

John Cash, Accounting Branch Chief
 Division of Corporation Finance
 United States Securities and Exchange Commission
 Washington, D.C. 20549

Re: Cabot Corporation
File No. 1-5667

Dear Mr. Cash:

This letter is being submitted in response to the Staff's comment letter of March 7, 2014 in respect of Cabot Corporation's Form 10-K for the fiscal year ended September 30, 2013 and Form 10-Q for the quarter ended December 31, 2013. For ease of reference, we have restated the Staff's comments before our responses below.

Form 10-K for the Year Ended September 30, 2013

Management's Discussion and Analysis..., page 32

Goodwill and Long-Lived Assets, page 34

1. You disclose on page 34 that your Purification Solutions business had goodwill of \$466 million as of September 30, 2013 and that the growth of this reporting unit is highly dependent on the growth in the mercury removal portion of this business. Please tell us if the estimated fair value of your Purification Solutions reporting unit substantially exceed the carrying value of this reporting unit as of your most recent goodwill impairment test.

Cabot Response:

The Purification Solutions reporting unit was created with the acquisition of Norit on July 31, 2012. Because this reporting unit consists solely of the acquired business, its carrying value equaled its fair value as of the acquisition date. During our annual goodwill impairment test performed as of May 31, 2013, we determined that the fair value of the Purification Solutions reporting unit exceeded its carrying value by approximately 20%, which we determined to be substantial. This determination was based upon facts and circumstances, including the excess of fair value over carrying value, taking into account the level of uncertainty associated with the methods and assumptions used in the impairment testing. Notably, those assumptions included the expected growth in earnings from the mercury removal portion of the Purification Solutions business, which represent management's best estimates and we believe are reasonable. As disclosed in our Form 10-K *Goodwill and Long-Lived Assets*, page 34 "This growth relies upon the adoption and enforcement of environmental laws and regulations, particularly those that would require U.S. based coal fired electrical utilities to reduce the quantity of air pollutants they release, including mercury, to comply with the Mercury and Air Toxics Standards that become effective in April 2015."

2. As a related matter, if any of your reporting units are at risk of failing step one of the impairment test (e.g. reporting units have estimated fair values that are not substantially in excess of the carrying value), please revise your future filings to disclose the following:
 - The percentage by which fair value exceeded carrying value as of the date of your most recent goodwill impairment test;
 - The amount of goodwill allocated to the reporting unit;
 - A description of the methods and key assumptions used and how the key assumptions were determined;
 - A discussion of the degree of uncertainty associated with the key assumptions. The discussion regarding uncertainty should provide specifics to the extent possible (e.g., the valuation model assumes recovery from a business downturn within a defined period of time); and
 - A description of potential events and/or changes in circumstances that could reasonably be expected to negatively affect the key assumptions.

If you have determined that the estimated fair value substantially exceeds the carrying value for all of your reporting units, please disclose this determination. Please refer to Item 303 of Regulation S-K and Sections 216 and 501.14 of the Financial Reporting Codification for guidance.

Cabot Response:

The results of our most recent goodwill impairment test indicated that the fair value of each of our four reporting units substantially exceeded the carrying value. The reporting unit with the most significant goodwill balance is Purification Solutions. As such, we disclose more details around the assumptions used in its goodwill impairment test given its significance. In future filings, we will include substantially the following disclosure in our critical accounting policies “Goodwill and Long-Lived Assets” in the MD&A section and our significant accounting policies footnote “Intangible Assets and Goodwill” (the new disclosures are underlined):

“... The fair value of a reporting unit is based on discounted estimated future cash flows. The assumptions used to estimate fair value include management’s estimates of future growth rates, operating cash flows, capital expenditures, and discount rates over an estimate of the remaining operating period at the reporting unit level. Should the fair value of any of our reporting units decline because of reduced operating performance, market declines, or other indicators of impairment, or as a result of changes in the discount rate, charges for impairment may be necessary. The future growth in the Purification Solutions business, which had \$[XXX] million of goodwill at [XXX], 2014, is highly dependent on the growth in the mercury removal portion of this business. This growth relies upon achieving the expected volumes and margins in the mercury removal portion of this business and significantly depends on the adoption and enforcement of environmental laws and regulations, particularly those that would require U.S. based coal fired electrical utilities to reduce the quantity of air pollutants they release, including mercury, to comply with the Mercury and Air Toxics Standards that become effective in April 2015. The annual review is performed as of May 31. Based on our most recent annual goodwill impairment test, the fair values of all of our reporting units were substantially in excess of their carrying values...”

Reinforcement Materials, page 46

3. *We note that the fiscal year 2013 decrease in Reinforcement Materials sales and EBIT were driven, in part, by lower prices, a less favorable product mix and lower volumes. Please show us how you will expand your disclosures in future filings to explain the underlying causes of lower prices, a less favorable product mix and lower volumes. Please also consider discussing EBIT as a percentage of sales. Please address this comment as it relates to all your segment sales and EBIT discussions.*

Cabot Response:

We have set forth below the discussion of the fiscal 2013 results of our Reinforcement Materials business, expanded to include a discussion of the underlying causes of lower prices, a less favorable product mix and lower volumes (see underlined text). In future filings, we will expand our disclosure of our results to include more discussion of the underlying causes of changes in prices, product mix, volumes and similar factors affecting results, as relevant, in our segment sales and EBIT discussions.

“In fiscal 2013, sales in Reinforcement Materials decreased by \$117 million when compared to fiscal 2012. The decrease was principally driven by a less favorable price and product mix (combined \$54 million), the unfavorable impact of foreign currency translation (\$41 million), and 1% lower volumes (\$23 million). The less favorable price and product mix was primarily due to price adjustments to customers for decreases in raw material costs and lower prices as a result of a more competitive market environment in Asia and Europe. Lower volumes were primarily due to a weak economic environment in Europe and a supply disruption at one of our plants in Japan...

...In fiscal 2013, Reinforcement Materials EBIT decreased by \$39 million when compared to fiscal 2012 driven principally by lower unit margins (\$27 million) that resulted from lower prices and a less favorable product mix, lower volumes (\$7 million), and higher fixed manufacturing costs (\$7 million) primarily from higher utility costs. Lower unit margins were driven by lower prices as a result of a more competitive market environment in Asia and Europe...

In response to your comment to consider discussion of EBIT as a percentage of sales, we note that EBIT as a percentage of sales may be significantly affected by changes in net sales as a result of increases or decreases in prices based on the price adjustment to customers for increases or decreases in raw material costs. Therefore, we do not include a discussion of EBIT as a percentage of sales because we do not believe it is an indicator of business performance. Instead we discuss changes in EBIT from period to period which we believe is a better indicator of business performance.

Form 10-Q for the Period Ended December 31, 2013

Management's Discussion and Analysis of Financial Condition and Results of Operations, page 32

Intangible Assets and Goodwill, page 33

4. *In your January 30, 2014 earnings call discussing results for the first quarter of fiscal 2014, Mr. Prevost indicated that the Purification Solutions segment "experienced another difficult quarter due to lower volumes and operational issues." In addition, he indicated that as a result of these operational issues, the Company needed to "reposition expectations for the 2014 Purification Solutions EBITDA performance." Please tell us how you considered ASC 350-20-35-30 in determining the need for an interim goodwill impairment evaluation for the Purification Solutions reporting unit in light of these adjusted performance expectations.*

Cabot Response:

In accordance with ASC 350-20-35-30, we determined that no events occurred or circumstances changed that would more likely than not reduce the fair value of the reporting unit below its carrying amount during the first quarter of fiscal 2014.

Although the results of the Purification Solutions segment in fiscal 2014 will not meet our initial expectations, we believe these results will be consistent with fiscal 2013 results. Our expectations remain substantially unchanged for the future years in terms of growth and levels of profitability, notably in the mercury removal portion of this business, which we expect will contribute a significant portion to the estimated future cash flows used in our impairment analysis. There have been no changes to the timing or substance of the Mercury and Air Toxics Standards regulation. We believe that the weaker than expected results in our Purification Solutions business are mostly temporary in nature and not an indication of long term future cash flows used to determine the fair value of the reporting unit.

As requested, in connection with responding to the Staff's comments, the Company hereby acknowledges that (i) the Company is responsible for the adequacy and accuracy of the disclosure in its filings, (ii) 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 (iii) 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.

We would be happy to discuss any of our responses with you at your convenience. Please do not hesitate to call Jim Kelly, Cabot's Controller, at 617-342-6020 with any questions concerning our financial statements, and Jane Bell, Cabot's Corporate Secretary and Chief Counsel – Securities and Governance, at 617-342-6035 with any questions concerning legal matters.

Very truly yours,

/s/ Eduardo E. Cordeiro

Eduardo E. Cordeiro
Executive Vice President and
Chief Financial Officer

Cc: Patrick M. Prevost
Brian A. Berube
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Jane A. Bell
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