

Contact:
 Brook Wootton 980.299.5700



Albemarle Reports Net Sales Increase ~3x for Fourth Quarter 2022; Full-Year Net Sales Over \$7 Billion

CHARLOTTE, NC - Feb. 15, 2023 – Albemarle Corporation (NYSE: ALB), a global leader in transforming essential resources such as lithium and bromine into critical ingredients for mobility, energy, connectivity and health, today announced its results for the fourth quarter and full year ended Dec. 31, 2022.

Fourth Quarter 2022 and Recent Highlights

(Unless otherwise stated, all percentage changes represent year-over-year comparisons)

- Net sales of \$2.6 billion, an increase of 193%
- Net income of \$1.1 billion, or \$9.60 per diluted share; Adjusted diluted EPS of \$8.62, an increase of 753%
- Adjusted EBITDA of \$1.2 billion, an increase of 444%
- Full-year 2023 guidance includes net sales of \$11.3 - \$12.9 billion and adjusted EBITDA of \$4.2 - \$5.1 billion
- Location acquired for Albemarle Technology Park in Charlotte, North Carolina
- Launched MercLok™, a groundbreaking proprietary soil treatment for mercury remediation

“Albemarle’s full-year 2022 net sales of over \$7 billion is more than double our results from 2021, and the adjusted EBITDA of approximately \$3.5 billion is nearly four times that of the prior year. Our outstanding 2022 results demonstrate our durable advantages, particularly in the growing lithium market, and the relentless focus of our global teams in supporting our customers to enable better mobility, energy, connectivity and health,” said Albemarle CEO Kent Masters. “Our growth potential extends well beyond the current EV opportunity. Even as we expand capacity to respond to growing demand, we are maintaining a disciplined approach to capital allocation in order to drive long-term value.”

Albemarle’s unaudited full-year 2022 results and 2023 and long-term outlook are in-line with the strategic update webcast held on Jan. 24. The webcast outlined the company’s expectations for a transformational growth trajectory that could increase net sales to between \$17.6 and \$19.3 billion and adjusted EBITDA to between \$7.2 and \$8.4 billion by 2027. This growth builds on the company’s durable competitive advantages including world-class asset base, diversified product portfolio, technical know-how, and financial strength to maintain market leading positions in its core businesses, Energy Storage and Specialties. The webcast replay is available on Albemarle’s website at <https://investors.albemarle.com>.

2023 Corporate Outlook

Full-year 2023 guidance remains unchanged from the January update, and reflects strong growth with an increase in net sales of about 55% to 75% from 2022 primarily driven by market demand and continued favorable pricing for lithium. Adjusted EBITDA is expected to increase 20% - 45%, with adjusted diluted EPS up to 50% year-over-year. The company expects to maintain positive cash flow even while increasing capital expenditures to between \$1.7 billion and \$1.9 billion for 2023.

	FY 2023 Guidance
Net sales	\$11.3 - \$12.9 billion
Adjusted EBITDA ^(a)	\$4.2 - \$5.1 billion
Adjusted EBITDA Margin ^(a)	37% - 40%
Adjusted Diluted EPS ^(a)	\$26.00 - \$33.00
Net Cash from Operations	\$2.1 - \$2.4 billion
Capital Expenditures	\$1.7 - \$1.9 billion

(a) The company does not provide a reconciliation of forward-looking non-GAAP financial measures to the most directly comparable financial measures calculated and reported in accordance with GAAP, as the company is unable to estimate significant non-recurring or unusual items without unreasonable effort. See "Additional Information regarding Non-GAAP Measures" for more information.

Fourth Quarter 2022 Results

<i>In millions, except per share amounts</i>	<u>Q4 2022</u>	<u>Q4 2021</u>	<u>\$ Change</u>	<u>% Change</u>
Net sales	\$ 2,621.0	\$ 894.2	\$ 1,726.8	193.1 %
Net income (loss) attributable to Albemarle Corporation	\$ 1,132.4	\$ (3.8)	\$ 1,136.2	
Adjusted EBITDA ^(a)	\$ 1,243.8	\$ 228.7	\$ 1,015.1	443.9 %
Diluted earnings (loss) earnings per share	\$ 9.60	\$ (0.03)	\$ 9.63	
Non-operating pension and OPEB items ^(a)	(0.26)	(0.41)		
Non-recurring and other unusual items ^(a)	(0.72)	1.45		
Adjusted diluted earnings per share ^{(a)(b)}	<u>\$ 8.62</u>	<u>\$ 1.01</u>	<u>\$ 7.61</u>	<u>753.5 %</u>

(a) See Non-GAAP Reconciliations for further details.

(b) Totals may not add due to rounding.

Net sales for the fourth quarter nearly tripled, at \$2.6 billion compared to \$894.2 million for the prior-year quarter. The 193% increase was driven by higher lithium prices and increased volumes.

Net income attributable to Albemarle of \$1.1 billion increased from a loss of \$3.8 million in the prior year quarter. Fourth quarter 2021 results were impacted by a \$132.4 million post-measurement period acquisition purchase price adjustment related to anticipated cost overruns from supply chain, labor and COVID-19 pandemic related issues at the Kemerton construction project.

Adjusted EBITDA of \$1.2 billion significantly increased by \$1.0 billion from the prior year quarter primarily due to higher net sales.

The effective income tax rate for the fourth quarter of 2022 was 2.8%, compared to (186.4)% in the same period in 2021. The rate in 2022 was primarily driven by the release of a significant valuation allowance in Australia, while 2021 was driven by a loss recorded in a jurisdiction with a valuation allowance. On an adjusted basis, the effective income tax rates were 14.0% and 27.0% for the fourth quarter of 2022 and 2021, respectively. The difference is primarily due to geographic mix of earnings.

Business Segment Results

For stronger focus and better execution on its multiple growth opportunities, the company has realigned two segments in its core portfolio: Albemarle Energy Storage focused on the lithium-ion battery evolution and the transition to clean energy; and Albemarle Specialties; combining the existing Bromine business with the Lithium specialties business. The resegmenting is effective Jan. 1, 2023, and is reflected in the company's 2023 outlook. Additional historical financial information revised for these newly created segments will be available on a Form 8-K filed by the company in the near future.

Lithium Results

<i>In millions</i>	Q4 2022	Q4 2021	\$ Change	% Change
Net Sales	\$ 2,066.0	\$ 404.7	\$ 1,661.2	410.4 %
Adjusted EBITDA	\$ 1,187.6	\$ 138.2	\$ 1,049.4	759.1 %

Lithium net sales of \$2.1 billion increased \$1.7 billion (+410%) due to higher pricing net of FX (+328%) related to renegotiated contracts and increased market pricing. Volume was also higher (+82%) related primarily to the La Negra III/IV expansion in Chile and higher tolling volumes to meet growing customer demand. Adjusted EBITDA of \$1.2 billion increased by \$1.0 billion as higher pricing and volumes more than offset higher costs.

In December 2022, Albemarle acquired a location in Charlotte, North Carolina, where it plans to invest at least \$180 million to establish the Albemarle Technology Park, a world-class facility designed for novel materials research, advanced process development, and acceleration of next-generation lithium products to market. The State of North Carolina awarded Albemarle a nearly \$13 million incentive package to develop the facility, which is expected to create at least 200 jobs.

2023 Energy Storage Outlook

As disclosed in January, Energy Storage net sales are estimated to range between \$8.3 to \$9.8 billion, with adjusted EBITDA between \$3.7 and \$4.6 billion. Energy Storage volumes are projected to be up 30-40% in 2023 compared to 2022. Full year realized pricing is expected to be up 55-65% vs. prior year, assuming flat pricing to fourth quarter 2022.

Albemarle continues to expand its global portfolio of conversion capacity and utilization of its world-class resource portfolio:

Chile

- The Salar Yield Improvement Project is on schedule for mechanical completion by the middle of 2023

Australia

- Kemerton I is operating and producing lithium hydroxide, which remains subject to customer qualification
- Kemerton II is progressing through commissioning as planned

China

- Construction is progressing on schedule at the Meishan greenfield project

United States

- Site selection for the mega-flex conversion facility is underway
- Kings Mountain mine studies continue to progress positively

Bromine Results

<i>In millions</i>	Q4 2022	Q4 2021	\$ Change	% Change
Net Sales	\$ 319.4	\$ 290.4	\$ 29.1	10.0 %
Adjusted EBITDA	\$ 85.0	\$ 87.4	\$ (2.3)	(2.7)%

Bromine net sales of \$319.4 million increased \$29.1 million (+10%) primarily due to increased pricing net of FX (+9%) and higher volumes (+1%). Adjusted EBITDA of \$85.0 million decreased \$2.3 million as higher net sales were partially offset by higher costs for raw materials and freight.

2023 Specialties Outlook

Albemarle expects 2023 net sales to be approximately \$2.0 billion, with adjusted EBITDA estimated from \$555 million to \$590 million, unchanged from the January update. Adjusted EBITDA margins are expected to be approximately flat year over year.

Catalysts Results

<i>In millions</i>	Q4 2022	Q4 2021	\$ Change	% Change
Net Sales	\$ 235.5	\$ 199.1	\$ 36.5	18.3 %
Adjusted EBITDA	\$ (2.6)	\$ 27.2	\$ (29.9)	(109.6)%

Catalysts net sales of \$235.5 million increased \$36.5 million (+18.3%) compared to the previous year due to higher pricing net of FX (+10%) and higher volumes (+8%). Adjusted EBITDA of \$(2.6) million decreased \$29.9 million as higher sales were more than offset by continued cost pressures from increasing raw materials, higher energy and freight costs.

On January 30, Albemarle announced the official brand launch of Ketjen Corporation (“Ketjen”). Ketjen is a wholly owned subsidiary that crafts tailored, advanced catalyst solutions for the petrochemical, refining, and specialty chemicals industries. Financial results of Ketjen will continue to be reported on a business segment basis.

2023 Ketjen Outlook

As discussed in January, Albemarle expects Ketjen net sales in 2023 to range between \$1.06 billion and \$1.09 billion, with EBITDA in the range of \$70 million to \$100 million, as the segment continues to experience high raw material costs.

Balance Sheet and Liquidity

As of December 31, 2022, Albemarle had estimated liquidity of approximately \$3.2 billion, including \$1.5 billion of cash and equivalents, the full \$1.5 billion under its revolver and \$179 million on other available credit lines. Total debt was \$3.2 billion, representing our debt covenant net debt to adjusted EBITDA of 0.5 times.

Cash Flow and Capital Deployment

Cash from operations of \$1.9 billion increased \$1.6 billion versus the prior year period. This was driven by increased adjusted EBITDA and dividends received from equity investments, partially offset by working capital changes, that were primarily due to the increase in receivables and inventories from higher lithium pricing. Capital expenditures of \$1.3 billion increased by \$308.0 million versus the prior year period as the company invested in lithium and bromine capacity to support growth.

Albemarle’s primary capital allocation priorities are to invest in organic and inorganic opportunities to drive profitable growth, maintain its financial flexibility and investment grade credit rating, and fund its dividends.

Earnings Call

Date:	Thurs., Feb. 16, 2023
Time:	9:00 AM Eastern time
Dial-in (U.S.):	+1 844-200-6205
Dial-in (International):	+1 929-526-1599
Passcode:	788162

The company’s earnings presentation and supporting material are available on Albemarle’s website at <https://investors.albemarle.com>.

About Albemarle

Albemarle Corporation (NYSE: ALB) is a global leader in transforming essential resources such as lithium and bromine into critical ingredients for mobility, energy, connectivity, and health. Building on our world-class resources, technical and process knowledge, and safety and sustainability performance, we partner with our customers to pioneer new ways to move, power, connect, and protect. We are committed to building a more resilient world where people and planet thrive. Learn more about Albemarle at www.albemarle.com and at @albemarlecorp on LinkedIn, Twitter and Facebook.

Albemarle regularly posts information to www.albemarle.com, including notification of events, news, financial performance, investor presentations and webcasts, non-GAAP reconciliations, Securities and Exchange Commission (“SEC”) filings and other information regarding the company, its businesses and the markets it serves.

Forward-Looking Statements

This press release contains statements concerning our expectations, anticipations, intentions, beliefs or strategies regarding the future, which constitute “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995. These forward-looking statements, which are based on assumptions that we have made as of the date hereof and are subject to known and unknown risks and uncertainties that could cause actual results, conditions and events to differ materially from those anticipated, often contain words such as “anticipate,” “assume,” “believe,” “could,” “estimate,” “expect,” “guidance,” “intend,” “may,” “outlook,” “should,” “would,” “will” and variations of such words and similar expressions. Forward-looking statements may include, without limitation, statements regarding future or expected: financial and operating results, production capacity, volumes, and pricing, demand for Albemarle’s products, capital projects, acquisition and divestiture transactions, market and economic trends, and all other information relating to matters that are not historical facts. Factors that could cause Albemarle’s actual results to differ materially from the outlook expressed or implied in any forward-looking statement include, without limitation: changes in economic and business conditions; product development; financial and operating performance of major customers; the timing and magnitude of orders received from customers; the gain or loss of significant customers; fluctuations in lithium market pricing; production volume shortfalls; increased competition; changes in the demand for its products; availability and cost of raw materials and energy; technological change and development; fluctuations in foreign currencies; changes in laws and government regulation; regulatory actions, proceedings, claims or litigation; cyber-security breaches, terrorist attacks, industrial accidents or natural disasters; hazards associated with chemicals manufacturing; the inability to maintain current levels of insurance; political unrest; changes in accounting standards; changes in monetary policies, inflation or interest rates; volatility in the debt and equity markets; intellectual property infringement; future acquisition and divestiture transactions, including the ability to successfully integrate acquisitions; timing and success of active and proposed projects; the duration and impact of the coronavirus (COVID-19) pandemic; performance of Albemarle’s partners in joint ventures and other projects; changes in credit ratings; and the other factors detailed from time to time in the reports Albemarle files with the SEC, including those described under “Risk Factors” in Albemarle’s most recent Annual Report on Form 10-K and any subsequently filed Quarterly Reports on Form 10-Q, which are filed with the SEC and available on the investor section of Albemarle’s website (investors.albemarle.com) and on the SEC’s website at www.sec.gov. These forward-looking statements speak only as of the date of this press release. Albemarle assumes no obligation to provide any revisions to any forward-looking statements should circumstances change, except as otherwise required by securities and other applicable laws.

Albemarle Corporation and Subsidiaries
Consolidated Statements of Income
(In Thousands Except Per Share Amounts) (Unaudited)

	Three Months Ended		Year Ended	
	December 31,		December 31,	
	2022	2021	2022	2021
Net sales	\$2,620,978	\$ 894,204	\$7,320,104	\$3,327,957
Cost of goods sold	1,619,659	657,610	4,245,517	2,329,986
Gross profit	1,001,319	236,594	3,074,587	997,971
Selling, general and administrative expenses	148,156	123,302	524,145	441,482
Research and development expenses	20,154	12,125	71,981	54,026
Loss (gain) on sale of business/interest in properties, net	—	132,453	8,400	(295,971)
Operating profit	833,009	(31,286)	2,470,061	798,434
Interest and financing expenses	(24,039)	(5,306)	(122,973)	(61,476)
Other income (expenses), net	54,119	28,530	86,356	(603,340)
Income (loss) before income taxes and equity in net income of unconsolidated investments	863,089	(8,062)	2,433,444	133,618
Income tax expense	24,102	15,024	390,588	29,446
Income before equity in net income of unconsolidated investments	838,987	(23,086)	2,042,856	104,172
Equity in net income of unconsolidated investments (net of tax)	322,799	33,555	772,275	95,770
Net income	1,161,786	10,469	2,815,131	199,942
Net income attributable to noncontrolling interests	(29,341)	(14,293)	(125,315)	(76,270)
Net income (loss) attributable to Albemarle Corporation	<u>\$1,132,445</u>	<u>\$ (3,824)</u>	<u>\$2,689,816</u>	<u>\$ 123,672</u>
Basic earnings (loss) per share:	\$ 9.67	\$ (0.03)	\$ 22.97	\$ 1.07
Diluted earnings (loss) per share:	\$ 9.60	\$ (0.03)	\$ 22.84	\$ 1.06
Weighted-average common shares outstanding – basic	117,160	116,999	117,120	115,841
Weighted-average common shares outstanding – diluted	117,925	116,999	117,793	116,536

Albemarle Corporation and Subsidiaries
Condensed Consolidated Balance Sheets
(In Thousands) (Unaudited)

	December 31, 2022	December 31, 2021
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 1,499,142	\$ 439,272
Trade accounts receivable	1,190,970	556,922
Other accounts receivable	185,819	66,184
Inventories	2,076,031	798,620
Other current assets	234,955	132,683
Total current assets	<u>5,186,917</u>	<u>1,993,681</u>
Property, plant and equipment	9,354,330	8,074,746
Less accumulated depreciation and amortization	<u>2,391,333</u>	<u>2,165,130</u>
Net property, plant and equipment	6,962,997	5,909,616
Investments	1,150,553	912,008
Other assets	250,558	252,239
Goodwill	1,617,627	1,597,627
Other intangibles, net of amortization	<u>287,870</u>	<u>308,947</u>
Total assets	<u>\$ 15,456,522</u>	<u>\$ 10,974,118</u>
LIABILITIES AND EQUITY		
Current liabilities:		
Accounts payable	\$ 2,052,001	\$ 647,986
Accrued expenses	505,894	763,293
Current portion of long-term debt	2,128	389,920
Dividends payable	46,116	45,469
Income taxes payable	<u>134,876</u>	<u>27,667</u>
Total current liabilities	<u>2,741,015</u>	<u>1,874,335</u>
Long-term debt	3,214,972	2,004,319
Postretirement benefits	32,751	43,693
Pension benefits	159,571	229,187
Other noncurrent liabilities	636,596	663,698
Deferred income taxes	480,770	353,279
Commitments and contingencies		
Equity:		
Albemarle Corporation shareholders' equity:		
Common stock	1,172	1,170
Additional paid-in-capital	2,940,840	2,920,007
Accumulated other comprehensive loss	(560,662)	(392,450)
Retained earnings	<u>5,601,277</u>	<u>3,096,539</u>
Total Albemarle Corporation shareholders' equity	7,982,627	5,625,266
Noncontrolling interests	<u>208,220</u>	<u>180,341</u>
Total equity	<u>8,190,847</u>	<u>5,805,607</u>
Total liabilities and equity	<u>\$ 15,456,522</u>	<u>\$ 10,974,118</u>

Albemarle Corporation and Subsidiaries
Selected Consolidated Cash Flow Data
(In Thousands) (Unaudited)

	Year Ended	
	December 31,	
	2022	2021
Cash and cash equivalents at beginning of year	\$ 439,272	\$ 746,724
Cash flows from operating activities:		
Net income	2,815,131	199,942
Adjustments to reconcile net income to cash flows from operating activities:		
Depreciation and amortization	300,841	254,000
Gain on sale of business/interest in properties, net	8,400	(295,971)
Stock-based compensation and other	30,474	20,120
Equity in net income of unconsolidated investments (net of tax)	(772,275)	(95,770)
Dividends received from unconsolidated investments and nonmarketable securities	801,239	78,391
Pension and postretirement benefit	(52,254)	(74,010)
Pension and postretirement contributions	(16,112)	(30,253)
Unrealized gain on investments in marketable securities	3,279	(3,818)
Loss on early extinguishment of debt	19,219	28,955
Deferred income taxes	93,339	(38,500)
Changes in current assets and liabilities, net of effects of acquisitions and divestitures:		
Increase in accounts receivable	(786,121)	(49,295)
Increase in inventories	(1,609,642)	(127,401)
(Increase) decrease in other current assets	(104,655)	17,411
Increase in accounts payable	1,287,072	143,939
(Decrease) increase in accrued expenses and income taxes payable	(201,356)	127,068
Non-cash transfer of 40% value of construction in progress of Kemerton plant to MRL	122,682	135,928
Other, net	(31,412)	53,521
Net cash provided by operating activities	<u>1,907,849</u>	<u>344,257</u>
Cash flows from investing activities:		
Acquisitions, net of cash acquired	(162,239)	—
Capital expenditures	(1,261,646)	(953,667)
Cash proceeds from divestitures, net	—	289,791
Sales of marketable securities, net	1,942	3,774
Investments in equity and other corporate investments	(706)	(6,488)
Net cash used in investing activities	<u>(1,422,649)</u>	<u>(666,590)</u>
Cash flows from financing activities:		
Proceeds from issuance of common stock	—	1,453,888
Proceeds from borrowings of credit agreements	1,964,216	—
Repayments of long-term debt and credit agreements	(705,000)	(1,173,823)
Other (repayments) borrowings, net	(391,662)	60,991
Fees related to early extinguishment of debt	(9,767)	(24,877)
Dividends paid to shareholders	(184,429)	(177,853)
Dividends paid to noncontrolling interests	(44,208)	(96,136)
Proceeds from exercise of stock options	2,783	18,392
Withholding taxes paid on stock-based compensation award distributions	(13,338)	(8,140)
Other	(6,708)	(2,230)
Net cash provided by financing activities	<u>611,887</u>	<u>50,212</u>
Net effect of foreign exchange on cash and cash equivalents	<u>(37,217)</u>	<u>(35,331)</u>
Increase (decrease) in cash and cash equivalents	<u>1,059,870</u>	<u>(307,452)</u>
Cash and cash equivalents at end of period	<u>\$ 1,499,142</u>	<u>\$ 439,272</u>

Albemarle Corporation and Subsidiaries
Consolidated Summary of Segment Results
(In Thousands) (Unaudited)

	Three Months Ended		Year Ended	
	December 31,		December 31,	
	2022	2021	2022	2021
Net sales:				
Lithium	\$2,065,989	\$ 404,745	\$5,008,850	\$1,363,284
Bromine	319,443	290,365	1,411,682	1,128,343
Catalysts	235,546	199,094	899,572	761,235
All Other	—	—	—	75,095
Total net sales	<u>\$2,620,978</u>	<u>\$ 894,204</u>	<u>\$7,320,104</u>	<u>\$3,327,957</u>
Adjusted EBITDA:				
Lithium	\$1,187,596	\$ 138,245	\$3,102,662	\$ 479,538
Bromine	85,041	87,384	456,916	360,682
Catalysts	(2,605)	27,247	28,732	106,941
All Other	—	—	—	29,858
Corporate	(26,280)	(24,153)	(112,453)	(106,045)
Total adjusted EBITDA	<u>\$1,243,752</u>	<u>\$ 228,723</u>	<u>\$3,475,857</u>	<u>\$ 870,974</u>

See accompanying non-GAAP reconciliations below.

Additional Information regarding Non-GAAP Measures

It should be noted that adjusted net income attributable to Albemarle Corporation, adjusted diluted earnings per share, non-operating pension and other post-employment benefit (“OPEB”) items per diluted share, non-recurring and other unusual items per diluted share, adjusted effective income tax rates, EBITDA, adjusted EBITDA (on a consolidated basis), EBITDA margin and adjusted EBITDA margin are financial measures that are not required by, or presented in accordance with, accounting principles generally accepted in the United States, or GAAP. These non-GAAP measures should not be considered as alternatives to Net income attributable to Albemarle Corporation (“earnings”) or other comparable measures calculated and reported in accordance with GAAP. These measures are presented here to provide additional useful measurements to review the company’s operations, provide transparency to investors and enable period-to-period comparability of financial performance. The company’s chief operating decision maker uses these measures to assess the ongoing performance of the company and its segments, as well as for business and enterprise planning purposes.

A description of other non-GAAP financial measures that Albemarle uses to evaluate its operations and financial performance, and reconciliation of these non-GAAP financial measures to the most directly comparable financial measures calculated and reported in accordance with GAAP can be found on the following pages of this press release, which is also available on Albemarle’s website at <https://investors.albemarle.com>. The company does not provide a reconciliation of forward-looking non-GAAP financial measures to the most directly comparable financial measures calculated and reported in accordance with GAAP, as the company is unable to estimate significant non-recurring or unusual items without unreasonable effort. The amounts and timing of these items are uncertain and could be material to the company's results calculated in accordance with GAAP.

ALBEMARLE CORPORATION AND SUBSIDIARIES

Non-GAAP Reconciliations

(Unaudited)

See below for a reconciliation of adjusted net income attributable to Albemarle Corporation, EBITDA and adjusted EBITDA (on a consolidated basis), which are non-GAAP financial measures, to Net income (loss) attributable to Albemarle Corporation (“earnings”), the most directly comparable financial measure calculated and reported in accordance with GAAP. Reconciliation of adjusted EBITDA on a segment basis is also provided. Adjusted net income attributable to Albemarle Corporation is defined as net income before the non-recurring, other unusual and non-operating pension and other post-employment benefit (OPEB) items as listed below. The non-recurring and unusual items may include acquisition and integration related costs, gains or losses on sales of businesses, restructuring charges, facility divestiture charges, certain litigation and arbitration costs and charges, and other significant non-recurring items. EBITDA is defined as net income attributable to Albemarle Corporation before interest and financing expenses, income tax expense, and depreciation and amortization. Adjusted EBITDA is defined as EBITDA plus or minus the non-recurring, other unusual and non-operating pension and OPEB items as listed below.

In thousands, except percentages and per share amounts	Three Months Ended December 31,		Year Ended December 31,	
	2022	2021	2022	2021
Net income (loss) attributable to Albemarle Corporation	\$ 1,132,445	\$ (3,824)	\$ 2,689,816	\$ 123,672
Add back:				
Non-operating pension and OPEB items (net of tax)	(30,168)	(47,848)	(42,189)	(60,659)
Non-recurring and other unusual items (net of tax)	(85,400)	170,180	(61,377)	407,337
Adjusted net income attributable to Albemarle Corporation	\$ 1,016,877	\$ 118,508	\$ 2,586,250	\$ 470,350
Adjusted diluted earnings per share	\$ 8.62	\$ 1.01	\$ 21.96	\$ 4.04
Weighted-average common shares outstanding – diluted	117,925	116,999	117,793	116,536
Net income (loss) attributable to Albemarle Corporation	\$ 1,132,445	\$ (3,824)	\$ 2,689,816	\$ 123,672
Add back:				
Interest and financing expenses	24,039	5,306	122,973	61,476
Income tax expense	24,102	15,024	390,588	29,446
Depreciation and amortization	85,561	68,235	300,841	254,000
EBITDA	1,266,147	84,741	3,504,218	468,594
Non-operating pension and OPEB items	(41,687)	(62,407)	(57,032)	(78,814)
Non-recurring and other unusual items (excluding items associated with interest expense)	19,292	206,389	28,671	481,194
Adjusted EBITDA	\$ 1,243,752	\$ 228,723	\$ 3,475,857	\$ 870,974
Net sales	\$ 2,620,978	\$ 894,204	\$ 7,320,104	\$ 3,327,957
EBITDA margin	48.3 %	9.5 %	47.9 %	14.1 %
Adjusted EBITDA margin	47.5 %	25.6 %	47.5 %	26.2 %

See below for a reconciliation of adjusted EBITDA on a segment basis to Net income (loss) attributable to Albemarle Corporation (in thousands, except percentages).

	Lithium	Bromine	Catalysts	All Other	Corporate	Consolidated Total	% of Net Sales
Three months ended December 31, 2022:							
Net income (loss) attributable to Albemarle Corporation	\$ 1,125,862	\$ 70,612	\$ (15,237)	\$ —	\$ (48,792)	\$ 1,132,445	43.2 %
Depreciation and amortization	60,561	14,429	12,632	—	(2,061)	85,561	3.3 %
Non-recurring and other unusual items	1,173	—	—	—	18,119	19,292	0.7 %
Interest and financing expenses	—	—	—	—	24,039	24,039	0.9 %
Income tax expense	—	—	—	—	24,102	24,102	0.9 %
Non-operating pension and OPEB items	—	—	—	—	(41,687)	(41,687)	(1.6)%
Adjusted EBITDA	\$ 1,187,596	\$ 85,041	\$ (2,605)	\$ —	\$ (26,280)	\$ 1,243,752	47.5 %
Three months ended December 31, 2021:							
Net income (loss) attributable to Albemarle Corporation	\$ (45,049)	\$ 73,831	\$ 13,952	\$ —	\$ (46,558)	\$ (3,824)	(0.4)%
Depreciation and amortization	39,213	13,553	13,295	—	2,174	68,235	7.6 %
Non-recurring and other unusual items	144,081	—	—	—	62,308	206,389	23.1 %
Interest and financing expenses	—	—	—	—	5,306	5,306	0.6 %
Income tax expense	—	—	—	—	15,024	15,024	1.7 %
Non-operating pension and OPEB items	—	—	—	—	(62,407)	(62,407)	(7.0)%
Adjusted EBITDA	\$ 138,245	\$ 87,384	\$ 27,247	\$ —	\$ (24,153)	\$ 228,723	25.6 %
Year ended December 31, 2022:							
Net income (loss) attributable to Albemarle Corporation	\$ 2,903,076	\$ 402,820	\$ (27,104)	\$ —	\$ (588,976)	\$ 2,689,816	36.7 %
Depreciation and amortization	189,347	54,096	51,417	—	5,981	300,841	4.1 %
Non-recurring and other unusual items (excluding items associated with interest expense)	10,239	—	4,419	—	14,013	28,671	0.4 %
Interest and financing expenses	—	—	—	—	122,973	122,973	1.7 %
Income tax expense	—	—	—	—	390,588	390,588	5.3 %
Non-operating pension and OPEB items	—	—	—	—	(57,032)	(57,032)	(0.8)%
Adjusted EBITDA	\$ 3,102,662	\$ 456,916	\$ 28,732	\$ —	\$ (112,453)	\$ 3,475,857	47.5 %
Year ended December 31, 2021:							
Net income (loss) attributable to Albemarle Corporation	\$ 192,244	\$ 309,501	\$ 55,353	\$ 27,988	\$ (461,414)	\$ 123,672	3.7 %
Depreciation and amortization	138,772	51,181	51,588	1,870	10,589	254,000	7.6 %
Non-recurring and other unusual items (excluding items associated with interest expense)	148,522	—	—	—	332,672	481,194	14.5 %
Interest and financing expenses	—	—	—	—	61,476	61,476	1.8 %
Income tax expense	—	—	—	—	29,446	29,446	0.9 %
Non-operating pension and OPEB items	—	—	—	—	(78,814)	(78,814)	(2.4)%
Adjusted EBITDA	\$ 479,538	\$ 360,682	\$ 106,941	\$ 29,858	\$ (106,045)	\$ 870,974	26.2 %

Non-operating pension and OPEB items, consisting of mark-to-market actuarial gains/losses, settlements/curtailments, interest cost and expected return on assets, are not allocated to Albemarle's operating segments and are included in the Corporate category. In addition, the company believes that these components of pension cost are mainly driven by market performance, and the company manages these separately from the operational performance of the company's businesses. In accordance with GAAP, these non-operating pension and OPEB items are included in Other income (expenses), net. Non-operating pension and OPEB items were as follows (in thousands):

	Three Months Ended		Year Ended	
	December 31,		December 31,	
	2022	2021	2022	2021
MTM actuarial gain	\$ (36,989)	\$ (56,919)	\$ (36,989)	\$ (56,919)
Interest cost	5,814	5,390	23,497	21,670
Expected return on assets	(10,512)	(10,878)	(43,540)	(43,565)
Total	<u>\$ (41,687)</u>	<u>\$ (62,407)</u>	<u>\$ (57,032)</u>	<u>\$ (78,814)</u>

In addition to the non-operating pension and OPEB items disclosed above, the company has identified certain other items and excluded them from Albemarle's adjusted net income calculation for the periods presented. A listing of these items, as well as a detailed description of each follows below (per diluted share):

	Three Months Ended		Year Ended	
	December 31,		December 31,	
	2022	2021	2022	2021
Restructuring and other ⁽¹⁾	\$ —	\$ —	\$ —	\$ 0.02
Acquisition and integration related costs ⁽²⁾	0.05	0.05	0.11	0.06
Albemarle Foundation contribution ⁽³⁾	—	—	—	0.13
Loss (gain) on sale of business/interest in properties, net ⁽⁴⁾	—	1.13	0.07	(1.70)
Loss on extinguishment of debt ⁽⁵⁾	—	—	0.13	0.20
Legal accrual ⁽⁶⁾	—	0.03	—	4.36
Indemnification adjustments ⁽⁷⁾	—	0.34	—	0.34
Other ⁽⁸⁾	0.09	0.19	0.02	0.34
Tax related items ⁽⁹⁾	(0.86)	(0.29)	(0.85)	(0.25)
Total non-recurring and other unusual items	<u>\$ (0.72)</u>	<u>\$ 1.45</u>	<u>\$ (0.52)</u>	<u>\$ 3.50</u>

- (1) During the three months and year ended December 31, 2021, Albemarle recorded facility closure costs related to offices in Germany, and severance expenses in Germany and Belgium, in Selling, general and administrative expenses of \$0.7 million and \$3.0 million (\$0.5 million and \$2.1 million after income taxes, or less than \$0.01 and \$0.02 per share), respectively.
- (2) Costs related to the acquisition, integration and divestitures for various significant projects, recorded in Selling, general and administrative expenses for the three months and year ended December 31, 2022 of \$7.0 million and \$16.3 million (\$5.4 million and \$12.6 million after income taxes, or \$0.05 and \$0.11 per share), respectively, and for the three months and year ended December 31, 2021 of \$6.9 million and \$12.7 million (\$5.4 million and \$7.4 million after income taxes, or \$0.05 and \$0.06 per share), respectively.
- (3) Included in Selling, general and administrative expenses for the year ended December 31, 2021 is a charitable contribution of \$20.0 million (\$15.5 million after income taxes, or \$0.13 per share), using a portion of the proceeds received from the divestiture of the company's fine chemistry solutions ("FCS") business, to the Albemarle Foundation, a nonprofit organization that sponsors grants, health and social projects, educational initiatives, disaster relief, matching gift programs, scholarships and other charitable initiatives in locations where Albemarle's employees live and the company operates. This contribution is in addition to the normal annual contribution made to the Albemarle Foundation by the company, and is significant in size and nature in that it is intended to provide more long-term benefits in these communities.

- (4) Included in Loss (gain) on sale of business/interest in properties for the year ended December 31, 2022 is an expense of \$8.4 million (\$0.07 per share after no income tax impact) related to a post-measurement period Wodgina acquisition purchase price adjustment for a revised estimate of the obligation to construct the lithium hydroxide conversion assets in Kemerton due to anticipated cost overruns from supply chain, labor and COVID-19 pandemic related issues. Included in Loss (gain) on sale of business/interest in properties, net for the year ended December 31, 2021 is \$428.4 million (\$330.8 million after discrete income taxes, or \$2.84 per share) related to the sale of the FCS business. This is partially offset by an expense of \$132.4 million (\$1.13 per share after no income tax impact) post-measurement period Wodgina acquisition purchase price adjustment recorded in the fourth quarter of 2021.
- (5) Included in Interest and financing expenses for the year ended December 31, 2022 is a loss on early extinguishment of debt of \$19.2 million (\$14.9 million after income taxes, or \$0.13 per share), representing the tender premiums, fees, unamortized discounts, unamortized deferred financing costs and accelerated amortization of associated interest rate swap from the redemption of the \$425 million senior notes originally due in 2024 using the proceeds from the issuance of \$1.7 billion in senior notes in May 2022.

Included in Interest and financing expenses for the year ended December 31, 2021 is a loss on early extinguishment of debt of \$29.0 million (\$23.8 million after income taxes, or \$0.20 per share) related to tender premiums, fees, unamortized discounts and unamortized deferred financing costs from the redemption of \$1.5 billion in debt using the proceeds from the issuance of common stock.

- (6) Included in Other expense, net for the year ended December 31, 2021 is a \$657.4 million (\$508.5 million after income taxes, or \$4.36 per share) charge following the settlement of an arbitration ruling for a prior legal matter. The three months ended December 31, 2021 includes an adjustment to income taxes from this charge of \$4.0 million (\$0.03 per share).
- (7) Included in Other expenses, net for the three months and year ended December 31, 2021 are expenses of \$39.4 million (\$39.4 million after income taxes, or \$0.34 per share), to revise an indemnification estimate for an ongoing tax-related matter of a previously disposed business in Germany.
- (8) Other adjustments for the three months ended December 31, 2022 included amounts recorded in:
- Selling, general and administrative expenses - \$2.6 million of shortfall contributions for our multiemployer plan financial improvement plan and \$1.2 million primarily related to facility closure expenses of offices in Germany.
 - Other income (expenses), net - \$6.3 million loss related to the fair value adjustment of equity securities in a public company and a \$4.3 million loss resulting from the adjustment of indemnification related to previously disposed businesses, partially offset by a \$2.0 million gain relating to the adjustment of an environmental reserve at non-operating businesses we had previously divested.

After income taxes, these charges totaled \$10.4 million, or \$0.09 per share.

Other adjustments for the year ended December 31, 2022 included amounts recorded in:

- Cost of goods sold - \$2.7 million of expense related to one-time retention payments for certain employees during the Catalysts strategic review and business unit realignment, and \$0.5 million related to the settlement of a legal matter resulting from a prior acquisition.
- Selling, general and administrative expenses - \$4.3 million related to facility closure expenses of offices in Germany, \$2.8 million of charges for environmental reserves at sites not part of our operations, \$2.8 million of shortfall contributions for our multiemployer plan financial improvement plan, \$1.9 million of expense primarily related to one-time retention payments for certain employees during the Catalysts strategic review, partially offset by \$4.3 million of gains from the sale of legacy properties not part of our operations.

- Other income (expenses), net - \$4.3 million net gain related to the fair value adjustment of equity securities in a public company, a \$3.0 million gain from the reversal of a liability related to a previous divestiture, a \$2.0 million gain relating to the adjustment of an environmental reserve at non-operating businesses we had previously divested and a \$0.6 million gain related to a settlement received from a legal matter in a prior period, partially offset by a \$3.2 million loss resulting from the adjustment of indemnification related to previously disposed businesses.

After income taxes, these charges totaled \$3.2 million, or \$0.02 per share.

Other adjustments for the three months ended December 31, 2021 included amounts recorded in:

- Cost of goods sold - \$10.5 million of expense related to a legal matter as part of a prior acquisition in our Lithium business.
- Selling, general and administrative expenses - \$11.5 million of legal fees related to a legacy Rockwood legal matter noted above and \$2.2 million of charges for environmental reserves at sites not part of the company's operations.

After income taxes, these charges totaled \$22.6 million, or \$0.19 per share.

Other adjustments for the year ended December 31, 2021 included amounts recorded in:

- Cost of goods sold - \$10.5 million of expense related to a legal matter as part of a prior acquisition in our Lithium business.
- Selling, general and administrative expenses - \$11.5 million of legal fees related to a legacy Rockwood legal matter noted above, \$9.8 million of expenses primarily related to non-routine labor and compensation related costs that are outside normal compensation arrangements, a \$4.0 million loss resulting from the sale of property, plant and equipment and \$3.8 million of charges for an environmental reserve at a site not part of the company's operations.
- Other income (expense), net - \$4.8 million of expenses primarily related to asset retirement obligation charges to update an estimate at a site formerly owned by Albemarle.

After income taxes, these charges totaled \$38.5 million, or \$0.34 per share.

- (9) Included in Income tax expense (benefit) for the three months and year ended December 31, 2021 are discrete net tax benefits of \$101.2 million, or \$0.86 per share, and \$100.5 million, or \$0.85 per share, respectively. The net benefit for the three months and full year 2022 was primarily related to the reversal of a valuation allowance in Australia. In addition, the three months includes a tax benefit for global intangible low-taxed income and net discrete tax benefits related to excess tax benefits realized from stock-based compensation arrangements and domestic and foreign return to provisions. The discrete net benefit for the full year 2022 also includes withholding taxes, and domestic and foreign return to provisions, partially offset by a benefit for excess tax benefits realized from stock-based compensation arrangements.

Included in Income tax expense (benefit) for the three months and year ended December 31, 2020 are discrete net tax benefits of \$34.3 million, or \$0.29 per share, and \$29.4 million, or \$0.25 per share, respectively. The net benefit for the three months is primarily related to benefits for the ongoing tax-related matter of a previously disposed business in Germany noted above, benefits for uncertain tax positions for statute of limitation expirations, excess tax benefits realized from stock-based compensation arrangements, and return to accrual adjustments. The net benefit for the full year 2021 is primarily related to benefits for the ongoing tax-related matter of a previously disposed business in Germany noted above, the release of valuation allowance related to foreign operations, changes to uncertain tax positions, excess tax benefits realized from stock-based compensation arrangements, and return to accrual adjustments.

See below for a reconciliation of the adjusted effective income tax rate, the non-GAAP financial measure, to the effective income tax rate, the most directly comparable financial measure calculated and reporting in accordance with GAAP (in thousands, except percentages).

	Income (loss) before income taxes and equity in net income of unconsolidated investments	Income tax expense	Effective income tax rate
Three months ended December 31, 2022:			
As reported	\$ 863,089	\$ 24,102	2.8 %
Non-recurring, other unusual and non-operating pension and OPEB items	(22,394)	93,174	
As adjusted	<u>\$ 840,695</u>	<u>\$ 117,276</u>	14.0 %
Three months ended December 31, 2021:			
As reported	\$ (8,062)	\$ 15,024	(186.4)%
Non-recurring, other unusual and non-operating pension and OPEB items	143,982	21,650	
As adjusted	<u>\$ 135,920</u>	<u>\$ 36,674</u>	27.0 %
Year ended December 31, 2022:			
As reported	\$ 2,433,444	\$ 390,588	16.1 %
Non-recurring, other unusual and non-operating pension and OPEB items	(9,142)	94,424	
As adjusted	<u>\$ 2,424,302</u>	<u>\$ 485,012</u>	20.0 %
Year ended December 31, 2021:			
As reported	\$ 133,618	\$ 29,446	22.0 %
Non-recurring, other unusual and non-operating pension and OPEB items	431,648	84,649	
As adjusted	<u>\$ 565,266</u>	<u>\$ 114,095</u>	20.2 %