

Rufus Decker, Accounting Branch Chief
Division of Corporation Finance
United States Securities and Exchange Commission
100 F Street, N.E., Mail Stop 4631
Washington, D.C. 20549-4631

Re: Cabot Corporation
File No. 001-05667

Dear Mr. Decker:

This letter is being submitted in response to the Staff's comment letter of January 25, 2010 in respect of Cabot Corporation's Form 10-K for the fiscal year ended September 30, 2009. For ease of reference, we have restated the Staff's comments before our responses below.

Item 1 – Business, page 3

Research and Development, page 11

1. *In future filings please include a cross-reference here to your discussion on page 39 regarding your Research and Technical Expenses.*

Cabot Response:

In future 10-K filings, we will include a cross-reference to our discussion set forth in the Results of Operations section of the MD&A regarding our Research and Technical Expenses in substantially the following form:

“Further discussion of our research and technical expenses incurred in each of the fiscal years ended September 30, 20XX, 20XX and 20XX appears in Management's Discussion and Analysis of Financial Condition and Results of Operations in Item 7.”

Legal Proceedings, page 21

Environmental Proceedings, page 21

2. *We note your April 11, 2008 response to comment three of our letter dated March 28, 2008. We further note that at the end of the fourth paragraph you continue to disclose that the claims relative to Cabot are without merit without explaining the basis of such belief. Please advise or otherwise in future filings comply with our prior comment three in full.*

Cabot Response:

We acknowledge both your comment and our previous response to the Staff. This was an oversight on our part. In future filings, if we include a discussion of the environmental-related lawsuits in Campana, Argentina, we confirm that we will delete language stating that the claims relative to Cabot are without merit unless we include an explanation of the basis for our belief. We will continue to re-assess the materiality of these proceedings to determine whether a discussion of these proceedings in future filings is necessary.

3. *In future filings please ensure your disclosure in this section complies with Item 103 of Regulation S-K, including disclosure about the name of the court or agency in which a proceeding is pending, the date instituted, the parties thereto, a description of the factual basis alleged to underlie the proceeding and the relief sought. Please refer in particular to instruction 2 of Item 103 of Regulation S-K.*

Cabot Response:

In future filings we will ensure that our disclosure in this section complies with Item 103 of Regulation S-K, including disclosure about the name of the court or agency in which a proceeding is pending, the date instituted, the parties thereto, a description of the factual basis alleged to underlie the proceeding and the relief sought.

Respirator Liabilities, page 22

4. *We note your proposed disclosure in response to comment four of our letter dated March 28, 2008. We are unable to locate disclosure regarding your total cash payments with respect to the Aearo-related liabilities, as indicated at the end of your proposed disclosure. Please advise, or otherwise, in future filings ensure that your revised disclosure is responsive to our prior comment.*

Cabot Response:

We acknowledge our previous response to the Staff related to this matter. However, based upon our understanding of the requirements of Item 103 of Regulation S-K, we concluded that disclosure of cash payments made by the Company in connection with respirator claims was more appropriate within Note T - Commitments and Contingencies. Accordingly, Note T - Commitments and Contingencies, of our 10-K, on page 98, contains the following disclosure

regarding our annual cash payments for respirator claims: “Cash payments were \$2 million, \$2 million and \$1 million during fiscal 2009, 2008 and 2007, respectively, related to this liability.” This disclosure also includes a discussion of the Aearo payment arrangement. Nonetheless, in future filings, we will include disclosure regarding our annual cash payments with respect to respirator claims in both the Commitments and Contingencies note to our consolidated financial statements and in the description of this matter in the legal proceedings section of our 10-K filings, to the extent such information continues to be appropriate.

Item 7 – Management’s Discussion and Analysis of Financial Condition and Results of Operations, page 29

Critical Accounting Policies, page 29

Goodwill and Other Intangible Assets and Valuation of Long-Lived Assets, page 31

5. *In the interest of providing readers with a better insight into management’s judgments in accounting for goodwill, please disclose the following in future filings:*

- *The reporting unit level at which you test goodwill for impairment and your basis for that determination;*
- *How you weight each of the methods used to value goodwill, including the basis for that weighting;*
- *How the methodologies used for valuing goodwill in the current year have changed since the prior year; and*
- *To the extent that any of your reporting units have estimated fair values that are not substantially in excess of the carrying value and to the extent that goodwill for these reporting units, in the aggregate or individually, if impaired, could materially impact your operating results, please provide the following disclosures for each of these reporting units in future filings:*
 - a. *Identify the reporting unit;*
 - b. *The percentage by which fair value exceeds the carrying value as of the most recent step one test;*
 - c. *The amount of goodwill;*
 - d. *A description of the assumptions that drive the estimated fair value;*
 - e. *A discussion of the uncertainty associated with the key assumptions. For example, to the extent that you have included assumptions in your discounted cash flow model that materially deviates from your historical results, please include a discussion of these assumptions; and*
 - f. *A discussion of any potential events and/or circumstances that could have a negative effect to the estimated fair value.*

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 also provide the above disclosures, as applicable, for any long-lived assets or asset groups for which you have determined that undiscounted cash flows is not substantially in excess of the carrying value and to the extent that the asset amounts, in the aggregate or individually, could materially impact your operating results or total shareholder’s equity. Please refer to Item 303 of Regulation S-K and Sections 216 and 501.14 of the SEC’s Codification of Financial Reporting Policies for guidance. Please show us in your supplemental response what the revisions will look like.

Cabot Response:

In response to your request, in future filings the Company will enhance its disclosures regarding the results of its latest annual goodwill impairment test as well as provide greater discussion of the judgments and considerations made by management in performing the impairment tests relating to both goodwill and other long-lived assets. In addition, to the extent the Company has a situation where long-lived assets or reporting units have estimated fair values that are not substantially in excess of the carrying value, and the potential impairment could materially impact our operating results, we will disclose additional information regarding the long-lived assets or reporting unit(s) affected substantially in accordance with the information identified in your comment above.

We intend to include in our 10-Q for the quarter ended December 31, 2009 our enhanced disclosure relating to this matter, substantially as follows:

“Goodwill and Long-Lived Assets

Goodwill is comprised of the cost of business acquisitions in excess of the fair value assigned to the net tangible and identifiable intangible assets acquired. Goodwill is not amortized but is reviewed for impairment annually, or when events or changes in the business environment indicate that the carrying value of the reporting unit may exceed its fair value. The annual review is performed as of the period ending March 31 of each year.

For the reporting units that carry goodwill balances, our impairment test consists of a comparison of each reporting unit’s carrying value to its estimated fair value. A reporting unit, for the purpose of the impairment test, is at or one level below the operating segment level. The operating segment is presented in accordance with the FASB’s authoritative guidance on segment disclosures. We have five reporting segments, and six reporting units for the impairment review. Our six reporting units are Rubber Blacks, Performance Products, Supermetals, Fumed Metal Oxides, Specialty Fluids, and New Business. The estimated fair value of a reporting unit is primarily based on discounted estimated future cash flows, and secondarily we validate this model by considering other factors such as the fair value of comparable companies to our reporting units, and a reconciliation of the fair value of all our reporting units to our overall market capitalization. The assumptions used to estimate the discounted cash flows are based on our best estimates about selling prices, production and sales volumes, costs, future growth rates, capital expenditures and market conditions over an estimate of the remaining operating period at the reporting unit level. The discount rate is based on the weighted average cost of capital that is determined by evaluating the risk free rate of return, cost of debt, and expected equity premiums. If an impairment exists, a loss is recorded to write-

down the value of goodwill to its implied fair value. Our goodwill impairment testing methodologies have not changed since the prior year's test. As a result of the test completed for March 31, 2009, the estimated fair value substantially exceeded the carrying value of our reporting units.

As of December 31, 2009, our goodwill balance is allocated between two reporting units: Rubber Blacks, \$XX million, and Fumed Metal Oxides, \$XX million. There have been no goodwill impairment charges during the periods presented in these financial statements.

Our long-lived assets primarily include property, plant, equipment, long-term investments and assets held for rent. We review the carrying values of long-lived assets for impairment whenever events or changes in business circumstances indicate that the carrying amount of an asset may not be recoverable. Such circumstances would include, but are not limited to, a significant decrease in the market price of the long-lived asset, a significant adverse change in the way the asset is being used, a decline in the physical condition of the asset or a history of operating or cash flow losses associated with the use of the asset.

To test for impairment of assets we generally use a probability-weighted estimate of the future undiscounted net cash flows of the assets or asset grouping over the remaining life of the asset to determine if the asset is recoverable. If we determine that the asset is not recoverable, we determine if there is a potential impairment loss by calculating the fair value of the asset using a probability-weighted discounted estimate of future cash flows. The discount rate is based on the weighted average cost of capital that is determined by evaluating the risk free rate of return, cost of debt, and expected equity premiums. To the extent the carrying value exceeds the fair value of the asset or asset group, an impairment loss is recognized in the statement of operations in that period. During the first quarter of fiscal 2010, a \$X million charge relating to the impairment of long-lived assets was recognized in the consolidated statement of operations."

Cash Flows and Liquidity, page 46

6. *We note your credit facility agreement, which expires on August 3, 2010, contains various affirmative, negative and financial covenants, among other restrictions. We further note that you intend to replace the credit facility when it expires. In future filings, please ensure that you clearly disclose the specific terms of any material debt covenants and whether you were in compliance with the covenants as of the reporting date. In addition, if it is reasonably likely that you will not be in compliance with any of your material debt covenants, please disclose the required ratios/amounts as well as the actual ratios/amounts as of each reporting date. This will allow readers to understand how much cushion there is between the required ratios/amounts and the actual ratios/amounts. Please also consider showing the specific computations used to arrive at the actual ratios/amounts with corresponding reconciliations to US GAAP amounts, if necessary. See Sections I.D and IV.C of the SEC Interpretative Release NO. 33-8350. Please show us in your supplemental response what the revisions will look like.*

Cabot Response:

There are two material financial covenants in our revolving credit facility, subsidiary debt to total capitalization and total debt to total capitalization, that limit the additional debt we may incur. The credit facility also contains an interest coverage covenant that becomes applicable only if Cabot's credit rating is downgraded.

For the material covenants, we have a considerable cushion between the covenant limits and our actual ratios. In the past three years, the closest we have come to the subsidiary debt to total capitalization covenant limit was an actual percentage of 17% versus a limit of 25%. For the same three year period, the closest we have come to the total debt to total capitalization covenant was an actual percentage of 39% versus a limit of 60%. Additionally, we continually monitor the risk that Cabot's credit rating may be downgraded by staying in regular contact with the rating agencies and monitoring our forecasted results. Our credit rating has been at BBB+/Baa1 for over 20 years and we are comfortable that the interest coverage covenant is not at risk of being applied.

In future filings, beginning with our 10-Q for the quarter ended December 31, 2009, we will disclose the specific terms of our material debt covenants. The description of the material covenants in our current revolving credit facility will be as follows:

"The credit facility contains various affirmative, negative and financial covenants which are customary for financings of this type, including limitations on our total debt to total capitalization ratio and our total amount of subsidiary debt to total capitalization. The credit facility also contains an interest coverage covenant that becomes applicable only if Cabot's credit rating is downgraded. As of XX, we were in compliance with all of the covenants."

Additionally, if in the future it is reasonably likely that we will not be in compliance with any of our material debt covenants, we will disclose in future filings the limits and actual amounts of these covenants along with any other required disclosures.

Note S – Income Taxes

7. *Given your disclosure on page 92 that you have recognized losses from continuing operations in the U.S. for each of the three years ended September 30, 2009, please enhance your disclosure in future filings to discuss the nature of the U.S. deferred assets which have not been offset by valuation allowances and how you determined that these would be realized. In this regards, please address the following:*
 - *Please expand your discussion of the nature of the positive and negative evidence that you considered, how that evidence was weighted , and how that evidence led you to determine it was not appropriate to record a valuation allowance on the remaining deferred income tax assets. You should consider discussing the significant estimates and assumptions used in your analysis. Please discuss how you determined the amount of the valuation allowance to record;*

- Please disclose the amount of pre-tax income that you need to generate to realize the deferred tax assets;
- Please include an explanation of the anticipated future trends included in your projections of future taxable income;
- Please disclose that the deferred tax liabilities you are relying on in your assessment of the realizability of your deferred tax assets will reverse in the same period and jurisdiction and are of the same character as the temporary differences giving rise to the deferred tax assets.

Please show us in your supplemental response what the revisions will look like.

Cabot Response:

We interpret the above comment to be predicated on our disclosure of domestic losses over the preceding three years. We understand that there is generally a presumption that an entity, if it displays three years of cumulative losses, should ensure that it has ample evidence that a valuation allowance need not be provided against specific deferred tax assets. We regularly test for cumulative losses using U.S. income (loss) from continuing operations adjusted for U.S. permanent differences for the current year and two prior years. As the table below indicates, for the three years ended September 30, 2009, cumulative U.S. income (loss) from continuing operations adjusted for permanent differences resulted in a profit.

	Cabot Corporation Adjusted U.S. Income (Loss)			Cumulative
	Fiscal years ended September 30			
	2009	2008	2007	
	(Dollars in millions)			
U.S. income (loss) from continuing operations	\$ (78)	\$ (63)	\$ (30)	\$ (171)
U.S. permanent differences	68	32	84	184
Adjusted U.S. Income (Loss)	\$ (10)	\$ (31)	\$ 54	\$ 13

We also considered the following additional positive historical evidence when determining that our deferred tax assets in the U.S. will be realized and additional valuation allowances were not needed as of September 30, 2009:

- Cabot has a long history of generating U.S. taxable income (per its tax return). In the ten years from fiscal 1999 through fiscal 2008, Cabot experienced one loss year (in fiscal 2006) which was utilized in the carryback period.

- Cabot has no history of operating loss carryforwards or tax credits expiring before being realized.
- Any net operating losses would have twenty years to be carried forward and income tax credits would have a ten, twenty or indefinite carryforward period, depending on the type of credit. Based on our historical experience, it is more likely than not that all such attributes would be used.
- We are not aware of any unsettled circumstances at the current time that may put our expectation of profits in the future at risk.

At the time of filing our September 30, 2009 financial statements, we believed, and continue to believe, that for the three years ending September 30, 2010, our adjusted U.S. income from continuing operations will yield a cumulative profit. This cumulative profit is largely expected to be attributable to the absence of non-recurring restructuring charges that were incurred in the previous two years. Also, we anticipate a substantial improvement in U.S. operating income beginning in the year ending September 30, 2010 as a consequence of both our cost saving initiatives that reduced our fixed cost base and the improving economic environment. As of the time we filed our 10-K, our results had begun to reflect these improvements.

In future 10-K filings, we will revise our disclosure to add the following statement:

“As of September 30, 20XX, the Company had approximately \$XXX million of net domestic deferred tax assets. It will require approximately \$XXX million of future domestic income to realize such assets. U.S. income (loss) from continuing operations adjusted for U.S. permanent differences for the three years ended September 30, 20XX resulted in a cumulative profit of \$XXX million.” Management believes that the Company’s history of generating domestic profits provides adequate evidence that it is more likely than not that all of the net deferred tax assets will be realized in the normal course of business.”

Note T – Commitments and Contingencies, page 96

Contingencies, page 97

Environmental Matters, page 97

8. *Regarding the environmental matters which you are a party to, please confirm there is not a reasonable possibility that a loss exceeding amounts already recognized may have been incurred and the amount of that additional loss is material. If there is a reasonable possibility, please disclose in future filings the estimated additional loss, or range of loss, or state that such an estimate cannot be made as required by FASB ASC 450-20-50. Refer to SAB Topic 5:Y as well. Please show us in your supplemental response what the revisions will look like.*

Cabot Response:

We continually evaluate the known facts and circumstances surrounding each environmental matter to determine the appropriate accrual and disclosure. Based on our knowledge and this

evaluation, we confirm that currently, and as of the date we filed our 10-K, there is not and was not a reasonable possibility that a loss in excess of the amount accrued for the environmental matters to which we are a party would be material to our consolidated financial position. In preparing future filings we will continue to perform this assessment and, if there is a reasonable possibility that a loss in excess of the amount accrued for environmental matters would be material to our consolidated financial position, we will disclose the estimated amount or range of such potential additional loss or include a statement that an estimate of the potential additional loss cannot be made. As this is not currently the case, we have not prepared for your review draft language to this effect.

Respirator Liabilities, page 98

9. *Please disclose the number of claims in connection with respiratory products at each balance sheet date, the number of claims filed for each period presented, the number of claims dismissed, settled, or otherwise resolved for each period, and the average settlement amount and total costs per claim. Also, please address historical and expected trends in these amounts and their reasonable likely effects on operating results and liquidity. Refer to Question 3 of SAB Topic 5:Y.*

Cabot Response:

As stated in our 10-K, as of September 30, 2009 there were approximately 52,000 claimants in pending cases asserting claims against American Optical Corporation (“AO”) in connection with respiratory products. We specifically disclose that “. . . other parties, including AO, AO’s insurers, and another former owner and its insurers . . . are responsible for significant portions of the cost of these liabilities, leaving Cabot’s subsidiary with a portion of the liability in only some of the pending cases.” In future filings, we will include the total number of claims in connection with respiratory products at each relevant balance sheet date, as we believe this provides useful information to investors as to trends in the overall number of claimants in these cases. However, given that Cabot’s subsidiary is only responsible for a small portion of the total number of cases and in those cases typically only pays a portion of the liability, we do not believe that providing the more detailed disclosure of the number of new claims filed, dismissed, settled or otherwise resolved for each period and the average settlement amount and total costs per claim, many of which do not involve Cabot’s subsidiary, would provide investors with a meaningful understanding of Cabot’s liability for these claims. As described in our 10-K, in order to provide investors with an understanding of the scope of Cabot’s potential liability, Cabot engaged the assistance of Hamilton, Rabinovitz & Alschuler, Inc. (“HR&A”) to analyze historic data and estimate the costs that would be incurred in resolving existing and future claims. Based on the HR&A estimates, Cabot established a reserve for these matters of \$13 million on a net present value basis (\$23 million on an undiscounted basis) at September 30, 2009. In addition, as disclosed in our 10-K, cash payments on account of these liabilities were approximately \$2 million, \$2 million and \$1 million during fiscal 2009, 2008 and 2007, respectively, and we estimate payments of approximately \$1 million, \$2 million, \$1 million, \$1 million, and \$1 million in fiscal 2010, 2011, 2012, 2013 and 2014, respectively, and a total of \$17 million in fiscal 2015 through 2053. In our opinion, disclosure of the reserve, our \$1-2 million per annum payment history, and our estimate of future payments is the most relevant information to the reader of the financial statements when evaluating our exposure and its potential effect on Cabot’s operating results and liquidity. We will continue to disclose this information in our future filings.

Item 15. Exhibits, Financial Statement Schedules

10. We note that you have not filed the exhibits and schedules to the Credit Agreement dated August 3, 2005 (Exhibit 10(a)(i)). Please advise. Refer to Item 601(b)(10) of Regulation S-K. Otherwise, please file a complete copy of this agreement with your next Exchange Act report.

Cabot Response:

In response to your request, we will file a complete copy of the Credit Agreement, with the exhibits and schedules thereto attached, with our 10-Q for the quarter ended December 31, 2009.

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

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 Counsel, 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
James P. Kelly
Jane A. Bell
Daniel Sunderland (Deloitte & Touche)