# **Albemarle Corporation**

Making the World Safe & Sustainable by Powering the Potential of People

Lithium Ion Battery Materials and Electric Vehicle Supply Chain Benchmark Minerals

Eric Norris May 28, 2020

# Forward-Looking Statements

Some of the information presented in this presentation, the webcast and discussions that follow, including, without limitation, statements with respect to product development, market trends, price, expected growth and earnings, demand for our products, capital projects, tax rates, stock repurchases, dividends, cash flow generation, economic trends, outlook and all other information relating to matters that are not historical facts may constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Actual results could differ materially from the views expressed.

Factors that could cause 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; changes in financial and operating performance of our major customers and industries and markets served by us; the timing of orders received from customers; the gain or loss of significant customers; competition from other manufacturers; changes in the demand for our products or the end-user markets in which our products are sold; limitations or prohibitions on the manufacture and sale of our products; availability of raw materials; increases in the cost of raw materials and energy, and our ability to pass through such increases to our customers; changes in our markets in general; fluctuations in foreign currencies; changes in laws and government regulation impacting our operations or our products; the occurrence of regulatory proceedings, claims or litigation; the occurrence of cyber-security breaches, terrorist attacks, industrial accidents, natural disasters or climate change; hazards associated with chemicals manufacturing; the inability to maintain current levels of product or premises liability insurance or the denial of such coverage; political unrest affecting the global economy, including adverse effects from terrorism or hostilities; political instability affecting our manufacturing operations or joint ventures; changes in accounting standards; the inability to achieve results from our global manufacturing cost reduction initiatives as well as our ongoing continuous improvement and rationalization programs; changes in the jurisdictional mix of our earnings and changes in tax laws and rates; changes in monetary policies, inflation or interest rates that may impact our ability to raise capital or increase our cost of funds, impact the performance of our pension fund investments and increase our pension expense and funding obligations; volatility and uncertainties in the debt and equity markets; technology or intellectual property infringement, including cybersecurity breaches, and other innovation risks; decisions we may make in the future; the ability to successfully execute, operate and integrate acquisitions and divestitures; uncertainties as to the duration and impact of the coronavirus (COVID-19) pandemic; and the other factors detailed from time to time in the reports we file with the SEC, including those described under "Risk Factors" in our Annual Report on Form 10-K and our Quarterly Reports on Form 10-Q. These forwardlooking statements speak only as of the date of this presentation. We assume no obligation to provide any revisions to any forward-looking statements should circumstances change, except as otherwise required by securities and other applicable laws.



### Non-GAAP Financial Measures

It should be noted that Adjusted net income attributable to Albemarle Corporation ("Adjusted earnings"), Adjusted diluted earnings per share attributable to Albemarle Corporation, Adjusted effective income tax rates, segment operating profit, segment income, pro-forma net sales, net sales excluding the impact of foreign exchange translation ("ex FX"), EBITDA, Adj. EBITDA by operating segment, EBITDA margin, Adj. EBITDA margin, pro-forma Adj. EBITDA, pro-forma Adj. EBITDA excluding the impact of foreign exchange translation ("ex FX"), Adj. EBITDA margin excluding the impact of foreign exchange translation ("ex FX"), net debt to Adj. EBITDA, gross debt to Adj. EBITDA, free cash flow, and Adjusted free cash flow are financial measures that are not required by, or presented in accordance with, accounting principles generally accepted in the United States, or GAAP. These measures are presented here to provide additional useful measurements to review our 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 these and other non-GAAP financial measures that we use to evaluate our 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 in the Appendix to this presentation. 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.

# Diversified Portfolio with Above-Market Margin

#### **KEY STATS BUSINESS OVERVIEW** Making the World Safe and Sustainable by Powering the Potential of People 1887 Founded 132 years Lithium Catalysts **Bromine Specialties** Global Employees<sup>1</sup> ~5,600 Countries ~75 37% 29% 28% of Total of Total of Total Dividend Payout Ratio<sup>2</sup> Revenue Revenue Revenue 29% FINANCIAL HIGHLIGHTS<sup>3</sup> 37% 25% 34% Adj. EBITDA Margin<sup>5</sup> Adj. EBITDA Margin<sup>5</sup> **Net Sales** \$3.5B ~20% ~3% ~2% Industry Growth<sup>6</sup> Industry Growth<sup>6</sup> Net Income<sup>4</sup> \$507M as of 12/12/19 as of 12/12/19 Adj. EBITDA \$1,007M **REVENUE BY GEOGRAPHY** 1% 26% Adj. EBITDA Margin 23% 50% 29% RoW North America Asia (13% in China)



### Lithium Snapshot

### Financials | Trailing 12-months

**\$1.3B**Net Sales

**\$488M** Adj. EBITDA<sup>1</sup> **37%**Adj. EBITDA Margin<sup>1</sup>

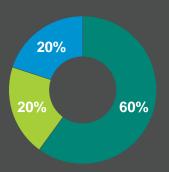
### **Segment Characteristics**

- Leading market positions in Hydroxide, Carbonate, Lithium Metal, and Organometallics
- · Mining and specialty chemicals capability
- Vertically integrated from natural resource to specialty performance products
- High-quality product portfolio / low-cost position

#### **Business Environment**

- · Volume growth driven by energy storage
- · Highly dynamic, emerging supply chain
- Public policy accelerating e-mobility / renewables
- Battery cost declining + performance improving = need for higher-quality lithium and innovation
- Security of supply essential to underwrite global auto OEM investment in vehicle electrification

### **Applications**



- Energy Storage
  EVs, Grid, Phones, Wearables
- Industrial Glass, Grease, Aerospace
  - **Specialties**
- Synthetic Rubber, Pharma, Ag

Well Positioned to Remain a Market Leader as Growth Continues

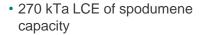
## Lithium Strategy: Strong Foundation / Resilient to Market Dynamics

I. Manage World's Best Resources

II. Expand
Capacity with
Discipline

III: Drive Cost and Operational Excellence

IV: Sustain Premium Value Proposition



- 110 kTa LCE of brine capacity
- Sustainable resource management
- Geographically diverse
- · High concentrations and low cost

- Reduced capital intensity
- · Build to meet market demand
- · Strong return economics

- Lean, low-cost manufacturing
- One world class global standard
- Leader in quality, reliability, and sustainability
- Long-term customer partnerships
- Differentiated customer offerings
- · Innovative lithium materials

Our Strategy is Guided by the Albemarle Values and Rooted in Safety and Sustainability

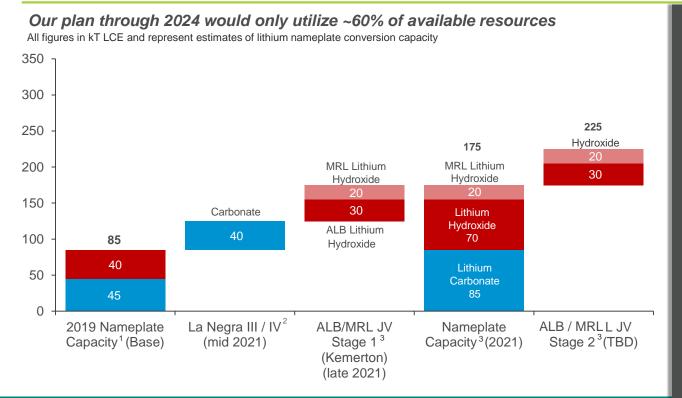
### I. Large Diverse Resources with Highly Concentrated Lithium Content

Albemarle Resource	2019 Operating Capacity (kTa LCE)	Available Resource Capability (kTa LCE)	% Utilization
Atacama CORFO Lease	40	100	40%
50% Greenbushes Interest <sup>1</sup>	40	120	33%
Wodgina <sup>2</sup>	0	100	0%
Silver Peak	5	10	50%
Kings Mountain	-	50	0%
Antofalla	-	TBD	0%
Total <sup>3</sup>	85	> 380	< 25%



Sufficient Resources to Meet the Growth Targets of our Customers into the Next Decade

### II. Disciplined and Measured Plan to Expanding Conversion Capacity



### **Reducing Capital Intensity**

- Deploying standard process flow and equipment in each expansion
- Process technology to gain 10-20% capacity increase (debottleneck) in existing plants
- Technology improvement at existing plants becomes the standard for new plants
- China-focused expansion at significantly lower Capex/MT
- Potential acquisition of Chinese converters vs. Greenfield expansion

Conversion Capacity that is Built to Customer Commitments with Lower Capital Intensity



### III. Driving Operational Excellence to Become World Class and Low Cost

#### **HSE**

• Drive Operational Injury and Illness rate (OII) from 1.0 in 2018, to less than 0.5 in 2019 and 0.2 by 2022, implementing recognized best practices

#### LEAN MANUFACTURING

- Retained 3<sup>rd</sup>-party experts to implement lean manufacturing at La Negra in 2019 and multi-year plan across all plants
- Area of greatest improvements are in reliability, maintenance, and process technology
- Expect to drive down unit costs by >20% over the next 5 years

#### SERVICE AND QUALITY

- 10% improvement in quality and 20% improvement in service levels enabled by:
  - Driving consistent standard operating procedures across all 11 operating sites
  - Enhancing systems and processes in quality assurance and management

#### 2022

Albemarle Lithium will be at world-class standards by 2022

- Operational Excellence journey started in early 2019 at La Negra
- By end of 2021, all Li plants will be operating with Lean Principles in place



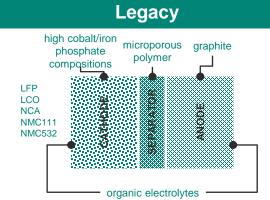


### IV. Creating Value via a Differentiated Experience for Our Customer

WHAT CUSTOMERS VALUE	ALB OFFERING TODAY	ALB FUTURE OFFERINGS
Secure supply / competitive price	✓ LTAs with floor price	Continue to meet customers' needs and provide appropriate returns to Albemarle
Flexible, scalable asset base	✓ 3 Carbonate plants / 3 Hydroxide plants / 3 continents	5 Carbonate plants / 5 Hydroxide plants / 4 continents
Local response / support	✓ Sales offices throughout Asia, Europe, U.S.	Technical support / experts at each sales office
Increased quality / purity standards	✓ Product tailored to requested standard	Setting the standard due to deep knowledge of battery performance and process know-how
R&D in advanced energy storage	✓ BG Carbonate and Hydroxide, LiBOB, and Lithium Sulfide	Innovations in pre-lithiation and metal anodes
Flawless customer experience	✓ Responsive service through 3 global customer service centers	Preferred supplier providing immediate service to customers via a digital interface
Sustainability	✓ Strong foundation with a continued commitment	Industry leader in sustainability

Albemarle Positioned to Sustain its Differentiated Position in the Market Well into the Future

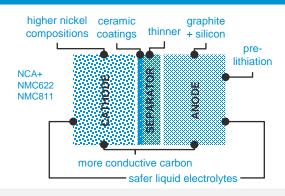
### Lithium Battery Technology Progression Minimally Impacted in Current Environment



-1% CAGR

- Work-horse chemistries will not go away
- Electronics, Shorter-range EV's, Grid Storage, Buses, etc

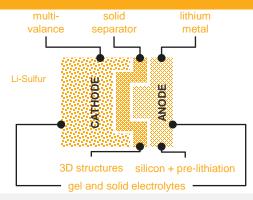
#### **Advanced**



25% CAGR 2018 - 2030

- Increased energy density driving lower costs per kWh and allowing for longer range
- Cathodes shifting to NMC622/811, Anode development continues

#### **Next Frontier**



**70%** CAGR 2018 - 2030

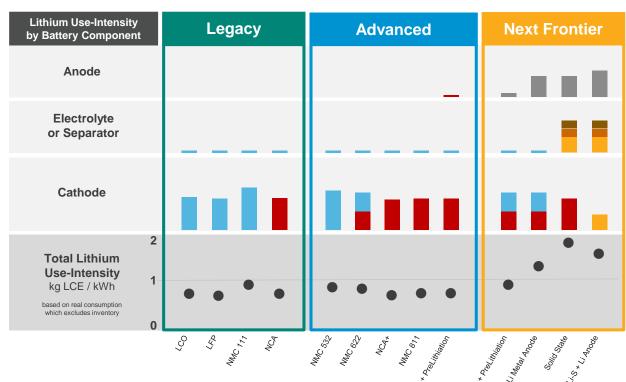
- · Commercial in small scale, specialty applications
- Significant research and innovation underway, large scale adoptions ~ 10 years away

Breadth of products and capabilities needed to remain relevant to battery firms and OEMs

### Driving the Need to New Forms of Lithium Over Next Decade



First principle chemical models used to estimate lithium use by battery cell component and by technology (today and future)



Which Plays to Albemarle's breadth and depth of product line and investment in new technologies

## Putting Sustainability to Work in Lithium

#### Sustainable Business Model

- R&D recycle Lithium from batteries
- R&D innovative materials
- R&D partnerships with national labs, universities, customers

# Community **Engagement**

- Voluntary Cooperation and Sustainability Agreement with Atacameño People's Council; joint monthly meetings
- 3.5% of annual sales to the indigenous community



# Our People & Workplace

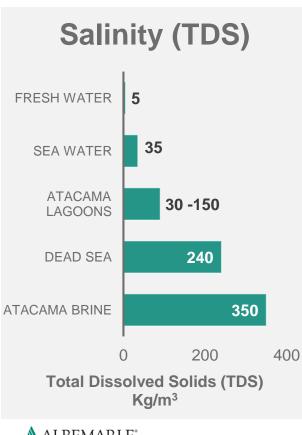
- Strong focus on health and safety with KPI's
- Training and Development: Formal Mentoring Program, Sales Excellence, Lean Manufacturing,

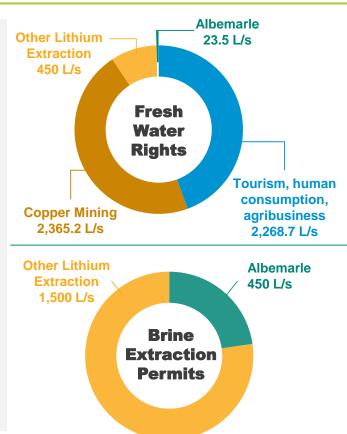
### Natural Resource Management

- New thermal evaporator in La Negra to recycle water
- Use less than half of permitted fresh water in Salar de Atacama
- Use of solar energy for evaporation of brine



### Sustainability Case Study: Brine versus Fresh Water





Source: Anexo1, Adenda 5

#### **Sustainability in the Salar**

- We make up 0.5% of the total fresh water rights; we only use less than half of our allotted water rights
- Brine cannot be used for human consumption or agriculture
- Solar power concentrates the brine
- We monitor 150 wells near the fresh. water/brine interphase; a representative from the indigenous communities accompanies us on each monitoring trip to a well.

For perspective: the water evaporated from brine to produce a Tesla Model 3 is equivalent to the water to produce:

- 250 grams or a half pound of beef
- 30 cups of coffee
- Half a pair of jeans

**▲** ALBEMARLE®

Source: Dr. Maximilian Fichtner, Director at the Helmholtz Institute for Electrochemical Energy Storage.

### Strong Cash Generation Allows ALB to Invest for Growth Throughout the Cycle



Opportunity: Long-term secular EV growth trend intact



**Near-term:** Flexible balance sheet and ability to generate operating cash allow Albemarle to invest for growth through the bottom of the cycle to provide returns for shareholders and critical security of supply for customers

**Medium-term:** We anticipate that the current **excess supply will diminish** in the mid-term as demand increases, particularly for hydroxide

Long-term: Projected growth in lithium demand requires leveraging the largest and most highly concentrated resources in the world, and we have access to the Top 3



**Strengths Needed:** High-quality, low-cost **resources**; specialty **manufacturing** capabilities; **broad product** offering; **customer relationships**; ability to anticipate and **adapt to evolving technology** trends



**ALB Lithium Strategy:** focused on driving **low-cost operations**, disciplined capital expansion, and agility that will provide strong returns **throughout the cycle** 

# Appendix A

**Supplemental Information** 



### Agile, Long-term Strategy that Responds to Changing Market Conditions

Invest in growth and focus on cash generation in Lithium Optimize the earnings and cash of Bromine and Maximize **Catalysts** Build on manufacturing excellence and optimized cost structure Assess Actively and continuously assess our portfolio

Maintain a disciplined approach to capital allocation

while preserving financial flexibility

- Long-term secular demand outlook remains robust for Lithium
- · Continue to build out conversion assets to align with demand
- Reduce overall spend by \$100M+ by 2021 in a sustainable manner; now expecting \$50-\$70M in year one; pulling forward \$10 to \$20 million
- Short-term cash management actions save ~\$25-\$40M per quarter; FY 2020 capex spending down ~\$150M from plan
- New ERP provides catalyst for more effective and efficient operations
- Continue to actively evaluate portfolio; track record of decisive, value-added decision making
- Look to acquire existing lithium conversion assets if the economics make sense and it yields a higher ROIC than building
- Maintain Investment Grade credit rating and support continued dividend growth
- Invest to accelerate productivity improvements and to build or buy lithium conversion assets

nvest

### Q1 2020 Overview: Lithium

#### **Q1 2020 PERFORMANCE**

(\$M)	Q1 2020	ΔQ1 2019
Net Sales	\$237	-19%
Net Sales ex FX¹	\$240	-18%
Adj. EBITDA	\$79	-32%
Adj. EBITDA ex FX¹	\$76	-35%
Adj. EBITDA Margin	33%	(640) bps
Adj. EBITDA Margin ex FX¹	32%	(807) bps

#### **HISTORICAL TREND (TTM)**



#### **Q1 Performance Drivers**

- Net sales down 19% and adjusted EBITDA down 32%
  - Lower contract pricing (reflecting 2020 price adjustments) and reduced volume as customer took excess volume in Q4 2019
  - Partially offset by cost savings initiatives and favorable customer/product mix

#### **Outlook**

- Energy storage/battery grade (BG): anticipating potential H2 2020 impact as battery and cathode producers complete backlog and begin to respond to OEM shutdowns
- Specialties and technical grade (TG): Q2 2020 impact due to customer closures and order cancellations in industrial production (polymer, glass, grease) related to COVID-19

#### **Drivers/Sensitivities**

- Energy storage (~60% of Li sales): Primary driver EV sales in Europe and China
  - Potentially 1 to 2 quarter lag behind EV production
  - Specialties and TG (~40% of Li sales): Primary driver consumer spending and industrial production
    - Less than 1 quarter lag in the downturn, relatively quick rebound in the upturn

## Q1 2020 Overview: Bromine Specialties

#### **Q1 2020 PERFORMANCE**

(\$M)	Q1 2020	ΔQ1 2019
Net Sales	\$232	-7%
Net Sales ex FX¹	\$230	-8%
Adj. EBITDA	\$83	6%
Adj. EBITDA ex FX¹	\$84	7%
Adj. EBITDA Margin	36%	439 bps
Adj. EBITDA Margin ex FX¹	36%	487 bps

#### **HISTORICAL TREND (TTM)**



#### **Q1 Performance Drivers**

- Net sales down 7% due primarily to logistics challenges that shifted some orders into Q2, partially offset by higher pricing
- Adjusted EBITDA up 6% due to cost saving initiatives and lower minority interest expense, which more than offset reduced net sales

#### Outlook

- Q2 2020 EBITDA anticipated to be down ~20% year-over-year
- Reduced demand driven by COVID-19 may begin to impact late Q2 2020 and continue into H2 2020

#### **Drivers/Sensitivities**

- GDP driven business electronics, automotive, construction, appliances
- Flame retardants (~ 50% of sales): Primary driver consumer spending / GDP
  - Driven in part by consumer markets
- Oilfield (< 20% of sales): Primary driver oil price</li>
  - Deep water and off-shore drilling
- ~1 to 3 quarter lag in supply chain; typically rebounds quickly post-recession

# Q1 2020 Overview: Catalysts

#### **Q1 2020 PERFORMANCE**

(\$M)	Q1 2020	ΔQ1 2019
Net Sales	\$207	-18%
Net Sales ex FX¹	\$205	-18%
Adj. EBITDA	\$47	-21%
Adj. EBITDA ex FX¹	\$49	-19%
Adj. EBITDA Margin	23%	(96) bps
Adj. EBITDA Margin ex FX¹	24%	(3) bps

#### **HISTORICAL TREND (TTM)**



#### **Q1 Performance Drivers**

- Net sales down by 18% and adjusted EBITDA down by 21%
  - FCC volume was down from lower transportation fuel consumption as a result of stay-at-home orders and travel restrictions
  - HPC volume was down due to logistics disruptions related to COVID-19

#### **Outlook**

- FCC impacted by stay-at-home orders and travel restrictions; reduced transportation fuel consumption began in Q1 2020 in Asia and is expected to continue into Q2 in the rest of the world
- HPC Q2 order book largely secure; based on prior downturns expect H2 2020 orders to be pushed into 2021 as refineries push out turnarounds

#### **Drivers/Sensitivities**

- FCC: Primary drivers miles driven/transportation fuel consumption
  - Very little lag time with changes in fuel consumption
- HPC: Primary driver environmental sulfur regulations and customer turnarounds
  - 1 to 2 quarter lag into the downturn as refineries push out turnarounds, similar lag in the upturn
- Through cycle, both business are roughly the same size; HPC business is lumpy due to customer turnaround timing

# Accelerating 2020 Sustainable Cost Savings Initiative and Taking Short-Term Cash Management Actions

#### **Albemarle**

- \$100M+ run rate YE 2021,
   \$50-\$70 M in 2020
   of sustainable savings
- \$25-\$40 M per Quarter short-term savings

#### Lithium

- Expect to drive cost down by >20% over next 5 years
- Driving operational excellence in HSE, Lean manufacturing, Service and Quality

### Three Buckets of Identified Cost Savings

# Factory Spend and Operational Efficiency

- Raw material yield and cost
- · Energy and waste

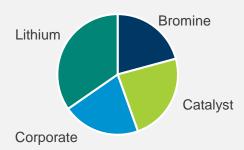
#### Supply Chain

- · Logistics optimization
- Indirect spend outsourcing
- · Facility reduction

## Sales & Administration and IBO

- 3<sup>rd</sup>-party consulting
- IT efficiencies investments and global systems

### **Total Expected Cost Savings by Business Unit**



Relentless Drive to be the Lowest Cost Producer

# Appendix B

Non-GAAP Reconciliations and Supplemental Information



### **Definitions of Non-GAAP Measures**

Non-GAAP Measure	Description
Adjusted net income	Net income attributable to Albemarle Corporation before non-recurring, other unusual and non-operating pension and OPEB.
Pro-forma adjusted net income	Net income attributable to Albemarle Corporation before non-recurring, other unusual and non-operating pension and OPEB items, and the net impact of the divested business.
Adjusted diluted EPS	Diluted EPS before non-recurring, other unusual and non-operating pension and OPEB.
Pro-form adjusted diluted EPS	Diluted EPS before non-recurring, other unusual and non-operating pension and OPEB items, and the net impact of the divested business.
EBITDA	Net income attributable to Albemarle Corporation before interest and financing expenses, income taxes, and depreciation and amortization.
Adjusted EBITDA	EBITDA before non-recurring, other unusual and non-operating pension and OPEB.
Pro-forma adjusted EBITDA	Adjusted EBITDA before the net impact of EBITDA of the divested business.
Pro-forma Net Sales	Net Sales before the impact of Net Sales from the divested business.
Adjusted Effective Income Tax Rate	Reported effective income tax rate before the tax impact of non-recurring, other unusual and non-operating pension and OPEB items.



# Adjusted EBITDA - Continuing Operations (twelve months ended)

	Twelve Months Ended										
(\$ in thousands)		Mar 31, 2019		lun 30, 2019	5	Sep 30, 2019		Dec 31, 2019		Mar 31, 2020	
Net income attributable to Albemarle Corporation	\$	695,371	\$	547,108	\$	572,433	\$	533,228	\$	506,863	
Depreciation and amortization		199,651		202,125		206,905		213,484		217,895	
Non-recurring and other unusual items (excluding items associated with interest expense)		(131,540)		67,457		64,683		117,243		126,793	
Interest and financing expenses		51,453		49,746		47,866		57,695		61,994	
Income tax expense		161,979		112,288		104,462		88,161		69,089	
Non-operating pension and OPEB items		6,899		8,427		10,071		26,970		24,645	
Adjusted EBITDA	\$	983,813	\$	987,151	\$	1,006,420	\$	1,036,781	\$	1,007,279	
Net Sales	\$	3,385,385	\$	3,416,563	\$	3,518,562	\$	3,589,427	\$	3,496,208	
Adjusted EBITDA Margin		29%		29%		29%		29%		29%	

Touches Months Forded



## Adjusted EBITDA - by Segment (twelve months ended)

	Twelve Months Ended									
(\$ in thousands)	Mar 31, 2019			Jun 30, 2019		Sep 30, 2019		Dec 31, 2019	Mar 31, 2020	
Lithium										
Net income attributable to Albemarle Corporation	\$	413,047	\$	413,058	\$	424,881	\$	341,766	\$	301,837
Depreciation and amortization		93,220		93,260		95,102		99,424		102,729
Non-recurring and other unusual items		9,108		9,219		9,384		83,744		83,389
Adjusted EBITDA		515,375		515,537		529,367		524,934		487,955
Net Sales		1,222,025		1,229,220		1,288,678		1,358,170		1,303,102
Adjusted EBITDA Margin		42%		42%		41%		39%		37%
Bromine Specialties										
Net income attributable to Albemarle Corporation	\$	254,453	\$	264,396	\$	271,653	\$	279,945	\$	284,130
Depreciation and amortization		42,291		44,313		46,143		47,611		48,091
Non-recurring and other unusual items						1,142		901		901
Adjusted EBITDA		296,744		308,709		318,938		328,457		333,122
Net Sales		941,293		976,212		999,863		1,004,216		986,756
Adjusted EBITDA Margin		32%		32%		32%		33%		34%
Catalysts										
Net income attributable to Albemarle Corporation	\$	437,803	\$	211,040	\$	214,894	\$	219,686	\$	206,719
Depreciation and amortization		49,173		49,004		49,492		50,144		50,510
Non-recurring and other unusual items		(210,428)		8,277		8,277		794		794
Adjusted EBITDA		276,548		268,321		272,663		270,624		258,023
Net Sales		1,092,485		1,073,820		1,084,027		1,061,817		1,017,376
Adjusted EBITDA Margin		25%		25%		25%		25%		25%

See above for a reconciliation of adjusted EBITDA on a segment basis, the non-GAAP financial measures, to Net income attributable to Albemarle Corporation ("earnings"), the most directly comparable financial measure calculated and reporting in accordance with GAAP.





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