorded over the vesting period based on the fair value at the date of grant. We calculated the fair value of stock options on the date of grant using the Black-Scholes-Merton model and the assumptions listed below:

	January 2021 Grant	*March 2020 Grant*	*March 2019 Grant*	*March 2018 Grant*
Grant date price per share of stock option award	**$29.84**	$19.63	$26.63	$41.60
Expected dividend yield per share	**0.00%**	0.00%	0.00%	0.00%
Expected life in years	**6.64**	6.40	6.14	5.73
Expected volatility	**54.80%**	42.85%	39.44%	37.05%
Risk-free interest rate	**0.59%**	0.87%	2.53%	2.67%
Grant date fair value per share of stock option award	**$15.79**	$ 8.42	$11.29	$16.38

Prior to February 2022, we had not declared a dividend since 2014. The expected life in years is based on historical exercise data of options previously granted by us. Expected volatility is based on the historical volatility of our common stock and the historical volatility of certain other similar public companies. The risk-free interest rate is based on U.S. Treasury bill rates for the expected life of the option.

The following table shows a summary of the status and activity of stock options for the year ended December 31, 2021:

	Options	*Weighted Average Exercise Price per Option*	*Weighted Average Remaining Contractual Term (in years)*	*Aggregate Intrinsic Value (in millions)*
Outstanding at December 31, 2020	1,120,254	$26.89		
Granted	90,879	$29.84		
Exercised	(71,785)	$17.74		
Expired	(71,346)	$40.66		
Forfeited	(13,836)	$22.12		
Outstanding at December 31, 2021	**1,054,166**	**$26.89**	**4.99**	**$7.7**
Exercisable at December 31, 2021	**760,208**	**$27.38**	**3.91**	**$5.8**

Stock Compensation Expense

Total stock-based compensation expense recognized under our LTIP and employee stock purchase plan for the three years ended December 31, 2021 is as follows:

	Year Ended December 31,		
	2021	*2020*	*2019*
(Dollars in millions)			
Stock-based compensation expense recognized:			
Selling, general and administrative expenses	**$13.0**	$11.3	$12.1
Less related income tax benefit	**3.7**	2.2	0.2
Decrease in net income attributable to Koppers	**$ 9.3**	$ 9.1	$11.9
Intrinsic value of exercised stock options	**$ 2.2**	$ 0.0	$ 1.1
Cash received from the exercise of stock options	**$ 2.3**	$ 0.0	$ 2.9

As of December 31, 2021, total future compensation expense related to non-vested stock-based compensation arrangements totaled $16.2 million and the weighted-average period over which this expense is expected to be recognized is approximately 25 months.

9. Segment Information

We have three reportable segments: Railroad and Utility Products and Services, Performance Chemicals and Carbon Materials and Chemicals. Our reportable segments contain multiple aggregated business units since management believes the long-term financial performance of these business units is affected by similar economic conditions. The reportable segments are each managed separately because they manufacture and distribute distinct products with different production processes.

Our RUPS segment sells treated and untreated wood products, manufactured products and services primarily to the railroad and public utility markets. Railroad products and services include procuring and treating items such as crossties, switch ties and various types of lumber used for railroad bridges and crossings and the manufacture of rail joint bars. Utility products include transmission and distribution poles and pilings. The segment also operates a railroad services business that conducts engineering, design, repair and inspection services for railroad bridges, a business related to the recovery of used crossties and utility poles and a business related to the inspection of utility poles.

Our PC segment develops, manufactures, and markets wood preservation chemicals and wood treatment technologies and services a diverse range of end-markets including infrastructure, residential and commercial construction, and agriculture.

Our CMC segment is primarily a manufacturer of creosote, carbon pitch, naphthalene, phthalic anhydride and carbon black feedstock. Creosote is used in the treatment of wood and carbon black feedstock is used in the production of carbon black. Carbon pitch is used in the production of aluminum and steel in electric arc furnaces. Naphthalene is used for the production of phthalic anhydride and as a surfactant in the production of concrete. Phthalic anhydride is used in the production of plasticizers, polyester resins and alkyd paints.

During 2021, we determined that our primary measure of segment profitability is adjusted earnings before interest, income taxes, depreciation, amortization and certain non-cash and/or non-recurring items that do not contribute directly to management's evaluation of our operating results (as defined by us, "adjusted EBITDA"). These items include impairment, restructuring and plant closure costs, mark-to-market commodity hedging, gain on sale of assets and non-cash LIFO effects. This presentation is consistent with how our chief operating decision maker evaluates the results of operations and makes strategic decisions about the business. In addition, adjusted EBITDA is the primary measure used to determine the level of achievement of management's short-term incentive goals and related payout. For these reasons, we believe that adjusted EBITDA represents the most relevant measure of segment profit and loss.

Adjusted EBITDA is reconciled to net income, the most directly comparable financial measure determined and reported in accordance with U.S. GAAP. The accounting policies of the reportable segments are the same as those described in the summary of significant accounting policies. Intersegment transactions are eliminated in consolidation.

The following table sets forth certain sales and operating data, for our segments for the periods indicated:

	Year Ended December 31,		
	2021	2020	2019
(Dollars in millions)			
Revenues from external customers:			
Railroad and Utility Products and Services	$ 729.9	$ 759.1	$ 733.5
Performance Chemicals	503.3	526.3	448.3
Carbon Materials and Chemicals[(a)]	445.4	383.7	455.2
Total	$1,678.6	$1,669.1	$1,637.0
Intersegment revenues:			
Performance Chemicals	$ 15.9	$ 13.7	$ 12.6
Carbon Materials and Chemicals	75.3	78.7	75.2
Total	$ 91.2	$ 92.4	$ 87.8
Depreciation and amortization expense:			
Railroad and Utility Products and Services	$ 22.3	$ 20.1	$ 19.4
Performance Chemicals	17.9	18.1	18.3
Carbon Materials and Chemicals[(b)]	17.5	15.9	13.7
Total	$ 57.7	$ 54.1	$ 51.4
Adjusted EBITDA:			
Railroad and Utility Products and Services	$ 45.4	$ 65.3	$ 60.2
Performance Chemicals	101.8	100.7	68.6
Carbon Materials and Chemicals	76.3	45.0	73.5
Corporate	0.0	0.0	(1.2)
Total	$ 223.5	$ 211.0	$ 201.1
Capital expenditures:			
Railroad and Utility Products and Services	$ 62.0	$ 31.3	$ 11.6
Performance Chemicals	17.7	12.1	9.7
Carbon Materials and Chemicals[(c)]	42.9	24.8	15.5
Corporate	2.4	1.6	0.4
Total	$ 125.0	$ 69.8	$ 37.2

(a) Revenue excludes KJCC discontinued operations of $31.6 million and $135.8 million for the years ended December 31, 2020 and 2019, respectively.
(b) Depreciation and amortization expense excludes KJCC discontinued operations of $0.6 million and $3.7 million for the years ended December 31, 2020 and 2019, respectively.
(c) Capital expenditures includes KJCC discontinued operations of $0.6 million and $3.9 million for the years ended December 31, 2020 and 2019, respectively.

The following table reconciles net income to adjusted EBITDA on a consolidated basis as calculated by us for the years indicated below:

	Year Ended December 31,		
	2021	2020	2019
(amounts in millions)			
Net income	$ 84.9	$121.0	$ 67.4
Interest expense	40.5	48.9	61.7
Depreciation and amortization	57.7	54.1	51.4
Depreciation in impairment and restructuring charges	0.7	2.0	3.4
Income taxes	34.5	21.0	0.0
Discontinued operations	0.2	(31.9)	(3.7)
Sub-total	218.5	215.1	180.2
Adjustments to arrive at adjusted EBITDA:			
Impairment, restructuring and plant closure costs[1]	4.2	15.7	20.4
(Gain) on sale of assets	(31.2)	0.0	0.0
LIFO expense (benefit)	28.2	(13.7)	4.5
Mark-to-market commodity hedging losses (gains)	3.8	(9.2)	(4.0)
Pension settlement	0.0	0.1	0.0
Discretionary incentive[2]	0.0	3.0	0.0
Total adjustments	5.0	(4.1)	20.9
Adjusted EBITDA	$223.5	$211.0	$201.1

(1) Includes costs associated with restructuring, sales and closures of certain RUPS and CMC facilities as described in Note 4 – "Plant Closures and Divestitures".
(2) Represents a one-time employee incentive associated with the sale of KJCC as described in Note 5 – "Discontinued Operations".

The following table sets forth tangible and intangible assets allocated to each of our segments as of the dates indicated:

	December 31,	
	2021	2020
(Dollars in millions)		
Segment assets:		
Railroad and Utility Products and Services	$ 594.1	$ 583.1
Performance Chemicals	586.9	536.1
Carbon Materials and Chemicals	447.1	424.2
Segment assets	1,628.1	1,543.4
Cash and cash equivalents	0.0	0.4
Income tax receivable	8.6	1.2
Prepaid insurance and other assets	7.9	7.0
Deferred taxes	0.0	28.8
Property, plant and equipment, net	6.6	5.9
Operating lease right-of-use assets	10.7	11.9
Total	$1,661.9	$1,598.6
Goodwill:		
Railroad and Utility Products and Services	$ 120.9	$ 121.1
Performance Chemicals	175.1	176.7
Total	$ 296.0	$ 297.8

Revenues and Long-lived Assets by Geographic Area

(Dollars in millions)	*Year*	*Revenue*	*Long-lived assets*
United States	**2021**	**$1,134.2**	**$ 857.3**
	2020	1,170.1	832.0
	2019	1,141.2	796.0
Australasia	**2021**	**230.6**	**78.9**
	2020	194.3	82.0
	2019	199.6	76.6
Europe	**2021**	**195.8**	**63.3**
	2020	162.3	83.2
	2019	177.5	70.2
Other countries	**2021**	**118.0**	**19.3**
	2020	142.4	18.5
	2019	118.7	19.3
Total[(a)]	**2021**	**$1,678.6**	**$1,018.8**
	2020	$1,669.1	$1,015.7
	2019	$1,637.0	$ 962.1

(a) Revenue excludes KJCC discontinued operations of $31.6 million and $135.8 million for the years ended December 31, 2020 and 2019, respectively. Long-lived assets exclude $59.3 million of assets of discontinued operations held for sale related to our KJCC business as of December 31, 2019.

Revenues by geographic area in the above table are attributed by the destination country of the sale. Revenues from non-U.S. countries totaled $544.4 million in 2021, $499.0 million in 2020 and $495.8 million in 2019.

Segment Revenues for Significant Product Lines

	Year Ended December 31,		
	2021	2020	2019
(Dollars in millions)			
Railroad and Utility Products and Services:			
Railroad treated products	$ 414.4	$ 405.1	$ 419.6
Utility poles	228.0	241.7	222.0
Railroad infrastructure services	56.0	63.5	36.5
Rail joints	22.7	20.3	26.8
Other products	8.8	28.6	28.6
	729.9	759.1	733.5
Performance Chemicals:			
Wood preservative products	489.1	510.7	418.8
Other products	14.2	15.6	29.5
	503.3	526.3	448.3
Carbon Materials and Chemicals:			
Pitch and related products	260.3	230.9	272.4
Phthalic anhydride and other chemicals	75.6	66.4	77.9
Creosote and distillates	52.1	40.0	46.3
Naphthalene	27.1	19.7	24.9
Other products	30.3	26.7	33.7
	445.4	383.7	455.2
Total[(a)]	$1,678.6	$1,669.1	$1,637.0

(a) Revenue excludes KJCC discontinued operations of $31.6 million and $135.8 million for the years ended December 31, 2020 and 2019, respectively.

10. Income Taxes

Income Tax Provision

Components of our income tax provision are as follows:

	Year Ended December 31,		
	2021	2020	2019
(Dollars in millions)			
Current:			
Federal	$ (1.5)	$ 0.8	$ (3.5)
State	0.9	0.7	0.5
Foreign	18.2	11.1	14.4
Total current tax provision	17.6	12.6	11.4
Deferred:			
Federal	10.6	6.1	3.1
State	1.1	1.6	0.4
Foreign	5.2	0.7	(14.9)
Total deferred tax provision (benefit)	16.9	8.4	(11.4)
Total income tax provision	$34.5	$21.0	$ 0.0

Income before income taxes from foreign operations for 2021, 2020 and 2019 was $71.8 million, $52.4 million and $69.9 million, respectively.

The provision for income taxes is reconciled with the federal statutory income tax rate as follows:

	Year Ended December 31,		
	2021	*2020*	*2019*
Federal income tax rate	**21.0%**	21.0%	21.0%
Foreign earnings taxed at different rates	**4.3**	2.9	(0.2)
State income taxes, net of federal tax benefit	**2.1**	2.2	1.1
Valuation allowance adjustments	**1.9**	(12.1)	9.1
GILTI inclusion, net of foreign tax credits	**0.2**	4.0	1.4
Intra-entity transfer of intangible assets	**0.0**	0.0	(23.4)
Deferred tax adjustments	**(0.2)**	(2.2)	0.0
Change in tax contingency reserves	**(1.1)**	(0.2)	(7.0)
Other	**0.6**	3.5	(2.0)
	28.8%	19.1%	0.0%

For each of the three years ended December 31, 2021, 2020 and 2019, we have recorded valuation allowance adjustments related to the value of certain deferred tax assets. In 2021, we recorded a $3.3 million valuation allowance against net deferred tax assets of our United Kingdom entities as a result of a recent history of pre-tax losses and the reversal of a deferred tax liability associated with a defined benefit pension plan.

In 2020 and 2019, the valuation allowance adjustment was impacted by the interest expense deduction in the United States. As originally enacted, the interest expense deduction is limited to 30 percent of adjusted taxable income as defined under the tax regulations and any such limitation that is disallowed in a year can be carried forward to future years. As of December 31, 2019, we had recorded a cumulative valuation allowance totaling $13.3 million for the disallowed interest expense deduction due to the uncertainly of when we could utilize the carryforward amounts. During 2020, new regulations were enacted and these new regulations impacted our interest expense limitation in our 2018 and 2019 U.S. tax returns. In March 2020, the Coronavirus Aid, Relief, and Economic Security Act (the "CARES Act") was enacted and a provision of the CARES Act increased the allowable business interest expense deduction to 50 percent of adjusted taxable income retroactively to January 1, 2019. In July 2020, the Internal Revenue Service released regulations that were retroactive to January 1, 2018 and favorably impacted our calculation of adjusted taxable income. After application of these new regulations, the limitation of our interest expense deduction was significantly reduced when compared to the same calculations under the previous regulations. Due to these changes, in the year ended December 31, 2020 we recorded an income tax benefit of $13.3 million, to adjust a previously recorded valuation allowance for disallowed interest expense deductions that are eligible for carry-forward as we determined that we would be able to fully utilize these disallowed interest expense deductions. Effective January 1, 2021, the limitation on the deduction was restored to 30 percent.

In the year ended December 31, 2019, we recognized a one-time deferred tax benefit of $14.9 million upon the completion of a Dutch legal entity restructuring project. This restructuring resulted in an intra-entity transfer of certain intangible assets and intellectual property, which under Dutch tax law were valued at fair value and are amortized over a period of 9 to 14 years.

Taxes Excluded from Net Income Attributable to Koppers

The amount of deferred income tax (benefit) expense included in comprehensive income but excluded from net income attributable to Koppers relating primarily to adjustments to copper swap contracts is ($0.5) million, $12.6 million, and $4.1 million for the years ended December 31, 2021, 2020 and 2019, respectively.

The amount of deferred income tax (benefit) expense included in comprehensive income but excluded from net income attributable to Koppers relating to adjustments to reflect the unfunded status of employee post-retirement benefit plans is $(1.3) million, $(0.4) million, and $0.7 million for the years ended December 31, 2021, 2020 and 2019, respectively.

Deferred Tax Assets and Liabilities

Deferred income taxes reflect the net tax effects of differences between the carrying amounts of assets and liabilities for financial reporting purposes and for income tax purposes.

Significant components of our deferred tax assets and liabilities are as follows:

	Year Ended December 31,	
	2021	2020
(Dollars in millions)		
Deferred tax assets:		
Federal and state tax loss carryforwards, expiring from 2021 to 2040	$ 24.4	$ 18.3
Tax credits	17.5	20.0
Pension and other postretirement benefits obligations	9.6	9.7
Reserves, including insurance and environmental	9.0	11.7
Foreign tax loss carryforwards	7.4	7.5
Accrued employee compensation	7.1	6.6
Inventory	5.9	6.2
Asset retirement obligations	4.5	6.8
Other	3.3	3.1
Valuation allowance	(44.5)	(44.6)
Total deferred tax assets	44.2	45.3
Deferred tax liabilities:		
Tax over book depreciation and amortization	44.0	28.1
Gain on derivative contracts	14.3	16.3
Other	4.3	3.8
Total deferred tax liabilities	62.6	48.2
Net deferred tax liabilities	$(18.4)	$ (2.9)

As a result of the Tax Act and the one-time mandatory transition tax, all previously unremitted earnings for which a U.S. deferred tax liability had not been accrued have now been subject to U.S. tax. As of December 31, 2021, there was approximately $504 million of such unremitted earnings. Substantially all unremitted earnings will remain indefinitely invested in our foreign subsidiaries for the foreseeable future unless we can remit any earnings as a dividend in a tax-free manner. In the event any earnings are remitted as a dividend with a tax cost due to currency gains or losses, state taxes, or foreign withholding taxes, we estimate that we will not incur significant additional taxes on those potential remittances.

Management evaluated the ability to realize the deferred tax assets that are related to our domestic operations, particularly in light of our domestic financial reporting losses. In assessing the need for a valuation allowance, management considered all positive and negative evidence related to the realization of our net deferred tax assets. We believe that it will be in a taxable income position in the foreseeable future and it will have sufficient taxable income to utilize deferred tax assets related to its domestic operations.

A valuation allowance is necessary when it is more likely than not that a deferred tax asset will not be realized. Certain deferred tax assets reflected above are not expected to be realized and a valuation allowance has been provided for them.

Valuation allowances are recorded to offset the following deferred tax assets:

	December 31,	
	2021	2020
State temporary differences, net operating losses and tax credits	$19.2	$19.1
Federal foreign tax credits	16.1	18.8
Foreign temporary differences, net operating losses and capital losses	9.1	6.7
Federal temporary differences	0.1	0.0
Total valuation allowances	$44.5	$44.6

Unrecognized Tax Benefits

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

	December 31,		
	2021	*2020*	*2019*
(Dollars in millions)			
Balance at beginning of year	$ 2.5	$ 2.1	$ 7.0
Additions based on tax provisions related to the current year	0.1	0.2	0.1
Additions for tax provisions of prior years	0.0	0.5	0.0
Reductions resulting from a lapse in the statute of limitations	(1.1)	(0.3)	(0.3)
Reductions of tax provisions of prior years	0.0	0.0	(1.8)
Reductions resulting from audit closures	0.0	0.0	(2.9)
Balance at end of year	$ 1.5	$ 2.5	$ 2.1

As of December 31, 2021 and 2020, the total amount of unrecognized tax benefits that, if recognized, would affect the effective tax rate, was approximately $1.5 million and $2.5 million, respectively.

We recognize interest expense and any related penalties from unrecognized tax benefits in income tax expense. For the year ended December 31, 2021, we recognized ($0.4) million in interest and penalties. As of December 31, 2021 and 2020, we had accrued interest and penalties of approximately $0.4 million and $0.8 million, respectively.

We believe that it is reasonably possible that the amount of unrecognized tax benefits will decrease in the next twelve months by approximately $0.2 million due to the expirations of certain limitations and potential audit resolutions. We do not anticipate significant increases to the amount of unrecognized tax benefits within the next twelve months.

Koppers Holdings and its subsidiaries file income tax returns in the U.S. federal jurisdiction, individual U.S. state jurisdictions and non-U.S. jurisdictions. With few exceptions, we are no longer subject to U.S. federal, U.S. state, or non-U.S. income tax examinations by tax authorities for years before 2016.

11. Inventories

Inventories as of December 31, 2021 and 2020 were as follows:

	December 31,	
	2021	*2020*
(Dollars in millions)		
Raw materials	$266.8	$233.7
Work in process	12.6	12.4
Finished goods	112.1	99.3
	391.5	345.4
Less revaluation to LIFO	77.7	49.6
Inventories, net	$313.8	$295.8

12. Property, Plant and Equipment

Property, plant and equipment as of December 31, 2021 and 2020 were as follows:

	December 31,	
	2021	2020
(Dollars in millions)		
Land	$ 15.2	$ 16.7
Buildings	75.8	75.0
Machinery and equipment	836.8	812.1
	927.8	$903.8
Less accumulated depreciation	438.7	494.7
Property, plant and equipment, net	$489.1	$409.1

Depreciation expense for the years ended December 31, 2021, 2020 and 2019 amounted to $39.4 million, $33.7 million and $30.7 million, respectively. Depreciation expense excludes KJCC discontinued operations of $0.6 million and $3.7 million for the years ended December 31, 2020 and 2019, respectively.

Impairments – We did not incur impairment charges in 2021, 2020 or 2019.

13. Goodwill and Other Identifiable Intangible Assets

The change in the carrying amount of goodwill attributable to each reporting unit for the years ended December 31, 2021 and December 31, 2020 was as follows:

	Performance Chemicals	Railroad Products and Services	Utility Products	Total
(Dollars in millions)				
Balance at December 31, 2019	$175.4	$41.0	$79.7	$296.1
Currency translation	1.3	0.1	0.3	1.7
Balance at December 31, 2020	$176.7	$41.1	$80.0	$297.8
Currency translation	(1.6)	0.0	(0.2)	(1.8)
Balance at December 31, 2021	$175.1	$41.1	$79.8	$296.0

Goodwill represents the excess of the cost over the fair value of acquired identifiable tangible and intangible assets and liabilities assumed from businesses acquired. Goodwill is tested for impairment at the reporting unit level annually in the fourth quarter or more frequently if a change in circumstances or the occurrence of events indicates that potential impairment exists, using discounted cash flows. We performed a quantitative assessment of goodwill at the reporting unit level, utilizing a combination of an income approach, using a discounted cash flow methodology, and a market approach, by comparing the estimated fair value calculations of each reporting unit with its net book value. The discounted cash flow calculations are dependent on several subjective factors including the timing of future forecasted cash flows, including forecasted future growth rates such as revenue and the discount rate. We determined that the estimated fair values exceeded the carrying values of all the reporting units, and accordingly, there was no impairment of goodwill incurred for each of the three years ended December 31, 2021.

Our identifiable intangible assets are being amortized over their estimated useful lives and are summarized below:

			December 31,					
			2021			2020		
	Estimated life in years	Weighted average remaining life in years	Gross Carrying Amount	Accumulated Amortization	Net	Gross Carrying Amount	Accumulated Amortization	Net
(Dollars in millions)								
Customer contracts	9 to 18	9.8	$226.9	$ 97.6	$129.3	$228.5	$ 84.7	$143.8
Technology	4 to 12	4.6	26.5	25.9	0.6	26.8	23.6	3.2
Trademarks	2 to 17	10.4	7.6	6.4	1.2	7.9	5.8	2.1
Supply contracts	10	0.0	2.4	2.4	0.0	2.6	2.6	0.0
Non-compete agreements	12	2.8	1.7	1.3	0.4	1.7	1.0	0.7
Favorable lease agreements	0	0.0	0.0	0.0	0.0	0.8	0.8	0.0
Total		9.7	$265.1	$133.6	$131.5	$268.3	$118.5	$149.8

In 2021, the gross carrying value of identifiable intangible assets decreased by a net $3.2 million, primarily due to foreign exchange translation. Total amortization expense related to these identifiable intangible assets was $18.3 million, $19.8 million and $20.7 million for the years ended December 31, 2021, 2020 and 2019, respectively. Estimated amortization expense for the next five years is summarized below:

	Estimated annual amortization
(Dollars in millions)	
2022	$14.9
2023	14.6
2024	14.3
2025	13.8
2026	12.5

14. Pensions and Post-Retirement Benefit Plans

We maintain a number of defined benefit and defined contribution plans to provide retirement benefits for employees in the United States, as well as employees outside the United States. These plans are maintained and contributions are made in accordance with the Employee Retirement Income Security Act of 1974 ("ERISA"), local statutory law or as determined by the board of directors. The defined benefit pension plans generally provide benefits based upon years of service and compensation. Pension plans are funded except for three domestic non-qualified defined benefit pension plans for certain key executives.

In the United States, all qualified and two of the non-qualified defined benefit pension plans for salaried and hourly employees have been closed to new participants and have been frozen. Accordingly, these pension plans no longer accrue additional years of service or recognize future increases in compensation for benefit purposes.

The defined contribution plans generally provide retirement assets to employee participants based upon employer and employee contributions to the participant's individual investment account. We also provide retiree medical insurance coverage to certain U.S. employees and a life insurance benefit to most U.S. employees. For salaried employees, the retiree medical and retiree insurance plans have been closed to new participants.

Expense related to defined contribution plans totaled $9.1 million, $8.4 million and $8.3 million for the years ended December 31, 2021, 2020 and 2019, respectively.

Net periodic pension costs for 2021, 2020 and 2019 were as follows:

	Year Ended December 31,					
	Pension Benefits			Other Benefits		
	2021	2020	2019	2021	2020	2019
(Dollars in millions)						
Service cost	$ 1.5	$ 1.4	$ 1.5	$0.1	$0.1	$0.1
Interest cost	5.2	6.4	7.8	0.3	0.3	0.4
Expected return on plan assets	(7.4)	(7.9)	(7.9)	0.0	0.0	0.0
Amortization of net loss (gain)	1.4	1.7	1.6	0.0	(0.2)	(0.2)
Settlements and curtailments	0.0	0.1	0.0	0.0	0.0	0.0
Net periodic benefit cost	$ 0.7	$ 1.7	$ 3.0	$0.4	$0.2	$0.3

The change in the funded status of the pension and postretirement plans as of December 31, 2021 and December 31, 2020 is as follows:

	Year Ended December 31,			
	Pension Benefits		Other Benefits	
	2021	2020	2021	2020
(Dollars in millions)				
Change in benefit obligation:				
Benefit obligation at beginning of year	$233.3	$219.8	$10.5	$ 9.2
Service cost	1.5	1.4	0.1	0.1
Interest cost	5.2	6.4	0.3	0.3
Actuarial (gains) losses	(9.0)	17.3	(0.6)	1.3
Settlements	0.0	(2.2)	0.0	0.0
Currency translation	(0.6)	2.6	0.0	0.0
Benefits paid	(10.8)	(12.0)	(0.5)	(0.4)
Benefit obligation at end of year	219.6	233.3	9.8	10.5
Change in plan assets:				
Fair value of plan assets at beginning of year	208.0	191.5	0.0	0.0
Actual return on plan assets	(8.9)	23.6	0.0	0.0
Employer contribution	2.3	3.9	0.5	0.4
Settlements	0.0	(2.2)	0.0	0.0
Currency translation	(0.6)	3.2	0.0	0.0
Benefits paid	(10.8)	(12.0)	(0.5)	(0.4)
Fair value of plan assets at end of year	190.0	208.0	0.0	0.0
Funded status of the plan	$ (29.6)	$ (25.3)	$ (9.8)	$(10.5)

In 2021, the net actuarial gain of $9.0 million is due principally to the increase of 38 basis points in the discount rate used to measure the benefit obligation as of December 31, 2021 compared to the prior year. As discussed further in the following paragraph, the actual return on plan assets was negative in 2021 primarily due to the purchase of a bulk annuity insurance policy in February 2021 related to our defined benefit pension plan in the United Kingdom. As of December 31, 2021, the fair value of the bulk annuity insurance policy of $52.3 million is based on the calculated pension benefit obligation and is classified as Level 3 within the fair value hierarchy.

During 2021, we entered into a buy-in bulk annuity insurance policy in exchange for a premium payment of $67.8 million, which is subject to adjustment as a result of subsequent data cleansing activities. Under the terms of this buy-in insurance policy, the insurer is liable to pay the benefits of our defined benefit pension plan in the United Kingdom, but the plan still retains full legal responsibility to pay the benefits to the members of the plan using the insurance payments. The buy-in policy will be treated as a plan asset going forward until such time as the buy-in policy is converted to a buy-out policy, which is when

individual insurance policies will be assigned to each member of the plan and the plan will no longer have legal responsibility to pay the benefits to the members. The data cleansing effort is expected to be completed in late 2022 or early 2023 at which time the pension obligation will be irrevocably settled. Upon that event, we will recognize a pre-tax pension settlement loss of approximately $22 million. This pension plan has a benefit obligation of $54.2 million and plan assets of $52.5 million as of December 31, 2021.

Plan Data

	Year Ended December 31,			
	Pension Benefits		*Other Benefits*	
	2021	*2020*	*2021*	*2020*
(Dollars in millions)				
Amounts recognized in the balance sheet consist of:				
Noncurrent assets	**$ 0.8**	$ 12.1	**$0.0**	$0.0
Current liabilities	**1.0**	1.0	**0.6**	0.7
Noncurrent liabilities	**29.4**	36.4	**9.2**	9.8
Pension plans with projected benefit obligations in excess of plan assets:				
Benefit obligation	**$215.7**	$172.5		
Fair value of plan assets	**185.3**	135.0		
Pension plans with accumulated benefit obligations in excess of plan assets:				
Accumulated benefit obligation	**$215.5**	$172.2		
Fair value of plan assets	**185.3**	135.0		

The measurement date for all pension and postretirement assets and obligations is December 31 for each respective year.

The accumulated benefit obligation for all defined benefit pension plans as of December 31, 2021 and 2020 was $219.1 million and $232.5 million, respectively.

Expected Contributions for the 2022 Fiscal Year

Our expected contributions for 2022 are estimated to be $1.0 million for pension plans and $0.6 million for other benefit plans.

Projected Benefit Payments

Benefit payments for pension benefits, which are primarily funded by the pension plan assets, and other benefits, which are funded by general corporate assets, are expected to be paid as follows:

	Pension Benefits	*Other Benefits*
(Dollars in millions)		
2022	$11.7	$0.6
2023	11.5	0.6
2024	11.5	0.6
2025	12.0	0.6
2026	12.6	0.6
Next five years	59.5	3.0

Weighted-Average Assumptions

	December 31,			
	Pension Benefits		Other Benefits	
	2021	2020	2021	2020
Discount rate	2.67%	2.29%	2.97%	2.66%
Expected return on plan assets	3.91	3.67		
Rate of compensation increase	3.00	3.41		
Initial medical trend rate			5.40	5.40

Basis for the Selection of the Long-Term Rate of Return on Assets

The long-term rate of return on assets assumption was determined by using the plan's asset allocation as described in the plan's investment policy and modeling a distribution of compound average returns over a time horizon. The model uses asset class return, variance, and correlation assumptions to produce the expected return. The return assumptions used forward looking gross returns influenced by the current bond yields, corporate bond spreads and equity risk premiums based on current market conditions.

In general, the long-term rate of return is the sum of the portion of total assets in each asset class multiplied by the expected return for that class, adjusted for expected expenses to be paid from the assets. To develop the expected long-term rate of return on assets assumption, we considered the historical returns and the future expectations for returns for each asset class, as well as the target asset allocation of the pension portfolio.

Investment Strategy

The weighted average asset allocation for our pension plans as of December 31 by asset category is as follows:

	December 31,	
	2021	2020
Debt securities	49%	70%
Equity securities	21	21
Other	30	9
	100%	100%

Our investment strategy for our pension plans is to maintain an adequate level of diversification, to reduce interest rate and market risk and to provide adequate liquidity to meet immediate and future benefit payment requirements. Our overall investment strategy is to achieve a mix of growth seeking assets, principally U.S. and international public company equity securities and income generating assets, principally debt securities, real estate and cash. For all pension plans not engaged in a buy-out process, we target an allocation of 30 percent to 40 percent growth seeking assets and 60 percent to 70 percent income generating assets on an overall basis. We utilize investment managers to assist in identifying and monitoring investments that meet these allocation criteria. With respect to the U.S. defined benefit plan, we have implemented a strategy of reallocating pension assets from growth seeking assets to income generating assets as certain funded status levels are reached.

All assets are invested in pooled or commingled investment vehicles with the exception of the insurance annuity contract. Our interest in these investment vehicles is expressed as a unit of account with a value per unit that is the result of the accumulated values of the underlying investments. Equity securities held within these investment vehicles are typically priced on a daily basis using the closing market price from the exchange through which the security is traded. Debt securities held within these investment vehicles are typically priced on a daily basis by independent pricing services. Certain investments are valued using the net asset value ("NAV") practical expedient and have not been categorized in the fair value hierarchy but are included to reconcile the fair value hierarchy to the total fair value of plan assets. The fair value of real estate investments is either priced through a listing on an exchange or are subject to periodic appraisals.

The following tables set forth by level, our pension plan assets at fair value, within the fair value hierarchy, as of December 31, 2021 and December 31, 2020:

	December 31, 2021			
	Quoted prices in active markets for identical assets (Level 1)	*Significant observable inputs (Level 2)*	*Significant unobservable inputs (Level 3)*	*Total*
(Dollars in millions)				
U.S. equity securities	$ 0.0	$ 7.9	$ 0.0	$ 7.9
International equity securities	0.0	17.9	0.0	17.9
U.S. debt securities	0.0	64.9	0.0	64.9
International debt securities	0.0	3.6	0.0	3.6
Insurance annuity contract and other investments	0.0	0.6	52.3	52.9
Cash and cash equivalents	0.0	2.1	0.0	2.1
	$ 0.0	$97.0	$52.3	$149.3
Investments measured at NAV[(a)]				40.7
Total assets at fair value				$190.0

(a) The fair value amounts presented in the table above are intended to permit reconciliations of the fair value hierarchy to the total plan assets.

	December 31, 2020			
	Quoted prices in active markets for identical assets (Level 1)	*Significant observable inputs (Level 2)*	*Significant unobservable inputs (Level 3)*	*Total*
(Dollars in millions)				
U.S. equity securities	$ 0.0	$ 8.1	$ 0.0	$ 8.1
International equity securities	0.0	19.3	0.0	19.3
U.S. debt securities	0.0	68.6	0.0	68.6
International debt securities	0.0	62.7	0.0	62.7
Other investments	0.0	0.6	0.0	0.6
Cash and cash equivalents	0.0	11.2	0.0	11.2
	$ 0.0	$170.5	$ 0.0	$170.5
Investments measured at NAV[(a)]				37.5
Total assets at fair value				$208.0

(a) The fair value amounts presented in the table above are intended to permit reconciliations of the fair value hierarchy to the total plan assets.

Incentive Plan

We have short-term management incentive plans that pay cash bonuses if certain Company performance goals are met. Expenses incurred for these plans was $14.9 million in 2021, $17.3 million in 2020 and $12.2 million in 2019.

15. Debt

Debt as of December 31, 2021 and 2020 was as follows:

	Weighted Average Interest Rate	*Maturity*	*December 31, 2021*	*December 31, 2020*
Term Loan	2.38%	2024	$ 2.0	$ 12.2
Revolving Credit Facility	2.38%	2024	287.1	272.0
Senior Notes due 2025	6.00%	2025	500.0	500.0
Total debt			789.1	784.2
Less short-term debt and current maturities of long-term debt			2.0	10.1
Less unamortized debt issuance costs			5.6	8.3
Long-term debt			$781.5	$765.8

Credit Facility

The Company maintains a $600.0 million senior secured revolving credit facility and a $100.0 million secured term loan facility (collectively, the "Credit Facility"), as amended. The secured term loan has a quarterly amortization of $2.5 million and the interest rate on the Credit Facility is variable and is based on LIBOR.

Borrowings under the Credit Facility are secured by a first priority lien on substantially all of the assets of Koppers Inc., Koppers Holdings Inc. and their material domestic subsidiaries. The Credit Facility contains certain covenants for Koppers Inc. and its restricted subsidiaries that limit capital expenditures, additional indebtedness, liens, dividends, investments or acquisitions. In addition, such covenants give rise to events of default upon the failure by Koppers Inc. and its restricted subsidiaries to meet certain financial ratios.

As of December 31, 2021, we had $305.2 million of unused revolving credit availability for working capital purposes after restrictions from certain letter of credit commitments and other covenants. As of December 31, 2021, $7.8 million of commitments were utilized by outstanding letters of credit.

Senior Notes due 2025

The 2025 Notes are senior obligations of Koppers Inc., are unsecured and are guaranteed by Koppers Holdings Inc. and certain of Koppers Inc.'s domestic subsidiaries. The 2025 Notes pay interest semi-annually in arrears on February 15 and August 15 and will mature on February 15, 2025 unless earlier redeemed or repurchased. We were entitled to redeem all or a portion of the 2025 Senior Notes at a redemption price of 104.5 percent of principal value, which declines to a redemption price of 101.5 percent on or after February 15, 2022 until the redemption price is equivalent to the principal value on April 15, 2023.

The indenture governing the 2025 Notes includes customary covenants that restrict, among other things, the ability of Koppers Inc. and its restricted subsidiaries to incur additional debt, pay dividends or make certain other restricted payments, incur liens, merge or sell all or substantially all of the assets of Koppers Inc. or its subsidiaries or enter into various transactions with affiliates.

Debt Maturities and Deferred Financing Costs

At December 31, 2021 the aggregate debt maturities for the next five years are as follows:

(Dollars in millions)	
2022	$ 2.0
2023	0.0
2024	287.1
2025	500.0
2026	0.0
Total debt	$789.1

Unamortized debt issuance costs (net of accumulated amortization of $12.1 million and $9.4 million at December 31, 2021 and 2020, respectively) were $5.6 million and $8.3 million at December 31, 2021 and 2020, respectively, and are included as a deduction from the carrying amount of long-term debt.

16. Leases

We recognize lease obligations and associated right-of-use assets for existing non-cancelable leases. We have non-cancelable operating leases primarily associated with railcars, office and manufacturing facilities, storage tanks, ships, production equipment and vehicles. Many of our leases include both lease (e.g., fixed rent) and non-lease components (e.g., maintenance and services). For certain asset classes such as railcars, storage tanks and ships, we have separated the lease and non-lease components based on the estimated stand-alone price for each component. For the remaining asset classes, we have elected to account for these components as a single lease component. In addition, we exclude leases expiring within twelve months from balance sheet recognition.

Many of our leases include one or more options to renew. We evaluate renewal options at the lease commencement date and regularly thereafter to determine if we are reasonably certain to exercise the option, in which case we include the renewal period in our lease term. As most of our leases do not provide an implicit rate, we use our incremental borrowing rate based on information available to determine the present value of the lease payments.

Lease expense for operating leases is recognized on a straight-line basis over the lease term. Variable lease expense is recognized in the period in which the obligation for those payments is incurred. Operating lease costs were $30.2 million and $31.2 million and variable lease costs were $3.3 million and $3.5 million during the years ended December 31, 2021 and 2020, respectively.

The following table presents information about the amount and timing of cash flows arising from our operating leases as of December 31, 2021:

(Dollars in millions)	
2022	$ 28.0
2023	21.7
2024	17.7
2025	14.4
2026	10.4
Thereafter	25.0
Total lease payments	$117.2
Less: Interest	(25.6)
Present value of lease liabilities	$ 91.6

Supplemental consolidated balance sheet information related to leases is as follows:

	December 31,	
	2021	*2020*
(Dollars in millions)		
Operating leases:		
Operating lease right-of-use assets	**$91.2**	$102.5
Current operating lease liabilities	**$21.3**	$ 21.2
Operating lease liabilities	**70.3**	81.3
Total operating lease liabilities	**$91.6**	$102.5
Weighted average remaining lease term, in years	**5.8**	6.4
Weighted average discount rate	**7.4%**	7.5%

17. Derivative Financial Instruments

We utilize derivative instruments to manage exposures to risks that have been identified and measured and are capable of being controlled. The primary risks that we manage by using derivative instruments are commodity price risk associated with copper and foreign currency exchange risk associated with a number of currencies, principally the U.S. dollar, the Euro and British pounds. Swap contracts on copper are used to manage the price risk associated with forecasted purchases of materials used in our manufacturing processes. Generally, we will not hedge cash flow exposures for durations longer than 36 months and we have hedged certain volumes of copper through the end of 2022. We enter into foreign currency forward contracts to manage foreign currency risk associated with our receivable and payable balances in addition to foreign-denominated sales. Generally, we enter into master netting arrangements with the counterparties and offset net derivative positions with the same counterparties. Currently, our agreements do not require cash collateral.

ASC Topic 815-10, "Derivatives and Hedging," requires companies to recognize all derivative instruments as either assets or liabilities at fair value in the balance sheet. Derivative instruments' fair value is determined using significant other observable inputs, or Level 2 in the fair value hierarchy. In accordance with ASC Topic 815-10, we designate certain of our commodity swaps as cash flow hedges of forecasted purchases of commodities. For derivative instruments that are designated and qualify as cash flow hedges, the effective portion of the gain or loss on the derivative is reported as a component of other comprehensive income and is reclassified into earnings in the same period or periods during which the hedged transaction affects earnings. Gains and losses on the derivative instruments representing hedge ineffectiveness are recognized in current earnings.

For those commodity swaps where hedge accounting is not elected, the fair value of the commodity swap is recognized as an asset or liability in the consolidated balance sheet and the related gain or loss on the derivative is reported in current earnings. These amounts are classified in cost of sales in the consolidated statement of operations.

As of December 31, 2021 and December 31, 2020, we had outstanding copper swap contracts of the following amounts:

	Units Outstanding (in Pounds)		*Net Fair Value–Asset (Liability)*	
	December 31,		*December 31,*	
	2021	*2020*	*2021*	*2020*
(Amounts in millions)				
Cash flow hedges	29.0	62.3	$53.8	$58.3
Not designated as hedges	6.1	11.5	7.1	10.9
Total	35.1	73.8	$60.9	$69.2

As of December 31, 2021 and December 31, 2020, the fair value of the outstanding copper swap contracts is recorded in the balance sheet as follows:

	December 31,	
	2021	*2020*
(Dollars in millions)		
Derivative contracts	$60.9	$37.3
Non-current derivative contracts	0.0	31.9
Net asset on balance sheet	$60.9	$69.2
Accumulated other comprehensive gain, net of tax	$40.6	$44.4

In the next twelve months, we estimate that $41.4 million of unrealized gains, net of tax, related to commodity price hedging will be reclassified from other comprehensive income into earnings.

See the consolidated statement of comprehensive income and consolidated statement of shareholders' equity for amounts recorded in other comprehensive income and for amounts reclassified from accumulated other comprehensive income into net income for the periods specified below.

For the years ended December 31, 2021 and 2020, the following amounts were recognized in earnings related to copper swap contracts:

	December 31,	
	2021	2020
(Dollars in millions)		
(Loss) gain from contracts where hedge accounting was not elected	$(3.8)	$9.2

The fair value associated with forward contracts related to foreign currency that are not designated as hedges are immediately charged to earnings. These amounts are classified in cost of sales in the consolidated statement of operations.

As of December 31, 2021 and 2020, the fair value of outstanding foreign currency forward contracts is recorded in the balance sheet as follows:

	December 31,	
	2021	2020
(Dollars in millions)		
Derivative contracts	$ 0.1	$ 1.2
Accrued liabilities	(0.5)	(0.5)
Net (liability) asset on balance sheet	$(0.3)	$ 0.7

As of December 31, 2021 and 2020, the net currency units outstanding were:

	December 31,	
	2021	2020
(In millions)		
British Pounds	GBP 0.0	GBP 2.0
United States Dollars	USD 21.4	USD 7.6

18. Common Stock and Senior Convertible Preferred Stock

Changes in senior convertible preferred stock, common stock and treasury stock for the three years ended December 31, 2021 are as follows:

	December 31,		
	2021	2020	2019
(Shares in thousands)			
Senior Convertible Preferred Stock:			
Balance at beginning and end of year	0	0	0
Common Stock:			
Balance at beginning of year	23,688	23,321	23,029
Issued for employee stock plans	339	367	292
Balance at end of year	24,027	23,688	23,321
Treasury Stock:			
Balance at beginning of year	(2,590)	(2,516)	(2,480)
Shares repurchased	(341)	(74)	(36)
Balance at end of year	(2,931)	(2,590)	(2,516)

19. Commitments and Contingent Liabilities

We are involved in litigation and various proceedings relating to environmental laws and regulations, product liability and other matters. Certain of these matters are discussed below. The ultimate resolution of these contingencies is subject to significant uncertainty and should we fail to prevail in any of these legal matters or should several of these legal matters be resolved against us in the same reporting period, these legal matters could, individually or in the aggregate, be material to the consolidated financial statements.

Legal Proceedings

Coal Tar Pitch Cases. Koppers Inc. is one of several defendants in lawsuits filed in two states in which the plaintiffs claim they suffered a variety of illnesses (including cancer) as a result of exposure to coal tar pitch sold by the defendants. There were 59 plaintiffs in 31 cases pending as of December 31, 2021, compared to 64 plaintiffs in 34 cases pending as of December 31, 2020. As of December 31, 2021, there were 30 cases pending in the Court of Common Pleas of Allegheny County, Pennsylvania, and one case pending in the Circuit Court of Knox County, Tennessee.

The plaintiffs in all 31 pending cases seek to recover compensatory damages. Plaintiffs in 26 of those cases also seek to recover punitive damages. The plaintiffs in the 30 cases filed in Pennsylvania seek unspecified damages in excess of the court's minimum jurisdictional limit. The plaintiff in the Tennessee state court case seeks damages of $15.0 million. The other defendants in these lawsuits vary from case to case and include companies such as Beazer East, Inc. ("Beazer East"), Honeywell International Inc., Graftech International Holdings, Dow Chemical Company, UCAR Carbon Company, Inc., and SGL Carbon Corporation. Discovery is proceeding in these cases. No trial dates have been set in any of these cases.

We have not provided a reserve for the coal tar pitch lawsuits because, at this time, we cannot reasonably determine the probability of a loss, and the amount of loss, if any, cannot be reasonably estimated. The timing of resolution of these cases cannot be reasonably determined. Although Koppers Inc. is vigorously defending these cases, an unfavorable resolution of these matters may have a material adverse effect on our business, financial condition, cash flows and results of operations.

Environmental and Other Litigation Matters

We are subject to federal, state, local and foreign laws and regulations and potential liabilities relating to the protection of the environment and human health and safety including, among other things, the cleanup of contaminated sites, the treatment, storage and disposal of wastes, the discharge of effluent into waterways, the emission of substances into the air and various health and safety matters. We expect to incur substantial costs for ongoing compliance with such laws and regulations. We may also face governmental or third-party claims, or otherwise incur costs, relating to cleanup of, or for injuries resulting from, contamination at sites associated with past and present operations. We accrue for environmental liabilities when a determination can be made that a liability is probable and reasonably estimable.

Environmental and Other Liabilities Retained or Assumed by Others We have agreements with former owners of certain of our operating locations under which the former owners retained, assumed and/or agreed to indemnify us against certain environmental and other liabilities. The most significant of these agreements was entered into at Koppers Inc.'s formation on December 29, 1988 (the "Acquisition"). Under the related asset purchase agreement between Koppers Inc. and Beazer East, subject to certain limitations, Beazer East retained the responsibility for and agreed to indemnify Koppers Inc. against certain liabilities, damages, losses and costs, including, with certain limited exceptions, liabilities under and costs to comply with environmental laws to the extent attributable to acts or omissions occurring prior to the Acquisition and liabilities related to products sold by Beazer East prior to the Acquisition (the "Indemnity"). Beazer Limited, the parent company of Beazer East, unconditionally guaranteed Beazer East's performance of the Indemnity pursuant to a guarantee (the "Guarantee").

The Indemnity provides different mechanisms, subject to certain limitations, by which Beazer East is obligated to indemnify Koppers Inc. with regard to certain environmental, product and other liabilities and imposes certain conditions on Koppers Inc. before receiving such indemnification, including, in some cases, certain limitations regarding the time period as to which claims for indemnification can be brought. In July 2004, Koppers Inc. and Beazer East agreed to amend the environmental indemnification provisions of the December 29, 1988 asset purchase agreement to extend the indemnification period for pre-closing environmental liabilities, subject to the following paragraph, and agreed to share toxic tort litigation defense arising from any sites acquired from Beazer East.

Qualified expenditures under the Indemnity are not subject to a monetary limit. Qualified expenditures under the Indemnity include (i) environmental cleanup liabilities required by third parties, such as investigation, remediation and closure costs, relating to pre-December 29, 1988 ("Pre-Closing") acts or omissions of Beazer East or its predecessors; (ii) environmental claims by third parties for personal injuries, property damages and natural resources damages relating to Pre-Closing acts or omissions of Beazer East or its predecessors; (iii) punitive damages for the acts or omissions of Beazer East and its predecessors without regard to the date of the alleged conduct and (iv) product liability claims for products sold by Beazer East or its predecessors without regard to the date of the alleged conduct. The indemnification period ended July 14, 2019 (the "Claim Deadline") and Beazer East may now tender certain third-party claims described in sections (i) and (ii) above to Koppers Inc. However, to the extent the third-party claims described in sections (i) and (ii) above were tendered to Beazer East by the Claim Deadline, Beazer East will continue to be required to pay the costs arising from such claims under the Indemnity. Furthermore, the Claim Deadline did not change the provisions of the Indemnity with respect to indemnification for non-environmental claims, such as product liability claims, which claims may continue to be tendered by Koppers Inc. to Beazer East.

The Indemnity provides for the resolution of issues between Koppers Inc. and Beazer East by an arbitrator on an expedited basis upon the request of either party. The arbitrator could be asked, among other things, to make a determination regarding the allocation of environmental responsibilities between Koppers Inc. and Beazer East. Arbitration decisions under the Indemnity are final and binding on the parties.

Contamination has been identified at most manufacturing and other sites of our subsidiaries. One site currently owned and operated by Koppers Inc. in the United States is listed on the National Priorities List promulgated under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended ("CERCLA"). Currently, at the properties acquired from Beazer East (which includes the National Priorities List site and all but one of the sites permitted under the Resource Conservation and Recovery Act ("RCRA")), a significant portion of all investigative, cleanup and closure activities are being conducted and paid for by Beazer East pursuant to the terms of the Indemnity. In addition, other of Koppers Inc.'s sites are or have been operated under RCRA and various other environmental permits, and remedial and closure activities are being conducted at some of these sites.

To date, the parties that retained, assumed and/or agreed to indemnify us against the liabilities referred to above, including Beazer East, have performed their obligations in all material respects. We believe that, for the last three years ended December 31, 2021, amounts paid by Beazer East as a result of its environmental remediation obligations under the Indemnity have averaged, in total, approximately $6.4 million per year. Periodically, issues have arisen between Koppers Inc. and Beazer East and/or other indemnitors that have been resolved without arbitration. Koppers Inc. and Beazer East engage in discussions from time to time that involve, among other things, the allocation of environmental costs related to certain operating and closed facilities.

If for any reason (including disputed coverage or financial incapability) one or more of such parties fail to perform their obligations and we are held liable for or otherwise required to pay all or part of such liabilities without reimbursement, the imposition of such liabilities on us could have a material adverse effect on our business, financial condition, cash flows and results of operations. Furthermore, we could be required to record a contingent liability on our balance sheet with respect to such matters, which could result in a negative impact to our business, financial condition, cash flows and results of operations.

Domestic Environmental Matters. Koppers Inc. has been named as one of the potentially responsible parties ("PRPs") at the Portland Harbor CERCLA site located on the Willamette River in Oregon. Koppers Inc. operated a coal tar pitch terminal near the site. Koppers Inc. has responded to an EPA information request and has executed a PRP agreement which outlines a private process to develop an allocation of past and future costs among more than 80 parties to the site. Koppers Inc. believes it is a *de minimis* contributor at the site.

The EPA issued its Record of Decision ("ROD") in January 2017 for the Portland Harbor CERCLA site. The selected remedy includes a combination of sediment removal, capping, enhanced and monitored natural recovery and riverbank improvements. The ROD does not determine who is responsible for remediation costs. At that time, the net present value and undiscounted costs of the selected remedy as estimated in the ROD are approximately $1.1 billion and $1.7 billion, respectively. These costs may increase given the remedy will not be implemented for several years. Responsibility for implementing and funding that work will be decided in the separate private allocation process which is ongoing.

Additionally, Koppers Inc. is involved in two separate matters involving natural resource damages at the Portland Harbor site. One matter involves claims by the trustees to recover damages based upon an assessment of damages to natural resources caused by the releases of hazardous substances to the Willamette River. The assessment serves as the foundation to estimate liabilities for settlements of natural resource damages claims or litigation to recover from those who do not settle with the trustee groups. Koppers Inc. has been engaged in a process to resolve its natural resource damage liabilities for the assessment area. A second matter involves a lawsuit filed in January 2017 by the Yakama Nation in Oregon federal court. Yakama Nation seeks recovery for response costs and the costs of assessing injury to natural resources to waterways beyond the current assessment area. Following the most recent court rulings, the Yakama Nation case has been stayed pending completion of the private allocation process for the Portland Harbor CERCLA site.

In September 2009, Koppers Inc. received a general notice letter notifying it that it may be a PRP at the Newark Bay CERCLA site. In January 2010, Koppers Inc. submitted a response to the general notice letter asserting that Koppers Inc. is a *de minimis* party at this site.

We have accrued the estimated costs of participating in the PRP group at the Portland Harbor and Newark Bay CERCLA sites and estimated *de minimis* contributor settlement amounts at the sites totaling $3.5 million as of December 31, 2021. The actual cost could be materially higher as there has not been a determination of how those costs will be allocated among the PRPs at the sites. Accordingly, an unfavorable resolution of these matters may have a material adverse effect on our business, financial condition, cash flows and results of operations.

There are two plant sites related to the Performance Chemicals business and one plant site related to the Utility and Industrial Products business in the United States where we have recorded environmental remediation liabilities for soil and groundwater contamination which occurred prior to our acquisition of the businesses. As of December 31, 2021, our estimated environmental remediation liability for these acquired sites totals $4.2 million.

Foreign Environmental Matters. There is one plant site related to the Performance Chemicals business located in Australia where we have recorded an environmental remediation liability for soil and groundwater contamination which occurred prior to the acquisition of the business. As of December 31, 2021, our estimated environmental remediation liability for the acquired site totals $1.4 million.

Environmental Reserves Rollforward. The following table reflects changes in the accrual for environmental remediation. A total of $2.8 million and $2.9 million are classified as current liabilities as of December 31, 2021 and December 31, 2020, respectively:

	December 31,	
	2021	*2020*
(Dollars in millions)		
Balance at beginning of year	**$11.0**	$ 9.5
Expense	**0.3**	1.8
Revision of reserves	**(0.1)**	0.0
Cash expenditures	**(0.4)**	(0.4)
Currency translation	**(0.1)**	0.1
Balance at end of period	**$10.7**	$11.0

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES

(a) Evaluation of Disclosure Controls and Procedures

The Company's management, with the participation of the Chief Executive Officer and Chief Financial Officer and utilizing the Committee of Sponsoring Organizations of the Treadway Commission (COSO) Internal Control – Integrated Framework (2013), have evaluated the effectiveness of the Company's disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934 as of the end of the period covered by this report. Based on that evaluation, the Chief Executive Officer and Chief Financial Officer have concluded that these controls and procedures were effective as of the end of the period covered by this report.

(b) Changes in Internal Control Over Financial Reporting

There was no change in our internal control over financial reporting (as such term is defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) that occurred during our most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

See Management Report on page 48 for management's annual report on internal control over financial reporting. See Report of Independent Registered Public Accounting Firm on page 49 for KPMG LLP's attestation report on internal control over financial reporting.

ITEM 9B. OTHER INFORMATION

None.

ITEM 9C. DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS

Not applicable.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information required by Item 401 of Regulation S-K with respect to directors is contained in our definitive Proxy Statement for our 2022 Annual Meeting of Shareholders (the "Proxy Statement") which we will file with the Securities and Exchange Commission, pursuant to Regulation 14A, not later than 120 days after the end of our fiscal year under the caption "Proxy Item 1 – Proposal for Election of Directors", and is incorporated herein by reference.

The information required by this item concerning our executive officers is incorporated by reference herein from Part I of this report under "Information About Our Executive Officers".

The information required by Item 405 of Regulation S-K, if disclosure is required thereunder, is included in the Proxy Statement under the caption "General Matters – Delinquent Section 16(a) Reports" and is incorporated herein by reference.

The information required by Item 407(d)(4) and Item 407(d)(5) of Regulation S-K is included in the Proxy Statement under the caption "Proxy Item 1 – Proposal for Election of Directors – Board Meetings and Committees" and is incorporated herein by reference.

The audit committee and our board have approved and adopted a Code of Conduct for all directors, officers and employees and a Code of Ethics Applicable to Senior Officers, copies of which are available on our website at www.koppers.com and upon written request by our shareholders at no cost. Requests should be sent to Koppers Holdings Inc., Attention: Corporate Secretary's Office, 436 Seventh Avenue, Suite 1550, Pittsburgh, Pennsylvania 15219. We will describe the date and nature of any amendment to our Code of Conduct or Code of Ethics Applicable to Senior Officers or any waiver (implicit or explicit) from a provision of our Code of Conduct or Code of Ethics Applicable to Senior Officers within four business days following the date of the amendment or waiver on our Internet website at www.koppers.com. We do not intend to incorporate the contents of our website into this report.

ITEM 11. EXECUTIVE COMPENSATION

The information required by Item 11 is contained in the Proxy Statement under the captions "Executive and Director Compensation" and "Corporate Governance Matters – Committee Reports to Shareholders – Management Development and Compensation Committee Report" and is incorporated herein by reference.

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

The information required by Item 12 is contained in the Proxy Statement under the caption "Common Stock Ownership" and is incorporated herein by reference.

The following table provides information as of December 31, 2021, regarding the number of shares of our common stock that may be issued under our 2020 Long Term Incentive Plan:

Plan Category:	*Number of securities to be issued upon exercise of outstanding options, warrants and rights*	*Weighted average exercise price of outstanding options, warrants and rights*	*Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in first column)*
Equity compensation plans approved by security holders	2,034,325(1)	$26.89(2)	2,068,859
Equity compensation plans not approved by security holders	0	0.00	0
Total	2,034,325	$26.89	2,068,859

(1) Includes shares of our common stock that may be issued pursuant to outstanding options, time-based restricted stock units ("RSUs") and performance-based RSUs awarded under our 2020 Long-Term Incentive Plan.

(2) Does not reflect time-based RSUs and performance-based RSUs included in the first column, which do not have an exercise price.

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

The information required by Item 13 is contained in the Proxy Statement under the captions "Transactions with Related Persons" and "Corporate Governance Matters – Director Independence" and is incorporated herein by reference.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

Auditor Name: KPMG LLP

Auditor Location: Pittsburgh, Pennsylvania (US Firm)

Auditor Firm ID: PCAOB ID 185

All other information required by Item 14 is contained in the Proxy Statement under the caption "Auditors" and is incorporated herein by reference.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) 1. Financial Statements

Financial statements filed as part of this report are included in "Item 8 – Financial Statements and Supplementary Data" as listed on the index on page 47.

(a) 2. Financial Statement Schedules

"Schedule II – Valuation and Qualifying Accounts and Reserves" is included on page 95. All other schedules are omitted because they are not applicable or the required information is contained in the applicable financial statements or notes thereto.

(a) 3. Exhibits

EXHIBIT INDEX

Exhibit No.	*Exhibit*	*Incorporation by Reference*
3.1	Amended and Restated Articles of Incorporation of the Company, as amended on May 7, 2015	Exhibit 3.1 to the Company's Quarterly Report on Form 10-Q filed on August 6, 2015 (Commission File No. 001-32737).
3.2	Second Amended and Restated Bylaws of the Company, as adopted on August 2, 2017	Exhibit 3.2 to the Company's Quarterly Report on Form 10-Q filed on August 3, 2017 (Commission File No. 001-32737).
4.1	Indenture, dated as of January 25, 2017, among Koppers Inc., Koppers Holdings Inc., the other guarantors named therein and Wells Fargo Bank, National Association, as Trustee	Exhibit 4.1 to the Company's Current Report on Form 8-K filed on January 25, 2017 (Commission File No. 001-32737).
4.2	First Supplemental Indenture, dated as of March 7, 2018, among M.A. Energy Resources, LLC, Koppers Inc., Koppers Holdings Inc., as a Guarantor, the other Subsidiary Guarantors and Wells Fargo Bank, National Association, as trustee	Exhibit 4.8 to the Company's Quarterly Report on Form 10-Q filed on May 3, 2018 (Commission File No. 001-32737).
4.3	Second Supplemental Indenture, dated as of April 17, 2018, among the Guaranteeing Subsidiaries party thereto, Koppers Inc., Koppers Holdings Inc., as a Guarantor, the other Subsidiary Guarantors and Wells Fargo Bank, National Association, as trustee	Exhibit 4.9 to the Company's Quarterly Report on Form 10-Q filed on May 3, 2018 (Commission File No. 001-32737).
4.4	Description of Registrant's Securities Registered Pursuant to Section 12 of the Securities Exchange Act of 1934	Exhibit 4.4 to the Company's Annual Report on Form 10-K for the year ended December 31, 2019 filed on February 27, 2020 (Commission File No. 001-32737).
4.5	Third Supplemental Indenture, dated as of August 20, 2020, among Koppers Utility Services LLC, Koppers Inc., Koppers Holdings Inc., as a Guarantor, the other Subsidiary Guarantors and Wells Fargo Bank, National Association, as trustee	Exhibit 4.1 to the Company's Quarterly Report on Form 10-Q filed on November 4, 2020 (Commission File No. 001-32737).
10.1	Asset Purchase Agreement by and between Koppers Inc. and Koppers Company, Inc., dated as of December 28, 1988	Respective exhibits to the Koppers Inc. Prospectus filed on February 7, 1994. (P)
10.2	Asset Purchase Agreement Guarantee provided by Beazer PLC, dated as of December 28, 1988	Respective exhibits to the Koppers Inc. Prospectus filed on February 7, 1994. (P)
10.3*	Koppers Industries, Inc. Non-contributory Long Term Disability Plan for Salaried Employees	Respective exhibits to the Koppers Inc. Prospectus filed on February 7, 1994 pursuant to Rule 424(b) of the Securities Act of 1933, as amended, in connection with the offering of the 8 1 / 2 % Senior Notes due 2004. (P)
10.4*	Koppers Industries, Inc. Survivor Benefit Plan	Respective exhibits to the Koppers Inc. Prospectus filed on February 7, 1994 pursuant to Rule 424(b) of the Securities Act of 1933, as amended, in connection with the offering of the 8 1 / 2 % Senior Notes due 2004. (P)

Exhibit No.	Exhibit	Incorporation by Reference
10.5	Amendment and Restatement to Article VII of the Asset Purchase Agreement by and between Koppers Inc. and Beazer East, Inc., dated July 15, 2004	Exhibit 10.33 to the Koppers Inc. Quarterly Report on Form 10-Q filed on August 6, 2004 (Commission File No. 001-12716).
10.6	Agreement and Plan of Merger dated as of November 18, 2004, by and among Koppers Inc., Merger Sub for KI Inc. and Koppers Holdings Inc. (f/k/a KI Holdings Inc.)	Exhibit 10.34 to the Company's Registration Statement on Form S-4 filed on February 14, 2005 (Registration No. 333-122810).
10.7*	Koppers Holdings Inc. 2005 Long Term Incentive Plan, as Amended and Restated effective March 24, 2016	Appendix A to the Company's Definitive Proxy Statement for its 2016 Annual Meeting of Shareholders filed on April 5, 2016 (Commission File No. 001-32737).
10.8*	Koppers Holdings Inc. Benefit Restoration Plan	Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed on August 9, 2007 (Commission File No. 001-32737).
10.9*	Koppers Inc. Supplemental Executive Retirement Plan I	Exhibit 10.53 to the Company's Annual Report on Form 10-K for the year ended December 31, 2008 filed on February 20, 2009 (Commission File No. 001-32737).
10.10*	Koppers Inc. Supplemental Executive Retirement Plan II, as amended and restated	Exhibit 10.93 to the Company's Quarterly Report on Form 10-Q filed on August 7, 2014 (Commission File No. 001-32737).
10.11*	Amendment to Koppers Holdings Inc. Benefit Restoration Plan effective as of January 1, 2009	Exhibit 10.57 to the Company's Annual Report on Form 10-K for the year ended December 31, 2008 filed on February 20, 2009 (Commission File No. 001-32737).
10.12*	Restricted Stock Unit Issuance Agreement – Time Vesting	Exhibit 10.62 to the Company's Annual Report on Form 10-K for the year ended December 31, 2012 filed on February 25, 2013 (Commission File No. 001-32737).
10.13*	Restricted Stock Unit Issuance Agreement – Performance Vesting	Exhibit 10.63 to the Company's Annual Report on Form 10-K for the year ended December 31, 2012 filed on February 25, 2013 (Commission File No. 001-32737).
10.14*	Notice of Grant of Stock Option	Exhibit 10.64 to the Company's Annual Report on Form 10-K for the year ended December 31, 2012 filed on February 25, 2013 (Commission File No. 001-32737).
10.15*	Form of Koppers Holdings Inc. Restricted Stock Unit Issuance Agreement Non-Employee Director –Time Vesting	Exhibit 10.66 to the Company's Quarterly Report on Form 10-Q filed on May 5, 2011 (Commission File No. 001-32737).
10.16*	Form of Amended and Restated Change in Control Agreement entered into as of May 6, 2013 between the Company and the named Executive	Exhibit 10.80 to the Company's Quarterly Report on Form 10-Q filed on August 8, 2013 (Commission File No. 001-32737).

Exhibit No.	*Exhibit*	*Incorporation by Reference*
10.17*	2014 Restricted Stock Unit Issuance Agreement – Time Vesting	Exhibit 10.84 to the Company's Annual Report on Form 10-K for the year ended December 31, 2013 filed on March 3, 2014 (Commission File No. 001-32737).
10.18*	Koppers Annual Incentive Plan, as amended January 25, 2016.	Exhibit 10.97 to the Company's Annual Report on Form 10-K for the year ended December 31, 2015 filed on February 29, 2016 (Commission File No. 001-32737).
10.19*	Restricted Stock Unit Issuance Agreement – Time Vesting	Exhibit 10.98 to the Company's Annual Report on Form 10-K for the year ended December 31, 2014 filed on March 2, 2015 (Commission File No. 001-32737).
10.20*	Restricted Stock Unit Issuance Agreement – Performance Vesting	Exhibit 10.99 to the Company's Annual Report on Form 10-K for the year ended December 31, 2014 filed on March 2, 2015 (Commission File No. 001-32737).
10.21*	Notice of Grant of Stock Option	Exhibit 10.100 to the Company's Annual Report on Form 10-K for the year ended December 31, 2014 filed on March 2, 2015 (Commission File No. 001-32737).
10.22*	2016 Restricted Stock Unit Issuance Agreement – Performance Vesting	Exhibit 10.107 to the Company's Quarterly Report on Form 10-Q filed on May 6, 2016 (Commission File No. 001-32737).
10.23	Credit Agreement, dated as of February 17, 2017, by and among Koppers Inc., as Borrower, the Guarantors party thereto, the Lenders party thereto, PNC Bank, National Association, as Administrative Agent, and the other agents party thereto	Exhibit 10.1 to the Company's Current Report on Form 8-K filed on February 22, 2017 (Commission File No. 001-32737).
10.24	First Amendment to Credit Agreement dated as of February 26, 2018, by and among Koppers Inc., as Borrower, the Guarantors party thereto, the Lenders party thereto, PNC Bank, National Association, as Administrative Agent, and the other agents party thereto	Exhibit 10.118 to the Company's Quarterly Report on Form 10-Q filed on May 3, 2018 (Commission File No. 001-32737).
10.25	Agreement and Plan of Merger, dated April 10, 2018, by and among Koppers Inc., Cox Industries, Inc., each of the Selling Shareholders party thereto, and the Shareholder Representative party thereto	Exhibit 2.5 to the Company's Quarterly Report on Form 10-Q filed on May 3, 2018 (Commission File No. 001-32737).
10.26	Second Amendment to Credit Agreement and Joinder, dated as of April 10, 2018, by and among Koppers Inc., as Borrower, the Guarantors party thereto, the Lenders party thereto, and PNC Bank, National Association, as Administrative Agent	Exhibit 10.119 to the Company's Quarterly Report on Form 10-Q filed on May 3, 2018 (Commission File No. 001-32737).
10.27*	Koppers Holdings Inc. 2018 Long Term Incentive Plan	Exhibit 10.1 to the Company's Current Report on Form 8-K filed on May 3, 2018 (Commission File No. 001-32737).
10.28*	Form of Restricted Stock Unit Issuance Agreement Time Vesting	Exhibit 10.120 to the Company's Quarterly Report on Form 10-Q filed on August 9, 2018 (Commission File No. 001-32737).

Exhibit No.	Exhibit	Incorporation by Reference
10.29*	Form of Restricted Stock Unit Issuance Agreement – Performance Vesting	Exhibit 10.121 to the Company's Quarterly Report on Form 10-Q filed on August 9, 2018 (Commission File No. 001-32737).
10.30*	Form of Restricted Stock Unit Issuance Agreement Non-Employee Director – Time Vesting	Exhibit 10.122 to the Company's Quarterly Report on Form 10-Q filed on August 9, 2018 (Commission File No. 001-32737).
10.31*	Form of Notice of Grant of Stock Option	Exhibit 10.123 to the Company's Quarterly Report on Form 10-Q filed on August 9, 2018 (Commission File No. 001-32737).
10.32*	Form of Restricted Stock Unit Issuance Agreement – Performance Vesting	Exhibit 10.125 to the Company's Annual Report on Form 10-K for the year ended December 31, 2018 filed on March 1, 2019 (Commission File No. 001-32737).
10.33	Third Amendment to Credit Agreement and Joinder, dated as of May 1, 2019, by and among Koppers Inc., as Borrower, the Guarantors party thereto, the Lenders party thereto, and PNC Bank National Association, as Administrative Agent.	Exhibit 10.126 to the Company's Quarterly Report on Form 10-Q filed on May 3, 2019 (Commission File No. 001-32737).
10.34*	Form of Restricted Stock Unit Issuance Agreement – Time Vesting	Exhibit 10.38 to the Company's Annual Report on Form 10-K for the year ended December 31, 2019 filed on February 27, 2020 (Commission File No. 001-32737).
10.35*	Form of Restricted Stock Unit Issuance Agreement – Performance Vesting	Exhibit 10.39 to the Company's Annual Report on Form 10-K for the year ended December 31, 2019 filed on February 27, 2020 (Commission File No. 001-32737).
10.36*	Form of Notice of Grant of Stock Option	Exhibit 10.40 to the Company's Annual Report on Form 10-K for the year ended December 31, 2019 filed on February 27, 2020 (Commission File No. 001-32737).
10.37	Fourth Amendment to Credit Agreement, dated as of February 26, 2020, by and among Koppers Inc., as Borrower, the Guarantors party thereto, the Lenders party thereto and PNC Bank, National Association, as Administrative Agent.	Exhibit 10.1 to the Company's Current Report on Form 8-K filed on February 27, 2020 (Commission File No. 001-32737).
10.38*	Koppers Holdings Inc. 2020 Long Term Incentive Plan	Exhibit 10.1 to the Company's Current Report on Form 8-K filed on May 7, 2020 (Commission File No. 001-32737).
10.39	Fifth Amendment to Credit Agreement, dated as of August 28, 2020, by and among Koppers Inc., as Borrower, the Guarantors party thereto, the Lenders party thereto, and PNC Bank, National Association, as Administrative Agent.	Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed on November 4, 2020 (Commission File No. 001-32737).
10.40*	Form of Restricted Stock Unit Issuance Agreement – Time Vesting	Exhibit 10.40 to the Company's Annual Report on Form 10-K for the year ended December 31, 2020 filed on February 24, 2021 (Commission File No. 001-32737).

Exhibit No.	*Exhibit*	*Incorporation by Reference*
10.41*	Form of Restricted Stock Unit Issuance Agreement – Performance Vesting	Exhibit 10.41 to the Company's Annual Report on Form 10-K for the year ended December 31, 2020 filed on February 24, 2021 (Commission File No. 001-32737).
10.42*	Form of Notice of Grant of Stock Option	Exhibit 10.42 to the Company's Annual Report on Form 10-K for the year ended December 31, 2020 filed on February 24, 2021 (Commission File No. 001-32737).
10.43*	Amendment to the Koppers Holdings Inc. Benefit Restoration Plan	Exhibit 10.44 to the Company's Annual Report on Form 10-K for the year ended December 31, 2020 filed on February 24, 2021 (Commission File No. 001-32737).
10.44*	First Amendment to the Koppers Holdings Inc. 2020 Long Term Incentive Plan	Exhibit 10.1 to the Company's Current Report on Form 8-K filed on May 7, 2021 (Commission File No. 001-32737).
10.45*	Amended and Restated Koppers Holdings Inc. Employee Stock Purchase Plan	Exhibit 10.2 to the Company's Current Report on Form 8-K filed on May 7, 2021 (Commission File No. 001-32737).
10.46*	Form of Change in Control Agreement entered into as of March 1, 2021 between Koppers Holdings Inc. and the named Executive.	Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed on May 7, 2021 (Commission File No. 001-32737).
10.47*	Koppers Holdings Inc. Director Deferred Compensation Plan	Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed on August 6, 2021 (Commission File No. 001-32737).
10.48***	Sixth Amendment to Credit Agreement, dated as of December 28, 2021, by and among Koppers Inc., as Borrower, the Guarantors party thereto, the Lenders party thereto, and PNC Bank, National Association, as Administrative Agent.	
10.49*** *	Form of Restricted Stock Unit Issuance Agreement – Time Vesting	
10.50*** *	Form of Restricted Stock Unit Issuance Agreement – Performance Vesting	
10.51*** *	Form of Notice of Grant of Stock Option	
21***	List of subsidiaries of the Company.	
23.1***	Consent of Independent Registered Public Accounting Firm.	
24***	Powers of Attorney.	
31.1***	Certification of Chief Executive Officer pursuant to Rule 13a-14(a).	
31.2***	Certification of Chief Financial Officer pursuant to Rule 13a-14(a).	

Exhibit No.	*Exhibit*	*Incorporation by Reference*
32.1***	Certification of Chief Executive Officer and Chief Financial Officer pursuant to Section 1350.	
101.INS***	Inline XBRL Instance Document – the instance document does not appear in the Interactive Data File because its XBRL tags are embedded with the Inline XBRL document	
101.SCH***	Inline XBRL Taxonomy Extension Schema Document	
101.CAL***	Inline XBRL Taxonomy Extension Calculation Linkbase Document	
101.DEF***	Inline XBRL Taxonomy Extension Definition Linkbase Document	
101.LAB***	Inline XBRL Taxonomy Extension Label Linkbase Document	
101.PRE***	Inline XBRL Taxonomy Extension Presentation Linkbase Document	
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)	

** Management Contract or Compensatory Plan.*
**** Filed herewith.*
(P) Paper exhibits

ITEM 16. FORM 10-K SUMMARY

None.

KOPPERS HOLDINGS INC.

SCHEDULE II – VALUATION AND QUALIFYING ACCOUNTS
For the years ended December 31, 2021, 2020 and 2019

(Dollars in millions)	*Balance at Beginning of Year*	*Increase (Decrease) to Expense*	*Net Write-offs*	*Currency Translation*	*Balance at End of Year*
2021					
Allowance for doubtful accounts	$ 2.6	$ 1.2	$(0.5)	$ 0.0	$ 3.3
Deferred tax valuation allowance	$44.6	$ 3.6	$(3.6)	$(0.1)	$44.5
2020					
Allowance for doubtful accounts	$ 2.6	$ 0.2	$(0.2)	$ 0.0	$ 2.6
Deferred tax valuation allowance	$58.0	$(12.1)	$(1.7)	$ 0.4	$44.6
2019					
Allowance for doubtful accounts	$ 2.5	$ 0.6	$(0.5)	$ 0.0	$ 2.6
Deferred tax valuation allowance	$59.9	$ 3.3	$(5.2)	$ 0.0	$58.0

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, as amended, Koppers Holdings Inc. has duly caused this annual report on Form 10-K to be signed on its behalf by the undersigned, thereunto duly authorized.

KOPPERS HOLDINGS INC.

BY: /S/ JIMMI SUE SMITH
Jimmi Sue Smith
Chief Financial Officer and Treasurer

Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, this annual report on Form 10-K has been signed below by the following persons on behalf of the Registrant and in the capacities and on the date indicated.

Signature	*Capacity*	*Date*
/S/ LEROY M. BALL Leroy M. Ball	Director, President and Chief Executive Officer (Principal Executive Officer)	February 23, 2022
/S/ JIMMI SUE SMITH Jimmi Sue Smith	Chief Financial Officer and Treasurer (Principal Financial Officer)	February 23, 2022
/S/ BRADLEY A. PEARCE Bradley A. Pearce	Chief Accounting Officer (Principal Accounting Officer)	February 23, 2022
Stephen R. Tritch	Director and Non-Executive Chairman of the Board	By /S/ LEROY M. BALL Leroy M. Ball *Attorney-in-Fact* February 23, 2022
Xudong Feng	Director	
Traci L. Jensen	Director	
David L. Motley	Director	
Albert J. Neupaver	Director	
Louis L. Testoni	Director	
Sonja M. Wilkerson	Director	

Exhibit 31.1

CERTIFICATIONS

I, Leroy M. Ball certify that:

1. I have reviewed this annual report on Form 10-K of Koppers Holdings Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
   a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
   b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
   c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
   d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):
   a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
   b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 23, 2022

/s/ Leroy M. Ball
Leroy M. Ball
President and Chief Executive Officer

Exhibit 31.2

CERTIFICATIONS

I, Jimmi Sue Smith, certify that:

1. I have reviewed this annual report on Form 10-K of Koppers Holdings Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):

   a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 23, 2022

/s/ Jimmi Sue Smith
Jimmi Sue Smith
Chief Financial Officer and Treasurer

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 of Koppers Holdings Inc. (the "Company") on Form 10-K for the year ended December 31, 2021, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), each of the undersigned hereby certifies in his capacity as an officer of Koppers Holdings Inc., pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

A signed original of this written statement required by Section 906, or other document authenticating, acknowledging, or otherwise adopting the signature that appears in typed form within the electronic version of this written statement required by Section 906, has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.

/s/ Leroy M. Ball
Leroy M. Ball
President and Chief Executive Officer

February 23, 2022

/s/ Jimmi Sue Smith
Jimmi Sue Smith
Chief Financial Officer and Treasurer

February 23, 2022

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Investor Relations and Media Information

Transfer Agent, Registrar of Stock and Dividend Disbursing Agent

Computershare
P.O. Box 505000
Louisville, KY 40233-5000

Overnight correspondence should be sent to:
Computershare
462 South Fourth Street, Suite 1600
Louisville, KY 40202

Koppers-dedicated phone: 866 293 5637
TDD for hearing impaired: 800 231 5469
Foreign holders: 201 680 6578
TDD for foreign holders: 201 680 6610

As a convenience to our shareholders who hold their shares with our transfer agent, individuals can access their account information by logging on at: www.computershare.com/investor

Stock Exchange Listing

Koppers common stock is listed on the New York Stock Exchange (symbol: KOP).

Investor Relations and Media Information

Securities analysts, shareholders, and others seeking financial or general information should contact Ms. Quynh McGuire, Vice President, Investor Relations, at 412 227 2049.

For news media inquiries, please contact Ms. Jessica Franklin, Manager, Corporate Communications, Branding and Giving, at 412 227 2025.

Company News

Visit www.koppers.com for Securities and Exchange Commission (SEC) filings, annual reports, quarterly earnings reports, and other company news.

Annual Meeting of Shareholders

Thursday, May 5, 2022
meetnow.global/M6APFV9
10 a.m. Eastern Time

KOPPERS World Headquarters

Koppers Holdings Inc.

436 Seventh Avenue
Pittsburgh, PA
15219-1800
U.S.A.
Telephone: 412 227 2001

Forward-Looking Statements:

Certain statements in this report are "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995 and may include, but are not limited to, statements about sales levels, acquisitions, restructuring, declines in the value of Koppers assets and the effect of any resulting impairment charges, profitability, and anticipated expenses and cash outflows. All forward-looking statements involve risks and uncertainties. All statements contained herein that are not clearly historical in nature are forward-looking, and words such as "outlook," "guidance," "forecast," "believe," "anticipate," "expect," "estimate," "may," "will," "should," "continue," "plan," "potential," "intend," "likely," or other similar words or phrases are generally intended to identify forward-looking statements. For further discussion of forward-looking statements, including some of the specific factors that may cause such a difference, see the forward-looking statements and risk factors disclosure included in our 2021 Annual Report on Form 10-K. Koppers disclaims any intention or obligation to update or revise any forward-looking statements.

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