

M. Scott Crocco
Senior Vice President and Chief Financial Officer
Air Products and Chemicals, Inc.
7201 Hamilton Boulevard, Allentown, PA 18195-1501
croccoms@airproducts.com
T 610-481-6931 F 610-709-5367
www.airproducts.com



3 October 2016

Melissa N. Rocha
Senior Assistant Chief Accountant Office of Manufacturing and Construction
U.S. Securities and Exchange Commission
Division of Corporation Finance
100 F Street, NE
Washington, D.C. 20549

RE: Air Products and Chemicals, Inc.
Form 8-K Filed July 28, 2016
File No. 1-04534

Dear Ms. Rocha:

We have provided the information below in response to your letter dated September 26, 2016. Our responses have been numbered to correspond with the comments in your letter. The original comments contained in your letter have been included in bold type for reference during your review.

* * * * *

Comment 1

We note you present adjusted Return on Capital Employed (ROCE) in your discussion of third quarter 2016 results without presenting ROCE calculated using the most comparable GAAP amounts. In your next earnings release, please follow the guidance in Question 102.10 of the updated Non-GAAP Compliance and Disclosure Interpretations issued on May 17, 2016 to present this ratio on a GAAP basis with equal or greater prominence.

Response:

The Company acknowledges the Staff's comment and respectfully advises the Staff that we intend to update future filings to calculate ROCE using the most comparable GAAP amounts and to present ROCE on a GAAP basis with equal or greater prominence.

Comment 2

On page 2 of your earnings release, your CEO is quoted as referring to “EPS,” “EBITDA Margin,” and “ROCE,” which are presented on an adjusted basis despite no indication of that in the quote. All three are non-GAAP measures and EBITDA margin is calculated by excluding more than interest, taxes, depreciation, and amortization from earnings. In future earnings releases, please ensure that your measures are appropriately characterized throughout, including in the executive commentary.

Response:

The Company acknowledges the Staff’s comment and respectfully advises the Staff that any Non-GAAP measures included in future filings will be appropriately characterized, including those stated in the executive commentary.

Comment 3

We note that you omit a quantitative reconciliation with respect to your forward looking non-GAAP guidance, but you do not provide the disclosures required when the reconciliation is omitted. In your next earnings release, please follow the guidance in Question 102.10 of the updated Non-GAAP Compliance and Disclosure Interpretations issued on May 17, 2016.

Response:

We acknowledge the Staff’s comment and respectfully advise the Staff that future filings incorporating forward-looking non-GAAP measures in reliance on the “unreasonable efforts” exception in Item 10(e)(1)(i)(B) of Regulation S-K will disclose that fact and identify the information that is unavailable.

When we provide adjusted EPS guidance in future earnings releases, we will incorporate language similar to the following disclosure:

“Management has provided the following adjusted diluted EPS guidance on a continuing operations basis. It is not possible, without unreasonable efforts, to identify the amount or significance of events or transactions that may be included in future GAAP EPS but which management does not believe to be representative of underlying business performance. Accordingly, management is unable to reconcile, without unreasonable effort, the Company’s forecasted range of adjusted EPS to a comparable GAAP range.”

For example, during the nine months ended 30 June 2016 we recognized business restructuring and business separation costs that would have been difficult to identify in advance in order to include in a GAAP outlook. To the extent we can identify and reasonably estimate future items that we plan to adjust in our presentation of the GAAP to non-GAAP reconciliation of EPS, we will include them in guidance comments provided in our earnings release.

Comment 4

In your next earnings release, please provide a more substantive, and concise, discussion of how your non-GAAP measures are useful to investors. Please provide us with your proposed changes in your response letter.

Response:

We acknowledge the Staff's comment and respectfully advise the Staff that we will provide a more substantive and concise discussion of how our non-GAAP measures are useful to investors in future filings. Within the Reconciliation of Non-GAAP Financial Measures, we propose to update our discussion as follows:

"The Company has presented certain financial measures on a non-GAAP ("adjusted") basis and has provided a reconciliation to the most directly comparable financial measure calculated in accordance with GAAP. These financial measures are not meant to be considered in isolation or as a substitute for the most directly comparable financial measure calculated in accordance with GAAP. The Company believes these non-GAAP measures provide investors, potential investors, securities analysts and others with useful information to evaluate the performance of the business, because such measures, when viewed together with our financial results computed in accordance with GAAP, provide a more complete understanding of the factors and trends affecting our historical financial performance and projected future results.

In many cases, our non-GAAP measures are determined by adjusting the most directly comparable GAAP financial measure to exclude certain disclosed items that we believe are not representative of the underlying business performance. For example, Air Products is currently executing its strategic plan to restructure the Company and to focus on the Company's core Industrial Gases businesses, which has and will continue to result in significant disclosed items that we believe are important for investors to understand separately from the performance of the underlying business. In evaluating these financial measures, the reader should be aware that we may incur expenses similar to those eliminated in this presentation in the future. Investors should also consider the limitations associated with these non-GAAP measures, including the potential lack of comparability of these measures from one company to another."

Comment 5

Please revise future earnings releases to separate the tax impact attributable to the repatriation of the South Korean subsidiary's earnings from the business separation costs. See Question 102.11 of the updated Non-GAAP Compliance and Disclosure Interpretations issued on May 17, 2016.

Response:

We acknowledge the Staff's comment and respectfully advise the Staff that we will revise future filings to separate the tax impact attributable to the repatriation of the South Korean subsidiary's earnings from business separation costs.

Comment 6

Please explain how you calculated the income tax effects of your non-GAAP adjustments in your next earnings release. Also, tell us why the tax rate for the total pre-tax adjustments from continuing operations attributable to Air Products is 15% for the nine-month period ended June 30, 2016, excluding repatriation. See Question 102.11 of the updated Non-GAAP Compliance and Disclosure Interpretations issued on May 17, 2016.

Response:

We acknowledge the Staff's comment and respectfully advise the Staff that we will explain how the income tax effects of our non-GAAP measures were calculated in our next earnings release.

For the nine month period ended 30 June 2016, the effective tax rate for the total of pre-tax adjustments from continuing operations attributable to Air Products, excluding the repatriation of the South Korean subsidiary's earnings, was 13.2%. A significant portion of the business separation costs are not tax deductible because they are directly related to the plan for a tax-free spinoff of the Electronic Materials business. In addition, we incurred \$2.0 million of other tax costs related to the separation. The effective tax rate on the business restructuring and cost reduction actions and pension settlement losses is 28.1% and 38.9%, respectively, reflecting statutory rates in the relevant jurisdictions. The table below summarizes these impacts.

<u>Non-GAAP Adjustment</u>	<u>Pre-tax</u>	<u>Tax</u>	<u>After-tax</u>	<u>Effective Tax Rate</u>
Business separation costs	\$28.9	\$(0.5)	\$ 29.4	-1.7%
Business restructuring and cost reduction actions	22.8	6.4	16.4	28.1%
Pension settlement loss	3.6	1.4	2.2	38.9%
Total adjustment	<u>\$55.3</u>	<u>\$ 7.3</u>	<u>\$ 48.0</u>	<u>13.2%</u>

Comment 7

Please revise your reconciliation of Earnings after Tax – Non-GAAP to begin with net income rather than a measure that is not on the face of your consolidated income statements and does not include income taxes. See Question 103.02 of the updated Non-GAAP Compliance and Disclosure Interpretations issued on May 17, 2016.

Response:

We acknowledge the Staff's comment and respectfully advise the Staff that we will revise our reconciliation of Earnings after Tax- Non-GAAP to begin with GAAP net income.

In connection with this response, management acknowledges that:

- The Company is responsible for the adequacy and accuracy of the disclosure in the filing;
- Staff comments or changes to disclosure in response to Staff comments do not foreclose the Commission from taking any action with respect to the filing; and
- The Company may not assert Staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

Should the Staff require any additional information, please contact me at 610-481-6931.

Sincerely,

A handwritten signature in black ink that reads "M. Scott Crocco". The signature is written in a cursive, flowing style.

M. Scott Crocco
Senior Vice President and Chief Financial Officer