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**SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

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**FORM 11-K**

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**Annual Report Pursuant to Section 15(d) of the Securities Exchange Act of 1934**

For the fiscal year ended December 31, 2010

or

**Transition Report Pursuant to Section 15(d) of the Securities Exchange Act of 1934**

For the transition period from \_\_\_\_\_ to \_\_\_\_\_.

Commission file number (of issuer): 1-5667

A. Full title of the plan and the address of the plan, if different from that of the issuer named below:

**Cabot Retirement Savings Plan**

B. Name of issuer of the securities held pursuant to the plan and the address of its principal executive office:

**Cabot Corporation**

Two Seaport Lane, Suite 1300  
Boston, Massachusetts 02210-2019

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\* All other supplemental schedules required by Section 2520.103-10 of the Department of Labor's Rules and Regulations for Reporting and Disclosure under ERISA have been omitted because they are not applicable.

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Trustees and Participants of the Cabot Retirement Savings Plan:

We have audited the accompanying statements of net assets available for benefits of the Cabot Retirement Savings Plan (the "Plan") as of December 31, 2010 and 2009, and the related statement of changes in net assets available for benefits for the year ended December 31, 2010. These financial statements are the responsibility of the Plan's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. The Plan is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. Our audits included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Plan's internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, such financial statements present fairly, in all material respects, the net assets available for benefits of the Plan as of December 31, 2010 and 2009, and the changes in net assets available for benefits for the year ended December 31, 2010 in conformity with accounting principles generally accepted in the United States of America.

Our audits were conducted for the purpose of forming an opinion on the basic financial statements taken as a whole. The supplemental schedule of assets (held at end of year) as of December 31, 2010 is presented for the purpose of additional analysis and is not a required part of the basic financial statements, but is supplementary information required by the Department of Labor's Rules and Regulations for Reporting and Disclosure under the Employee Retirement Income Security Act of 1974. This schedule is the responsibility of the Plan's management. Such schedule has been subjected to the auditing procedures applied in our audit of the basic 2010 financial statements and, in our opinion, is fairly stated in all material respects when considered in relation to the basic financial statements taken as a whole.

/s/ Deloitte & Touche LLP

Boston, Massachusetts  
June 28, 2011

[Table of Contents](#)**Cabot Retirement Savings Plan  
Statement of Net Assets Available for Benefits  
As of December 31, 2010**

	<u>Allocated</u>	<u>Unallocated</u>	<u>Total</u>
<b>Assets</b>			
Investments	\$405,889,368	\$49,109,265	\$454,998,633
Employer contribution receivable	1,514,527	—	1,514,527
Notes receivable from participants	2,852,552	—	2,852,552
Total assets	<u>410,256,447</u>	<u>49,109,265</u>	<u>459,365,712</u>
<b>Liabilities</b>			
Current portion of note payable	—	5,675,771	5,675,771
Long-term portion of note payable	—	12,849,101	12,849,101
Total liabilities	<u>—</u>	<u>18,524,872</u>	<u>18,524,872</u>
Net assets available for benefits	<u>\$410,256,447</u>	<u>\$30,584,393</u>	<u>\$440,840,840</u>

See notes to financial statements.

[Table of Contents](#)**Cabot Retirement Savings Plan  
Statement of Net Assets Available for Benefits  
As of December 31, 2009**

	<u>Allocated</u>	<u>Unallocated</u>	<u>Total</u>
<b>Assets</b>			
Investments	\$341,766,983	\$45,617,900	\$387,384,883
Employer contribution receivable	1,512,634	—	1,512,634
Notes receivable from participants	2,380,982	—	2,380,982
Total assets	<u>345,660,599</u>	<u>45,617,900</u>	<u>391,278,499</u>
<b>Liabilities</b>			
Current portion of note payable	—	5,228,653	5,228,653
Long-term portion of note payable	—	18,524,872	18,524,872
Total liabilities	<u>—</u>	<u>23,753,525</u>	<u>23,753,525</u>
Net assets available for benefits	<u>\$345,660,599</u>	<u>\$21,864,375</u>	<u>\$367,524,974</u>

See notes to financial statements.

[Table of Contents](#)**Cabot Retirement Savings Plan  
Statement of Changes in Net Assets Available for Benefits  
For the Year Ended December 31, 2010**

	<u>Allocated</u>	<u>Unallocated</u>	<u>Total</u>
<b>Additions</b>			
Interest and dividend income <sup>(1)</sup>	\$ 8,157,506	\$ 2,525,346	\$ 10,682,852
Net appreciation in fair value of investments	58,558,026	17,049,090	75,607,116
Interest on notes receivable from participants	166,347	—	166,347
Share allocation of Cabot Corporation common stock, at fair value	12,167,358	—	12,167,358
Transfer of forfeitures from allocated	—	805,000	805,000
Employer contributions	3,854,794	3,707,714	7,562,508
Participant contributions	11,641,396	—	11,641,396
Rollovers	606,641	—	606,641
Total additions	<u>95,152,068</u>	<u>24,087,150</u>	<u>119,239,218</u>
<b>Deductions</b>			
Benefits paid to participants	29,672,697	—	29,672,697
Interest expense	—	1,809,400	1,809,400
Redemption/Managed Account fees	78,523	—	78,523
Transfer of forfeitures to unallocated	805,000	—	805,000
Share allocation of Cabot Corporation common stock, at fair value	—	12,167,358	12,167,358
Share allocation of Cabot Corporation common stock, at fair value for dividend payment	—	1,390,374	1,390,374
Total deductions	<u>30,556,220</u>	<u>15,367,132</u>	<u>45,923,352</u>
Net increase in net assets	64,595,848	8,720,018	73,315,866
Net assets available for benefits			
Beginning of year	345,660,599	21,864,375	367,524,974
End of year	<u>\$410,256,447</u>	<u>\$30,584,393</u>	<u>\$440,840,840</u>

See notes to financial statements.

<sup>(1)</sup> Included in allocated dividend income are dividend payments in the form of a share allocation of Cabot Corporation common stock with an aggregate fair value of \$1,390,374.

**Cabot Retirement Savings Plan**

**Notes to Financial Statements as of December 31, 2010 and 2009, and for the Year Ended December 31, 2010**

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**1. Description of the Plan**

**General**

Cabot Corporation (“Cabot” or the “Company”) initially adopted the Cabot Corporation Employee Stock Ownership Plan (the “ESOP”) in 1988, the Cabot Retirement Incentive Savings Plan in 1994 (previously the Cabot Profit-Sharing and Savings Plan, adopted in 1952) (the “CRISP”), and the Cabot Employee Savings Plan in 1987 (the “CESP”). As of December 31, 2000, the CRISP and the CESP were merged with and into the ESOP. The combined amended and restated plan is a defined contribution plan and was renamed the Cabot Retirement Savings Plan (the “Plan”). The Plan has two components, a 401(k) plan and an Employee Stock Ownership Plan (“ESOP”). The Plan is subject to provisions of the Employee Retirement Income Security Act of 1974 (“ERISA”).

The following brief description of the Plan is provided for general information purposes only. Participants should refer to the Plan document for more complete information.

**Eligibility**

All U.S. employees of the Company and its participating subsidiaries (except certain temporary and leased employees) are eligible to participate in the Plan beginning on the later of the first day of employment or the date the employee is included in an employee group which participates.

**Employee Contributions**

By means of a salary reduction arrangement, a participant may make contributions to his or her account. Participants may elect to contribute up to 50% of their U.S. eligible compensation on a before-tax basis (includes catch-up contributions), an after-tax basis, or a combination thereof, subject to certain limitations under the Internal Revenue Code (the “Code”). Participants may also contribute amounts representing distributions from other qualified defined benefit or defined contribution plans.

**Company Contributions**

The Company’s allocated contributions are primarily in the form of (i) a Cabot common stock allocation (the “ESOP allocation”) and (ii) a matching contribution in shares of Cabot common stock. Matching contributions and ESOP allocations are made with shares of the Company’s common stock. These contributions are calculated and recorded as of the last business day of a calendar quarter. In addition, the Company may make discretionary contributions to participants under the terms of the Plan. No such discretionary contributions were made during the year ended December 31, 2010.

For employees not subject to a collective bargaining agreement, Cabot makes a matching contribution of 75% of a participant’s before-tax, after-tax and catch-up contributions on up to 7.5% of the participant’s eligible compensation, making the maximum matching contribution an amount equal to 5.625% of a participant’s eligible compensation.

For the ESOP allocation each quarter, a total of 108,696.645 shares of common stock are allocated among eligible participants. The number of shares allocated to each participant each quarter depends in part on the fair market value of Cabot common stock at the time of the allocation, the number of shares allocated to the payment of dividends and total eligible compensation. The ESOP allocation each quarter is generally between 4% and 8% of a participant’s eligible compensation. In instances where a participant’s allocation is less than 4% of eligible compensation, the Company is required to make a contribution to provide a minimum allocation of 4% of eligible compensation. If there are unallocated shares after participants receive an ESOP allocation equal to 8% of eligible compensation, the additional shares are used to fund the Company matching contribution. During 2010, 58,869 shares with an aggregate fair value of \$1,865,694 as of the dates

**Cabot Retirement Savings Plan**

**Notes to Financial Statements as of December 31, 2010 and 2009, and for the Year Ended December 31, 2010**

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of the allocation were used to reduce Company matching contributions. In the event not all shares have been allocated to participants after the ESOP allocation and Company matching contributions have been made, the remaining shares are contributed to participants based on total eligible compensation. An allocation is made to the accounts of participants who are employed on the last business day of the calendar quarter or who have retired, died, or become totally and permanently disabled during the quarter.

Common stock held by the Plan to be allocated in future periods is reflected as unallocated investments in the statements of net assets available for benefits.

As discussed in Note 6, the Company also remits debt service contributions to the Plan.

**Participant Accounts**

Individual accounts are maintained for each Plan participant. Each participant account is credited with the participant's contribution, the Company's matching contribution, and allocations of the Company common stock and Plan earnings, and charged with withdrawals and an allocation of Plan losses. Allocations are based on participant earnings or account balances, as defined, with the exception of the ESOP allocation, which is based on a participant's eligible earnings. The benefit to which a participant is entitled is the benefit that can be provided from the participant's vested account.

**Funding Policy**

The total additions to each participant's account are subject to certain Code limitations.

**Investments**

Participants direct the investment of their contributions into various investment options offered by the Plan. The Plan offers several mutual funds and the Cabot Common Stock Fund as investment options for participants.

The quarterly ESOP allocations are recorded in the Cabot Common ESOP Stock Fund, which is comprised primarily of Cabot common stock. The quarterly Company matching contribution is recorded in the Cabot Common ESOP Stock Fund, the Cabot Common Stock Fund or a combination of both. Subject to any restrictions on trading set forth in Cabot's Policy on Transactions in Securities, participants are able to redirect at any time their portion of the Cabot Common ESOP Stock Fund and the Cabot Common Stock Fund into any of the investment options offered by the Plan. Accordingly, amounts being allocated to the Cabot Common ESOP Stock Fund and the Cabot Common Stock Fund are considered to be participant directed investments.

**Vesting**

Each participant is at all times 100% vested in his or her contributions. Effective January 1, 2002, all salaried participants are vested in all Company contributions and earnings thereon according to the following five-year vesting schedule: 20% upon completion of two years of service, 40% upon completion of three years of service, 60% upon completion of four years of service, and 100% upon completion of five years of service. In addition, a participant's entire account balance becomes 100% vested and payable upon the participant's attainment of age 65, or upon the participant's early retirement (defined as age 55 with 10 years of service to the Company), disability or death.

**Benefits**

For employees not subject to certain collective bargaining agreements, effective April 30, 2001, the Plan requires all new benefits to be paid in the form of a lump sum distribution.

**Cabot Retirement Savings Plan**

**Notes to Financial Statements as of December 31, 2010 and 2009, and for the Year Ended December 31, 2010**

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A participant may withdraw up to 100% of his or her before-tax contributions upon showing a financial hardship exists, but only after the participant has withdrawn all other vested benefits from the Plan and the maximum loan has been made from the participant's account. Participants may withdraw at any time any after-tax contributions made.

A participant may make withdrawals from his or her entire vested account balance once the participant reaches age 59 1/2.

If a participant leaves the Company before retirement for any reason other than death or total and permanent disability, and his or her account balance is \$5,000 or less, upon such termination he or she will receive the vested portion of his or her account balance in a lump sum distribution.

A participant may elect to defer payment of a benefit until April 1 following the year that the participant reaches age 70 1/2.

**Participant Loans**

Participants may obtain loans from the Plan in an amount not to exceed, in the aggregate, the lesser of \$50,000 or 50% of the total vested amount in the participant's account. Each loan must be paid in full within five years through payroll deductions and is secured by the participant's remaining account balance. The Plan provides that loans may bear interest at reasonable rates as determined by the Benefits Committee of the Company. The interest rate is currently the prime rate plus 2%, and is adjusted quarterly for new loans to reflect changes in the prime rate. Interest rates on outstanding loans as of December 31, 2010 ranged from 5.25% to 10.25% per annum.

**2. Summary of Significant Accounting Policies**

**Basis of Accounting**

The accompanying financial statements have been prepared in conformity with accounting principles generally accepted in the United States of America (GAAP).

**Use of Estimates**

The preparation of financial statements in conformity with GAAP requires management to make certain estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of additions and deductions during the reporting period. Actual amounts could differ from those estimates.

**Risk and Uncertainties**

The Plan allows for various investment options (as selected by the Plan administrator) in any combination of stocks, bonds, fixed income securities, mutual funds and other investment securities. Investment securities are exposed to various risks, such as interest rate, market and credit risks. Due to the level of risk associated with certain investment securities, it is at least reasonably possible that changes in the values of investment securities will occur in the near term and that such changes could materially affect participants' account balances and the amounts reported in the financial statements.

**Investment Valuation**

The Plan's investments are stated at fair value. Fair value of a financial instrument is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.

**Cabot Retirement Savings Plan**

**Notes to Financial Statements as of December 31, 2010 and 2009, and for the Year Ended December 31, 2010**

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Investments in common stock traded on a national securities exchange are valued at the last reported sale price on the last business day of the year. Investments in mutual funds are valued at quoted market prices, which represent the net asset value of shares held by the Plan at year-end.

**Income Recognition**

Purchases and sales of securities are reflected on a trade date basis. Gains or losses on sales of securities are based on average cost.

Dividends received in cash are recorded on the ex-dividend date. Dividend payments received in shares of Cabot common stock are recorded on the ex-dividend date in an amount equal to the fair value of the common stock on that date. Interest income is recorded as earned on the accrual basis.

The Plan presents in the statement of changes in net assets the net appreciation (depreciation) in the fair value of its investments which consists of (i) realized gains or losses, and (ii) unrealized appreciation (depreciation) on those investments.

Management fees and operating expenses charged to the Plan for investments in the mutual funds are deducted from income earned on a daily basis and are not separately reflected. Consequently, management fees and operating expenses are reflected as a reduction of investment return for such investments.

**Notes Receivable from Participants**

Notes receivable from participants are measured at their unpaid principal balance plus any accrued but unpaid interest. Delinquent participant loans are recorded as distributions based on the terms of the Plan document.

**Benefit Payments**

Benefit payments to participants are recorded upon distribution.

**New Accounting Standards**

**ASU No. 2010-25, Reporting Loans to Participants by Defined Contribution Pension Plans**

In September 2010, the FASB issued ASU No. 2010-25, *Reporting Loans to Participants by Defined Contribution Pension Plans*. The ASU requires that participant loans be classified as notes receivable rather than a plan investment and measured at unpaid principal balance plus accrued but unpaid interest rather than fair value. The Plan retrospectively adopted the new accounting in 2010. Consequently, participant loans are recorded as notes receivable at December 31, 2010 and 2009 in the accompanying financial statements. The adoption did not have a material effect on the Plan's financial statements.

**3. Fair Value Measurements**

In accordance with GAAP, the Plan classifies its investments into Level 1, which refers to securities valued using quoted prices from active markets for identical assets; Level 2, which refers to securities not traded on an active market but for which observable market inputs are readily available; and Level 3, which refers to securities valued based on significant unobservable inputs. Assets and liabilities are classified in their entirety based on the lowest level of input that is significant to the fair value measurement. There were no transfers of assets between levels during the year ended December 31, 2010.

[Table of Contents](#)**Cabot Retirement Savings Plan****Notes to Financial Statements as of December 31, 2010 and 2009, and for the Year Ended December 31, 2010**

As of December 31, 2010 and 2009 the Plan held only Level 1 investments. The following table sets forth by level and major categorization within the fair value hierarchy, a summary of the Plan's investments measured at fair value on a recurring basis at December 31, 2010 and 2009.

Fair Value Measurements at **December 31,**  
Using Quoted Prices in Active Markets for Identical Assets

	2010	2009
<i>Common Stock:</i>		
Cabot Common Stock *	\$ 156,000,783	\$ 124,678,754
Total Common Stock	<u>156,000,783</u>	<u>124,678,754</u>
<i>Mutual Funds:</i>		
Money Market Funds	22,009,356	22,629,137
Domestic Equity Funds	135,287,652	123,809,593
International Funds	35,636,002	30,440,319
Balanced Funds	62,898,814	48,344,137
Bond Funds	43,166,026	37,482,943
Total Mutual Funds	<u>298,997,850</u>	<u>262,706,129</u>
Total	<u>\$ 454,998,633</u>	<u>\$ 387,384,883</u>

Although the Plan believes its valuation methods are appropriate and consistent with the valuation practices of other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in a different fair value measurement at the reporting date.

\* Includes both Cabot Common ESOP Stock Fund and Cabot Common Stock Fund.

**4. Investments**

The fair value of investments held by the Plan that exceed 5% or more of the Plan's net assets available for benefits as of December 31, 2010 and 2009 are as follows:

	December 31,			
	2010		2009	
	Allocated	Unallocated	Allocated	Unallocated
Vanguard Windsor II Fund	\$ 27,408,352	\$ —	\$27,413,595	\$ —
Vanguard Wellington Fund	41,117,802	—	37,157,892	—
Cabot Common Stock Funds*	106,891,518	49,109,265	79,060,854	45,617,900
Vanguard 500 Index Fund	46,638,998	—	41,074,450	—
Vanguard Total Bond Market Index Fund	31,665,265	—	26,029,532	—
Vanguard International Growth Fund	26,304,996	—	22,731,830	—
Vanguard PRIMECAP Fund	31,625,905	—	31,764,639	—

[Table of Contents](#)**Cabot Retirement Savings Plan****Notes to Financial Statements as of December 31, 2010 and 2009, and for the Year Ended December 31, 2010**

During the year ended December 31, 2010, the Plan's investments (including gains and losses on investments bought and sold, as well as held during the year) appreciated in value as follows:

<i>Common Stock:</i>	
Cabot Common Stock*	\$50,675,264
Total Common Stock	<u>50,675,264</u>
<i>Mutual Funds:</i>	
Domestic Equity Funds	16,400,790
International Funds	3,499,309
Balanced Funds	4,418,418
Bond Funds	613,335
Total Mutual Funds	<u>24,931,852</u>
Total	<u>\$75,607,116</u>

\* Includes both Cabot Common ESOP Stock Fund and Cabot Common Stock Fund.

**5. Note Payable**

Note payable consisted of the following:

	December 31,	
	2010	2009
Note due 2013, 8.29%	<u>\$18,524,872</u>	<u>\$23,753,525</u>

In November 1988, the Plan borrowed \$75,000,000 from an institutional lender in order to finance its purchase of 75,000 shares of Cabot Series B preferred stock ("ESOP note"). This debt accrues interest at a rate of 8.29% per annum, and is being repaid in equal quarterly installments, with the final payment due on December 31, 2013. This debt is collateralized by the assets in the unallocated fund and is guaranteed by the Company. On July 20, 2007, all of the Company's outstanding shares of preferred stock were converted into shares of the Company's common stock.

The aggregate principal amount of note due and payable in each of the remaining three plan years is as follows:

<u>Year ending December 31,</u>	
2011	\$ 5,675,771
2012	6,161,122
2013	<u>6,687,979</u>
	<u>\$18,524,872</u>

**6. Debt Service Contributions**

The Company contributes to the Plan on a quarterly basis the deficiency between dividends earned on the leveraged common stock and the payment due by the Plan to the lender described in Note 5. These debt service contributions are recorded as unallocated employer contributions.

**Cabot Retirement Savings Plan**

**Notes to Financial Statements as of December 31, 2010 and 2009, and for the Year Ended December 31, 2010**

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**7. Forfeitures**

Upon termination of a participant from the Plan before his or her benefits are fully vested, the nonvested portion of the Company contributions is forfeited. The Plan allows the Company to apply participant forfeitures toward the payment of the ESOP debt obligation. During 2010, the Company used \$805,000 of participant forfeitures toward the payment of the ESOP note. As of December 31, 2010 and 2009, available participant forfeitures totaled \$12,839 and \$11,136, respectively.

**8. Administrative Expenses**

Other than certain redemption and special managed account fees, all administrative expenses associated with the operation of the Plan were paid by the Company during the year ended December 31, 2010. These costs totaled approximately \$161,888. Under the terms of the Plan, such costs may be charged to the Plan.

**9. Federal Income Tax Status**

In a letter dated May 4, 2009, the Internal Revenue Service advised the Company of its favorable determination with respect to the qualified status of the Plan, as amended and restated, under the Code. The Plan is intended to qualify as a profit sharing plan under section 401(a) of the Code that contains a stock bonus feature constituting an employee stock ownership plan under section 4975(e) of the Code. The Company and Plan management believe that the Plan has been designed and is being operated in compliance with the applicable requirements of the Code. Therefore, no provision for income tax has been accrued.

**10. Plan Termination**

The Plan was established with the intention that it will continue indefinitely. However, the Company reserves the right to suspend its contributions or to terminate the Plan at any time. In the event the Plan is terminated, all participants become 100% vested and the assets of the Plan, after payment of any expenses, taxes or proper charges of the trustee, will be allocated in accordance with the provisions of ERISA.

**11. Party-In-Interest**

The Plan's investment options include certain mutual funds of The Vanguard Group. Vanguard Fiduciary Trust Company is the record keeper and trustee of certain of the Plan's assets and, therefore, participant investments in mutual funds within The Vanguard Group qualify as party-in-interest transactions. Fees paid by the Plan for investment management services were included as a reduction of the return earned on each mutual fund.

In addition, the Plan is invested in common stock of the Company and these transactions qualify as party-in-interest transactions.

At December 31, 2010 and 2009, the Plan held common stock of the Company, the sponsoring employer. During the year ended December 31, 2010, the Plan earned dividend income of \$3,159,488 related to the common stock of the Company.

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**Cabot Retirement Savings Plan**  
**Schedule H, Line 4i – Schedule of Assets (Held At End of Year)**  
**As of December 31, 2010**

EIN: 04-2271897 PN:022

(a)(b) Identity of Issuer	(c) Description of Investment	(d) Cost**	(e) Current Value
* Cabot Corporation	Common stock of Cabot Corporation:		
	Non-participant directed	\$8,910,901	\$ 49,109,265
	Participant directed		106,891,518
* The Vanguard Group	Vanguard 500 Index Fund		46,638,998
* The Vanguard Group	Vanguard Explorer Fund		17,424,929
* The Vanguard Group	Vanguard Extended Market Index Fund		12,189,468
* The Vanguard Group	Vanguard Federal Money Market Fund		16,197,778
* The Vanguard Group	Vanguard International Growth Fund		26,304,996
* The Vanguard Group	Vanguard International Value Fund		9,331,006
* The Vanguard Group	Vanguard PRIMECAP Fund		31,625,905
* The Vanguard Group	Vanguard Prime Money Market Fund		5,811,578
* The Vanguard Group	Vanguard Short-term Federal Fund		11,500,761
* The Vanguard Group	Vanguard Target Retirement Fund 2005		774,789
* The Vanguard Group	Vanguard Target Retirement Fund 2010		1,957,940
* The Vanguard Group	Vanguard Target Retirement Fund 2015		4,970,140
* The Vanguard Group	Vanguard Target Retirement Fund 2020		3,368,918
* The Vanguard Group	Vanguard Target Retirement Fund 2025		2,782,835
* The Vanguard Group	Vanguard Target Retirement Fund 2030		1,930,829
* The Vanguard Group	Vanguard Target Retirement Fund 2035		1,775,990
* The Vanguard Group	Vanguard Target Retirement Fund 2040		1,333,626
* The Vanguard Group	Vanguard Target Retirement Fund 2045		1,324,224
* The Vanguard Group	Vanguard Target Retirement Fund 2050		495,633
* The Vanguard Group	Vanguard Target Retirement Fund 2055		27,128
* The Vanguard Group	Vanguard Target Retirement Income Fund		1,038,960
* The Vanguard Group	Vanguard Total Bond Market Index Fund		31,665,265
* The Vanguard Group	Vanguard Wellington Fund		41,117,802
* The Vanguard Group	Vanguard Windsor II Fund		27,408,352
* Participants	Participant Loans - stated interest rates ranging from 5.25% - 10.25% maturing at various dates through 2015.		2,852,552
	Total investments per Form 5500		<u>\$457,851,185</u>

\* Party-in-interest

\*\* Cost information is not required for participant directed investments, and therefore is not included. However, as Cabot common stock includes both participant directed and non-participant directed investments, cost information has been included for the non-participant directed.

SIGNATURES

*The Plan.* Pursuant to the requirements of the Securities Exchange Act of 1934, the trustees (or other persons who administer the employee benefit plan) have duly caused this annual report to be signed on its behalf by the undersigned hereunto duly authorized.

Cabot Retirement Savings Plan  
(Name of Plan)

Date: June 29, 2011

/s/ Robby D. Sisco

Robby D. Sisco

Vice President

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Exhibit Index

Exhibit Number

Exhibit 23.1 — Consent of Independent Registered Public Accounting Firm

14

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in Registration Statements Nos. 333-19103, 333-19099 and 333-161253 of Cabot Corporation on Form S-8 of our report dated June 28, 2011 relating to the financial statements and financial statement schedule of the Cabot Retirement Savings Plan appearing in this Annual Report on Form 11-K of the Cabot Retirement Savings Plan for the year ended December 31, 2010.

/s/ Deloitte & Touche LLP

Boston, Massachusetts  
June 28, 2011