

May 9, 2019



PQ Group Holdings Reports First Quarter 2019 Results; Operating Performance On Track; Reaffirming 2019 Outlook

- Sales of \$359.2 million declined 1.9%; up 1.4% on constant currency basis on stronger pricing and commercial activities in all business segments;
- Net income of \$3.2 million or diluted EPS of \$0.02; Adjusted net income of \$17.5 million or Adjusted diluted EPS of \$0.13;
- Adjusted EBITDA of \$101.0 million; Adjusted EBITDA margin of 26.0%;
- Reaffirming 2019 Financial Guidance including Adjusted free cash flow of \$125 million to \$145 million

MALVERN, Pa.--(BUSINESS WIRE)-- PQ Group Holdings Inc. (NYSE:PQG) ("PQ" or the "Company") reported results for the first quarter ended March 31, 2019. Sales of \$359.2 million were down 1.9% versus the same period in 2018; up 1.4% on a constant currency basis on improved pricing in all business segments. Net income was \$3.2 million or \$0.02 diluted EPS and Adjusted net income was \$17.5 million or \$0.13 Adjusted diluted EPS. Adjusted EBITDA was \$101.0 million, down 6.4% (down 3.8% on a constant currency basis) with Refining Services' strong performance offset by anticipated lower Zeolyst Joint Venture results on customer order timing. Adjusted EBITDA margin was 26.0%.

"Our team's strong commercial execution, particularly in achieving higher prices in all of our business segments, delivered solid operating results," commented Belgacem Chariag, PQ President and Chief Executive Officer. "With firm hydrocracking catalyst orders and expected growth in highway safety demand, we are reaffirming our outlook for 2019."

The financial results and outlook include non-GAAP financial measures. These non-GAAP measures are more fully described and are reconciled from the respective measures determined under GAAP in "Presentation of Non-GAAP Financial Measures" and the attached appendix tables.

Review of Segment Results

Refining Services

Sales of \$105.8 million increased 5.1% and Adjusted EBITDA of \$39.7 million was up 11.8% versus the same period in 2018, largely driven by improved pricing from contract renewals in both regeneration services and virgin sulfuric acid product lines.

Catalysts

Sales of \$15.9 million decreased 3.6%, and were in line on a constant currency basis versus the same period in 2018. Adjusted EBITDA of \$18.1 million decreased 21% largely driven by the anticipated lower Zeolyst Joint Venture results due to timing of customer orders.

Performance Materials

Sales of \$61.1 million decreased 2.6% versus the same period in 2018; sales rose 2.6% on a constant currency basis on improved pricing and product mix. Adjusted EBITDA of \$10.5 million decreased \$1.6 million as a result of higher costs related to the restart of capacity to meet higher demand along with modest inflationary pressures.

Performance Chemicals

Sales of \$180.5 million and Adjusted EBITDA of \$42.7 million decreased 5.0% and 5.3%, respectively; both were in line on a constant currency basis versus the same period in 2018. Improved pricing and product mix were offset by weaker demand in consumer products.

Cash Flows and Balance Sheet

For the three months ended March 31, 2019, cash flows from operating activities increased to \$26.8 million, as compared to \$22.0 million for the same period in 2018. This increase was primarily driven by an increase in net income and favorable changes in working capital.

At March 31, 2019, the Company had cash and cash equivalents of \$52.3 million and total debt outstanding of \$2,146.8 million.

2019 Financial Outlook

The Company reaffirms 2019 guidance as below:

- Sales of \$1,640 million to \$1,670 million
- Adjusted EBITDA of \$470 million to \$485 million
- Adjusted diluted EPS of \$0.75 to \$0.93
- Adjusted free cash flow of \$125 million to \$145 million

Conference Call and Webcast Details

On Thursday, May 9, 2019, PQ management will review the results during a conference call and audio-only webcast scheduled for 11:00 a.m. Eastern Time.

Conference Call: Investors may listen to the conference call live via telephone by dialing 1 (877) 883-0383 (domestic) or 1 (412) 902-6506 (international) and use the participant code 0803621.

Webcast: An audio-only live webcast of the conference call and presentation materials can be accessed at <http://investor.pqcorp.com>.

A replay of the conference call/webcast will be made available at <http://investor.pqcorp.com/events-presentations>.

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About PQ Group Holdings Inc.

PQ Group Holdings Inc. is a leading integrated and innovative global provider of specialty catalysts, materials and chemicals, and services. We support customers globally through our strategically located network of manufacturing facilities. We believe that our products, which are predominantly inorganic, and services contribute to improving the sustainability of the environment.

We have four uniquely positioned specialty businesses: **Catalysts** serves the global refining, petrochemical and emissions control industries; **Refining Services** provides sulfuric acid recycling to the North American refining industry; **Performance Materials** produces transportation reflective safety markings for roads and airports; and **Performance Chemicals** supplies diverse product end uses, including personal and industrial cleaning products, fuel-efficient tires, surface coatings, and food and beverage products.

We serve over 4,000 customers globally across many end uses and operate over 70 manufacturing facilities which are strategically located across six continents. For more information, see our website at <https://www.pqcorp.com>.

Presentation of Non-GAAP Financial Measures

In addition to the results provided in accordance with U.S. generally accepted accounting principles ("GAAP") throughout this press release, the Company has provided non-GAAP financial measures—Adjusted EBITDA, Adjusted EBITDA margin, Adjusted free cash flow, Adjusted net income, Adjusted EPS, Adjusted diluted EPS, constant currency sales and constant currency Adjusted EBITDA—which present results on a basis adjusted for certain items. The Company uses these non-GAAP financial measures for business planning purposes and in measuring its performance relative to that of its competitors. The Company believes that these non-GAAP financial measures are useful financial metrics to assess its operating performance from period-to-period by excluding certain items that the Company believes are not representative of its core business. These non-GAAP financial measures are not intended to replace, and should not be considered superior to, the presentation of the Company's financial results in accordance with GAAP. The use of the terms Adjusted EBITDA, Adjusted EBITDA margin, Adjusted free cash flow, Adjusted net income, Adjusted EPS, Adjusted diluted EPS, constant currency sales and constant currency Adjusted EBITDA may differ from similar measures reported by other companies and may not be comparable to other similarly titled measures. Adjusted EBITDA, Adjusted free cash flow, Adjusted net income, Adjusted EPS, Adjusted diluted EPS, constant currency sales and constant currency Adjusted EBITDA are reconciled from the respective measures under GAAP in the appendix below.

In discussing our operating results, the term currency exchange rates refers to the currency exchange rates we use to convert the operating results for all countries where the functional currency is not the U.S. dollar. We calculate constant currency sales and constant currency Adjusted EBITDA by translating current period results at the prior period's currency

exchange rates. When we refer to constant currency sales and constant currency Adjusted EBITDA, this means sales and Adjusted EBITDA without the impact of the currency exchange rate fluctuations from period-to-period.

The Company is not able to provide a reconciliation of the Company's non-GAAP financial guidance to the corresponding GAAP measures without unreasonable effort because of the inherent difficulty in forecasting and quantifying certain amounts necessary for such a reconciliation such as certain non-cash, nonrecurring or other items that are included in net income and EBITDA as well as the related tax impacts of these items and asset dispositions/acquisitions and changes in foreign currency exchange rates that are included in cash flow, due to the uncertainty and variability of the nature and amount of these future charges and costs.

Zeolyst Joint Venture

The Company's zeolite catalysts product group operates through its Zeolyst Joint Venture, which is accounted for as an equity method investment in accordance with GAAP. The presentation of the Zeolyst Joint Venture's sales represents 50% of the sales of the Zeolyst Joint Venture. The Company does not record sales by the Zeolyst Joint Venture as revenue and such sales are not consolidated within the Company's results of operations. However, the Company's Adjusted EBITDA reflects the share of earnings of the Zeolyst Joint Venture that have been recorded as equity in net income from affiliated companies in the Company's consolidated statements of operations for such periods and includes Zeolyst Joint Venture adjustments on a proportionate basis based on the Company's 50% ownership interest. Accordingly, the Company's Adjusted EBITDA margins are calculated including 50% of the sales of the Zeolyst Joint Venture for the relevant periods in the denominator.

Note on Forward-Looking Statements

Some of the information contained in this press release constitutes "forward-looking statements." Forward-looking statements can be identified by words such as "anticipates," "intends," "plans," "seeks," "believes," "estimates," "expects," "projects" and similar references to future periods. Forward-looking statements are based on our current expectations and assumptions regarding our business, the economy and other future conditions. Because forward-looking statements relate to the future, they are subject to inherent uncertainties, risks and changes in circumstances that are difficult to predict. Examples of forward-looking statements include, but are not limited to, statements regarding our results of operations, financial condition, liquidity, prospects, growth, strategies, product and service offerings and 2019 outlook. Our actual results may differ materially from those contemplated by the forward-looking statements. We caution you, therefore, against relying on any of these forward-looking statements. They are neither statements of historical fact nor guarantees or assurances of future performance. Important factors that could cause actual results to differ materially from those in the forward-looking statements include, but are not limited to, regional, national or global political, economic, business, competitive, market and regulatory conditions, currency exchange rates and other factors, including those described in the sections titled "Risk Factors" and "Management Discussion & Analysis of Financial Condition and Results of Operations" in our filings with the SEC, which are available on the SEC's website at www.sec.gov. These forward-looking statements speak only as of the date of this release. Factors or events that could cause our actual results to differ may emerge from time to time, and it is not possible for us to predict all of them. We

undertake no obligation to update any forward-looking statement, whether as a result of new information, future developments or otherwise, except as may be required by applicable law.

PQ GROUP HOLDINGS INC. AND SUBSIDIARIES
CONDENSED CONSOLIDATED STATEMENTS OF INCOME

	Three months ended March 31,		%
	2019	2018	Change
	(in millions, except percentages, share and per share amounts)		
Sales	\$ 359.2	\$ 366.2	(1.9)%
Cost of goods sold	278.3	288.1	(3.4)%
Gross profit	80.9	78.1	3.6%
Selling, general and administrative expenses	40.7	40.6	0.2%
Other operating expense, net	10.8	9.3	16.1%
Operating income	29.4	28.2	4.3%
Equity in net (income) from affiliated companies	(2.1)	(11.9)	(82.4)%
Interest expense, net	28.6	29.2	(2.1)%
Debt extinguishment costs	—	5.9	(100.0)%
Other (income) expense, net	(3.0)	5.0	(160.0)%
Income before income taxes and noncontrolling interest	5.9	—	NM
Provision (benefit) for income taxes ⁽¹⁾	2.4	(0.5)	NM
Effective tax rate	41.6%	—%	
Net income	3.5	0.5	NM
Less: Net income attributable to the noncontrolling interest	0.3	0.3	—%
Net income attributable to PQ Group Holdings Inc.	\$ 3.2	\$ 0.2	NM
Net income per share:			
Basic income per share	\$ 0.02	\$ —	
Diluted income per share	\$ 0.02	\$ —	
Weighted average shares outstanding:			
Basic	133,946,308	133,154,144	
Diluted	134,894,354	133,884,983	

(1) Net of a \$0.5 million and \$0.4 million provision for Global Intangible Low-Taxed Income ("GILTI") for the three months ended March 31, 2019 and 2018, respectively.

PQ GROUP HOLDINGS INC. AND SUBSIDIARIES
CONDENSED CONSOLIDATED BALANCE SHEETS
(in millions, except share and per share amounts)

	March 31, 2019	December 31, 2018
ASSETS		
Cash and cash equivalents	\$ 52.3	\$ 57.9
Receivables, net	195.7	196.8
Inventories	283.5	264.7
Prepaid and other current assets	38.8	39.2
Total current assets	570.3	558.6
Investments in affiliated companies	464.1	468.2
Property, plant and equipment, net	1,202.0	1,209.0
Goodwill	1,257.0	1,254.9
Other intangible assets, net	714.1	728.4
Right-of-use lease asset	57.2	—

Other long-term assets	117.5	108.3
Total assets	<u>\$4,382.2</u>	<u>\$ 4,327.4</u>
LIABILITIES		
Notes payable and current maturities of long-term debt	\$ 10.7	\$ 7.2
Accounts payable	136.4	148.4
Operating lease liabilities - current	14.5	—
Accrued liabilities	101.2	100.0
Total current liabilities	<u>262.8</u>	<u>255.6</u>
Long-term debt, excluding current portion	2,103.1	2,106.7
Deferred income taxes	197.6	196.1
Operating lease liabilities - noncurrent	41.0	—
Other long-term liabilities	102.5	104.8
Total liabilities	<u>2,707.0</u>	<u>2,663.2</u>
Commitments and contingencies		
EQUITY		
Common stock (\$0.01 par); authorized shares 450,000,000; issued shares 135,982,601 and 135,758,269 on March 31, 2019 and December 31, 2018, respectively; outstanding shares 135,727,810 and 135,592,045 on March 31, 2019 and December 31, 2018, respectively	1.4	1.4
Preferred stock (\$0.01 par); authorized shares 50,000,000; no shares issued or outstanding on March 31, 2019 and December 31, 2018	—	—
Additional paid-in capital	1,678.3	1,674.7
Retained earnings	26.6	25.5
Treasury stock, at cost; shares 254,791 and 166,224 on March 31, 2019 and December 31, 2018, respectively	(4.3)	(2.9)
Accumulated other comprehensive loss	(32.0)	(39.1)
Total PQ Group Holdings Inc. equity	<u>1,670.0</u>	<u>1,659.6</u>
Noncontrolling interest	5.2	4.6
Total equity	<u>1,675.2</u>	<u>1,664.2</u>
Total liabilities and equity	<u>\$4,382.2</u>	<u>\$ 4,327.4</u>

PQ GROUP HOLDINGS INC. AND SUBSIDIARIES
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS

	Three months ended	
	March 31,	
	2019	2018
Cash flows from operating activities:		
Net income	\$ 3.5	\$ 0.5
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation	33.2	34.9
Amortization	12.7	13.6
Amortization of inventory step-up	—	1.6
Amortization of deferred financing costs and original issue discount	1.4	1.6
Debt extinguishment costs	—	3.8
Foreign currency exchange (gain) loss	(2.7)	5.1
Pension and postretirement healthcare benefit expense	1.2	0.8
Pension and postretirement healthcare benefit funding	(3.4)	(3.4)
Deferred income tax provision (benefit)	1.2	(2.6)
Net loss on asset disposals	0.8	1.2
Stock compensation	3.4	3.8
Equity in net (income) from affiliated companies	(2.1)	(11.9)
Dividends received from affiliated companies	5.0	10.8
Net interest income on swaps designated as net investment hedges	(3.9)	—
Other, net	(3.6)	(3.0)
Working capital changes that provided (used) cash:		
Receivables	1.1	(11.1)
Inventories	(19.2)	(19.5)
Prepays and other current assets	2.9	(4.7)
Accounts payable	(3.9)	(7.0)
Accrued liabilities	(0.8)	7.5

Net cash provided by operating activities	26.8	22.0
Cash flows from investing activities:		
Purchases of property, plant and equipment	(33.6)	(33.3)
Net interest proceeds on swaps designated as net investment hedges	3.9	—
Other, net	0.5	0.2
Net cash used in investing activities	(29.2)	(33.1)
Cash flows from financing activities:		
Draw down of revolving credit facilities	32.4	38.6
Repayments of revolving credit facilities	(28.9)	(32.1)
Issuance of long-term debt	—	1,267.0
Debt issuance costs	—	(6.4)
Repayments of long-term debt	(5.0)	(1,261.6)
Stock repurchases	(1.3)	(0.1)
Other, net	0.3	—
Net cash (used in) provided by financing activities	(2.5)	5.4
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(0.7)	(1.5)
Net change in cash, cash equivalents and restricted cash	(5.6)	(7.2)
Cash, cash equivalents and restricted cash at beginning of period	59.7	67.2
Cash, cash equivalents and restricted cash at end of period	<u>\$ 54.1</u>	<u>\$ 60.0</u>

Appendix Table A-1: Reconciliation of Net Income to Segment Adjusted EBITDA

	Three months ended	
	March 31,	
	2019	2018
	(in millions)	
Reconciliation of net income attributable to PQ Group Holdings Inc. to Segment Adjusted EBITDA		
Net income attributable to PQ Group Holdings Inc.	\$ 3.2	\$ 0.2
Provision (benefit) for income taxes	2.4	(0.5)
Interest expense, net	28.6	29.2
Depreciation and amortization	45.9	48.5
EBITDA	80.1	77.4
Joint venture depreciation, amortization and interest ^(a)	3.8	3.3
Amortization of investment in affiliate step-up ^(b)	2.6	1.7
Amortization of inventory step-up ^(c)	—	1.6
Debt extinguishment costs	—	5.9
Net loss on asset disposals ^(d)	0.8	1.2
Foreign currency exchange (gain) loss ^(e)	(2.7)	5.1
LIFO expense ^(f)	10.2	4.9
Transaction and other related costs ^(g)	0.1	0.4
Equity-based compensation	3.4	3.8
Restructuring, integration and business optimization expenses ^(h)	0.7	1.1
Defined benefit pension plan cost ⁽ⁱ⁾	1.0	0.6
Other ^(j)	1.0	0.9
Adjusted EBITDA	101.0	107.9
Unallocated corporate expenses	10.0	7.7
Segment Adjusted EBITDA	<u>\$ 111.0</u>	<u>\$ 115.6</u>

Descriptions to PQ Non-GAAP Reconciliations

(a) We use Adjusted EBITDA as a performance measure to evaluate our financial results. Because our Catalysts segment includes our 50% interest in our Zeolyst Joint Venture, we include an adjustment for our 50% proportionate share of depreciation, amortization and interest expense of our Zeolyst Joint Venture.

- (b) Represents the amortization of the fair value adjustments associated with the equity affiliate investment in our Zeolyst Joint Venture as a result of the combination of the businesses of PQ Holdings Inc. and Eco Services Operations LLC in May 2016 (the "Business Combination"). We determined the fair value of the equity affiliate investment and the fair value step-up was then attributed to the underlying assets of our Zeolyst Joint Venture. Amortization is primarily related to the fair value adjustments associated with fixed assets and intangible assets, including customer relationships and technical know-how.
- (c) As a result of the Sovitec acquisition there was a step-up in the fair value of inventory, which is amortized through cost of goods sold in the statements of income.
- (d) When asset disposals occur, we remove the impact of net gain/loss of the disposed asset because such impact primarily reflects the non-cash write-off of long-lived assets no longer in use.
- (e) Reflects the exclusion of the foreign currency transaction gains and losses in the statements of income primarily relates to the non-permanent intercompany debt denominated in local currency translated to U.S. dollars.
- (f) Represents non-cash adjustments to the Company's LIFO reserves for certain inventories in the U.S. that are valued using the LIFO method, which we believe provides a means of comparison to other companies that may not use the same basis of accounting for inventories.
- (g) Relates to certain transaction costs, including debt financing, due diligence and other costs related to transactions that are completed, pending or abandoned, that we believe are not representative of our ongoing business operations.
- (h) Includes the impact of restructuring, integration and business optimization expenses which are incremental costs that are not representative of our ongoing business operations.
- (i) Represents adjustments for defined benefit pension plan costs in our statements of income. More than two-thirds of our defined benefit pension plan obligations are under defined benefit pension plans that are frozen, and the remaining obligations primarily relate to plans operated in certain of our non-U.S. locations that, pursuant to jurisdictional requirements, cannot be frozen. As such, we do not view such expenses as core to our ongoing business operations.
- (j) Other costs consist of certain expenses that are not core to our ongoing business operations, including environmental remediation-related costs associated with the legacy operations of our business prior to the Business Combination, capital and franchise taxes, non-cash asset retirement obligation accretion and the initial implementation of procedures to comply with Section 404 of the Sarbanes-Oxley Act. Included in this line-item are rounding discrepancies that may arise from rounding from dollars (in thousands) to dollars (in millions).

Appendix Table A-2: Reconciliation of Net Income to Adjusted Net Income⁽¹⁾

	Three months ended March 31,					
	2019			2018		
	Pre-tax	Tax expense (benefit)	After-tax	Pre-tax	Tax expense (benefit)	After-tax
	(in millions)					
Net income before non-controlling interest	\$ 5.9	\$ 2.4	\$ 3.5	\$ —	\$ (0.5)	\$ 0.5
Less: Net income attributable to non-controlling interest	0.3	—	0.3	0.3	—	0.3
Net income attributable to PQ Group Holdings Inc.	5.6	2.4	3.2	(0.3)	(0.5)	0.2
Amortization of investment in affiliate step-up ^(b)	2.6	1.0	1.6	1.7	0.5	1.2
Amortization of inventory step-up ^(c)	—	—	—	1.6	0.5	1.1
Debt extinguishment costs	—	—	—	5.9	1.8	4.1
Net loss on asset disposals ^(d)	0.8	0.3	0.5	1.2	0.4	0.8
Foreign currency exchange (gain) loss ^(e)	(2.7)	(0.7)	(2.0)	5.1	2.2	2.9
LIFO expense ^(f)	10.2	3.7	6.5	4.9	1.5	3.4
Transaction and other related costs ^(g)	0.1	—	0.1	0.4	0.1	0.3
Equity-based compensation	3.4	1.2	2.2	3.8	1.2	2.6
Restructuring, integration and business optimization expenses ^(h)	0.7	0.2	0.5	1.1	0.4	0.7
Defined benefit plan pension cost ⁽ⁱ⁾	1.0	0.4	0.6	0.6	0.2	0.4
Other ^(j)	1.0	0.4	0.6	0.9	0.2	0.7
Adjusted Net Income, including non-cash GILTI tax	22.7	8.9	13.8	26.9	8.5	18.4

Impact of non-cash GILTI tax ⁽²⁾	—	(3.7)	3.7	—	(2.5)	2.5
Adjusted Net Income ⁽¹⁾	<u>\$ 22.7</u>	<u>\$ 5.2</u>	<u>\$ 17.5</u>	<u>\$ 26.9</u>	<u>\$ 6.0</u>	<u>\$ 20.9</u>
Adjusted Net Income per share:						
Basic income per share			\$ 0.13			\$ 0.16
Diluted income per share			\$ 0.13			\$ 0.16
Weighted average shares outstanding:						
Basic			133,946,308			133,154,144
Diluted			134,894,354			133,884,983

See Appendix Table A-1 for Descriptions to PQ Non-GAAP Reconciliations in the table above.

(1) We define adjusted net income as net income attributable to PQ Group Holdings adjusted for non-operating income or expense and the impact of certain non-cash or other items that are included in net income that we do not consider indicative of our ongoing operating performance. Adjusted net income is presented as a key performance indicator as we believe it will enhance a prospective investor's understanding of our results of operations and financial condition. Adjusted net income may not be comparable with net income or adjusted net income as defined by other companies.

(2) Amount represents the impact to tax expense in net income before non-controlling interest and the related adjustments to net income associated with GILTI provisions of the Tax Cuts and Jobs Act of 2017 ("TCJA"). Beginning January 1, 2018, GILTI results in taxation of "excess of foreign earnings," which is defined as amounts greater than a 10% rate of return on applicable foreign tangible asset basis. The Company is required to record incremental tax provision impact with respect to GILTI as a result of having historical U.S. net operating loss ("NOL") amounts to offset the GILTI taxable income inclusion. This NOL utilization precludes us from recognizing foreign tax credits ("FTCs") which would otherwise help offset the tax impacts of GILTI. No FTCs will be recognized with respect to GILTI until our cumulative NOL balance has been exhausted. Because the GILTI provision does not impact our cash taxes (given available U.S. NOLs), and given that we expect to recognize FTCs to offset GILTI impacts once the NOLs are exhausted, we do not view this item as a component of core operations.

Appendix Table A-3: Business Segment Sales and Adjusted EBITDA

	Three months ended		
	March 31,		
	2019	2018	% Change
	(in millions, except percentages)		
Sales:			
Refining Services	\$ 105.8	\$ 100.7	5.1%
Catalysts	15.9	16.5	(3.6)%
Performance Materials	61.1	62.7	(2.6)%
Performance Chemicals	180.5	190.0	(5.0)%
Eliminations	(4.1)	(3.7)	
Total sales	<u>\$ 359.2</u>	<u>\$ 366.2</u>	<u>(1.9)%</u>
Zeolyst joint venture sales	\$ 29.5	\$ 38.3	(23.0)%
Adjusted EBITDA:			
Refining Services	\$ 39.7	\$ 35.5	11.8%
Catalysts	18.1	22.9	(21.0)%
Performance Materials	10.5	12.1	(13.2)%
Performance Chemicals	42.7	45.1	(5.3)%
Total Segment Adjusted EBITDA	<u>\$ 111.0</u>	<u>\$ 115.6</u>	<u>(4.0)%</u>
Corporate	(10.0)	(7.7)	29.9%
Total Adjusted EBITDA	<u>\$ 101.0</u>	<u>\$ 107.9</u>	<u>(6.4)%</u>
Adjusted EBITDA Margin:			
Refining Services	37.5%	35.3%	
Catalysts	40.0%	41.8%	
Performance Materials	17.2%	19.3%	
Performance Chemicals	23.7%	23.7%	

Total Adjusted EBITDA Margin⁽¹⁾ 26.0% 26.7%

(1) Adjusted EBITDA margin calculation includes proportionate 50% share of sales from the Zeolyst joint venture.

Appendix Table A-4: Constant Currency Sales and Adjusted EBITDA

The table below reflects the calculation of constant currency sales and constant currency Adjusted EBITDA by segment for the three months ended March 31, 2019.

	Three months ended March 31, 2019			Three months ended March 31, 2018	
	As Reported	FX	Constant Currency	As Reported	% Change
	(in millions, except percentages)				
Sales:					
Refining Services	\$ 105.8	\$ —	\$ 105.8	\$ 100.7	5.1%
Catalysts	15.9	0.6	16.5	16.5	—%
Performance Materials	61.1	3.2	64.3	62.7	2.6%
Performance Chemicals	180.5	8.6	189.1	190.0	(0.5)%
Eliminations	(4.1)	(0.1)	(4.2)	(3.7)	13.5%
Total sales	<u>\$ 359.2</u>	<u>\$ 12.3</u>	<u>\$ 371.5</u>	<u>\$ 366.2</u>	1.4%
Zeolyst joint venture sales	\$ 29.5	\$ —	\$ 29.5	\$ 38.3	(23.0)%
Adjusted EBITDA:					
Refining Services	\$ 39.7	\$ —	\$ 39.7	\$ 35.5	11.8%
Catalysts	18.1	0.4	18.5	22.9	(19.2)%
Performance Materials	10.5	0.3	10.8	12.1	(10.7)%
Performance Chemicals	42.7	2.2	44.9	45.1	(0.4)%
Total Segment Adjusted EBITDA	<u>\$ 111.0</u>	<u>\$ 2.9</u>	<u>\$ 113.9</u>	<u>\$ 115.6</u>	(1.5)%
Corporate	(10.0)	(0.1)	(10.1)	(7.7)	31.2%
Total Adjusted EBITDA	<u>\$ 101.0</u>	<u>\$ 2.8</u>	<u>\$ 103.8</u>	<u>\$ 107.9</u>	(3.8)%

Appendix Table A-5: Adjusted Free Cash Flow

	Three months ended March 31,	
	2019	2018
	(in millions)	
Net cash provided by operating activities	\$ 26.8	\$ 22.0
Less:		
Purchases of property, plant and equipment ⁽¹⁾	33.6	33.3
Free cash flow	<u>(6.8)</u>	<u>(11.3)</u>
Adjustments to free cash flow:		
Net interest proceeds on currency swaps	3.9	—
Adjusted free cash flow ⁽²⁾	<u>\$ (2.9)</u>	<u>\$ (11.3)</u>
Net cash used in investing activities ⁽³⁾	\$ (29.2)	\$ (33.1)

Net cash (used in) provided by financing activities \$ (2.5) \$ 5.4

(1) Excludes the Company's proportionate 50% share of capital expenditures from the Zeolyst joint venture.

(2) We define adjusted free cash flow as net cash provided by operating activities less purchases of property, plant and equipment, adjusted for proceeds from sale of assets and net interest proceeds on swaps designated as net investment hedges. Adjusted free cash flow is a non-GAAP financial measure that we believe will enhance a prospective investor's understanding of our ability to generate additional cash from operations, including the reduction in cash paid for interest related to our cross-currency interest rate swaps, and is an important financial measure for use in evaluating our financial performance. Our presentation of adjusted free cash flow is not intended to replace, and should not be considered superior to, the presentation of our net cash provided by operating activities determined in accordance with GAAP. Additionally, our definition of adjusted free cash flow is limited, in that it does not represent residual cash flows available for discretionary expenditures, due to the fact that the measure does not deduct the payments required for debt service and other contractual obligations or payments made for business acquisitions. Therefore, we believe it is important to view adjusted free cash flow as a measure that provides supplemental information to our consolidated statements of cash flows.

(3) Net cash used in investing activities includes purchases of property, plant and equipment, proceeds on sale of assets and net interest proceeds on swaps designated as net investment hedges, which are also included in our computation of adjusted free cash flow.

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