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SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, DC 20549

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FORM 11-K

MAR 28 2011

FOR ANNUAL REPORTS OF EMPLOYEE STOCK PURCHASE, SAVINGS  
AND SIMILAR PLANS PURSUANT TO SECTION 15(d) OF  
THE SECURITIES EXCHANGE ACT OF 1934

Washington, DC

(Mark One)

ANNUAL REPORT PURSUANT TO SECTION 15(d) OF THE SECURITIES  
EXCHANGE ACT OF 1934

For the fiscal year ended September 30, 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 1-4534

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

**AIR PRODUCTS AND CHEMICALS, INC.  
RETIREMENT SAVINGS PLAN**

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

**AIR PRODUCTS AND CHEMICALS, INC.  
7201 HAMILTON BOULEVARD  
ALLENTOWN, PA 18195-1501**

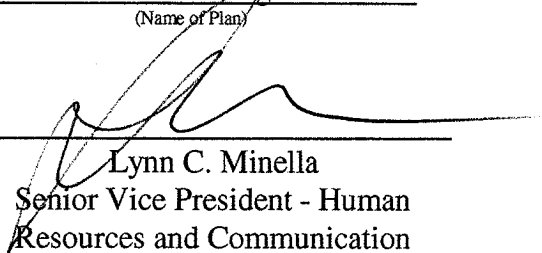
Pursuant to the requirements of the Securities Exchange Act of 1934, the trustees (or other persons who administer the employee benefit plan) have duly caused this Annual Report to be signed on its behalf by the undersigned, hereunto duly authorized.

Air Products and Chemicals, Inc.  
Retirement Savings Plan

(Name of Plan)

Dated: March 25, 2011

By: \_\_\_\_\_

  
Lynn C. Minella  
Senior Vice President - Human  
Resources and Communication

**Consent of Independent Registered Public Accounting Firm**

The Plan Administrator  
Air Products and Chemicals, Inc.  
Retirement Savings Plan:

We consent to the incorporation by reference in the registration statement (No. 333-158101) on Form S-8 of Air Products and Chemicals, Inc. of our report dated 25 March 2011, with respect to the statements of net assets available for benefits of the Air Products and Chemicals, Inc. Retirement Savings Plan as of 30 September 2010 and 2009, the related statements of changes in net assets available for benefits for the years then ended and the supplemental schedule, Schedule H, line 4i - Schedule of assets (held at end of year) as of 30 September 2010, which report appears in the 30 September 2010 annual report on Form 11-K of the Air Products and Chemicals, Inc. Retirement Savings Plan.

**KPMG LLP**

Philadelphia, Pennsylvania  
25 March 2011



**AIR PRODUCTS AND CHEMICALS, INC.  
RETIREMENT SAVINGS PLAN**

Financial Statements and Schedule

30 September 2010 and 2009

(With Report of Independent Registered Public  
Accounting Firm Thereon)

**AIR PRODUCTS AND CHEMICALS, INC.  
RETIREMENT SAVINGS PLAN**

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Note: All other schedules required by the Department of Labor's Rules and Regulations for Reporting and Disclosure under the Employee Retirement Income Security Act of 1974 have been omitted because there is no information to report.



KPMG LLP  
1601 Market Street  
Philadelphia, PA 19103-2499

## Report of Independent Registered Public Accounting Firm

The Plan Administrator  
Air Products and Chemicals, Inc.  
Retirement Savings Plan:

We have audited the accompanying statements of net assets available for benefits of the Air Products and Chemicals, Inc. Retirement Savings Plan (the Plan) as of 30 September 2010 and 2009, and the related statements of changes in net assets available for benefits for the years then ended. 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 the 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. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes 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, the financial statements referred to above present fairly, in all material respects, the net assets available for benefits of the Plan as of 30 September 2010 and 2009, and the changes in net assets available for benefits for the years then ended in conformity with U.S. generally accepted accounting principles.

Our audits were performed 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 30 September 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*. The supplemental schedule is the responsibility of the Plan's management. The supplemental schedule has been subjected to the auditing procedures applied in the audit of the basic financial statements and, in our opinion, is fairly stated in all material respects in relation to the basic financial statements taken as a whole.

**KPMG LLP**

25 March 2011

**AIR PRODUCTS AND CHEMICALS, INC.  
RETIREMENT SAVINGS PLAN**

Statements of Net Assets Available for Benefits

30 September 2010 and 2009

(In thousands)

	2010	2009
<b>Assets:</b>		
Investments at fair value:		
Interest-bearing cash	\$ 8,403	8,047
Money Market Fund	31,936	36,067
Life Cycle Funds	57,693	40,978
Corporate Bond Fund	70,112	34,249
Balanced Fund	118,742	119,944
S&P 500 Index Stock Fund	96,206	91,727
Large Cap Value Fund	164,851	166,900
Large Cap Growth Fund	59,369	55,804
International Stock Fund	91,619	90,308
Small Capitalization Equity Fund	66,979	59,255
Company Stock Fund	430,157	429,122
Fixed Income Securities Fund	234,788	245,768
Brokerage Window	21,438	17,042
	1,452,293	1,395,211
Receivables:		
Participant loans	17,367	16,974
Accrued interest and dividends	4,135	3,074
Other receivables	1,147	101
	22,649	20,149
Total assets	1,474,942	1,415,360
Liabilities:		
Payables and accrued liabilities	192	200
Total liabilities	192	200
Net assets available for benefits at fair value	1,474,750	1,415,160
Adjustment from fair value to contract value for fully benefit-responsive investment contracts	(5,522)	(2,809)
Net assets available for benefits	\$ 1,469,228	1,412,351

See accompanying notes to financial statements.

**AIR PRODUCTS AND CHEMICALS, INC.**  
**RETIREMENT SAVINGS PLAN**

Statements of Changes in Net Assets Available for Benefits

Years ended 30 September 2010 and 2009

(In thousands)

	<b>2010</b>	<b>2009</b>
<b>Additions:</b>		
Employee contributions	\$ 53,995	52,803
Company matching contributions	16,860	17,137
Company core contributions, net of forfeitures	9,705	9,282
Interest income	742	1,106
Dividend income	21,773	21,400
Net appreciation in fair value of investments	85,967	36,285
Total additions	189,042	138,013
<b>Deductions:</b>		
Distributions to participants	131,939	99,111
Administrative expenses	226	213
Total deductions	132,165	99,324
Net increase	56,877	38,689
Net assets available for benefits, beginning of year	1,412,351	1,373,662
Net assets available for benefits, end of year	\$ 1,469,228	1,412,351

See accompanying notes to financial statements.



**AIR PRODUCTS AND CHEMICALS, INC.**  
**RETIREMENT SAVINGS PLAN**

Notes to Financial Statements

30 September 2010 and 2009

**(1) Description of the Plan**

The following description of the Air Products and Chemicals, Inc. Retirement Savings Plan (the Plan) provides only general information. Participants should refer to the summary plan description and the plan document for a more complete description of the Plan's provisions.

**(a) General**

The Plan is a defined contribution plan sponsored by Air Products and Chemicals, Inc. (the Company) covering certain full-time and part-time salaried and nonunion hourly employees of the Company and designated subsidiaries. Participants of the Plan are entitled to make before-tax contributions and after-tax contributions as allowed by Sections 401(k) and 401(m) of the Internal Revenue Code (IRC) after having completed at least 30 days of service. Eligible participants are entitled to make catch-up contributions as allowed by Section 414(v) of the IRC. Company matching contributions are made under IRC Section 401(m). The Plan is subject to the provisions of the Employee Retirement Income Security Act (ERISA).

**(b) Administration**

The Plan is administered by the Company's Director of Compensation and Benefits (the Plan Administrator). The Board of Directors of the Company has delegated oversight for the design and administration of the Plan to its Management Development and Compensation Committee and oversight for the funding and management of assets of the Plan to its Finance Committee. Responsibility for plan administration has been further delegated to the Senior Vice President of Human Resources and Communications, who has established a Benefits Committee to have fiduciary responsibility for appeals of the denial of benefits in an ERISA claim. The Finance Committee has appointed the Pension Investment Committee to assist with oversight of the investment of Plan assets. Fidelity Management Trust (Fidelity) is the trustee of the Plan.

**(c) Participant Accounts**

Each participant's account is credited with the participant's and the Company's contributions, as well as an allocation of the Plan's earnings or losses and administrative expenses. Allocations are based on participant earnings or account balances, as defined. The benefit to which a participant is entitled is the benefit that can be provided from the participant's vested account balance.

**(d) Contributions**

Subject to certain IRC restrictions, participants may elect to contribute to the Plan on a before-tax basis from 3% to 50%, in whole percentages, of compensation, as defined in the plan document, through payroll deductions. The before-tax basis allows a participant to defer recognition of income for federal income tax purposes. The maximum after-tax contribution is 16%. Participants who are at least age 50 before the close of the calendar year may make catch-up contributions in accordance with, and subject to the limitations of, IRC Section 414(v).

The Company will match certain contributions to the Plan made by participants. The matching contribution calculation will depend on whether or not the participant receives Company Core

**AIR PRODUCTS AND CHEMICALS, INC.**  
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Contributions under the Plan. To be eligible for Company Core Contributions, a participant must be (1) a salaried employee hired or rehired after 31 October 2004, (2) an hourly employee who transferred to a salaried status after 31 October 2004, or (3) a salaried employee who made an irrevocable election to receive Company Core Contributions under the Plan instead of continuing to earn credited service under the Air Products and Chemicals, Inc. Pension Plan for Salaried Employees (Salaried Pension Plan). Company Core Contributions are made under IRC Section 401(a).

Company Core Contributions are cash contributions made by the Company to eligible participants' accounts in accordance with the participants' investment direction election. The amount of Company Core Contributions is based on participants' service and base pay as follows:

- 4% of base pay if credited service is less than 10 years, or
- 5% of base pay if credited service is between 10 and 19 years, or
- 6% of base pay if credited service is 20 years or more.

Eligible participants are not required to contribute to the Plan in order to receive the Company Core Contribution.

For participants who are receiving Company Core Contributions, the Company will match participant contributions as follows:

- \$0.75 for each \$1.00 of the first 4% of base pay that is contributed, if it is before tax, plus
- \$0.50 for each \$1.00 of the next 2% of base pay that is contributed, if it is before tax.

For participants who are not receiving Company Core Contributions but rather are earning credited service in the Salaried Pension Plan or in the Pension Plan for Hourly Rated Employees of Air Products and Chemicals, Inc., the Company will match participant contributions as follows:

- \$0.75 for each \$1.00 of the first 3% of base pay that is contributed, if it is before tax, plus
- \$0.25 for each \$1.00 of the next 3% of base pay that is contributed, either before tax or after tax.

Catch-up contributions are not eligible for matching contributions.

Company matching contributions are invested in the Company Stock Fund. The Company's matching contributions may be transferred by the Plan's participants to any other of the Plan's investment options at any time. As such, the Company Stock Fund is deemed participant directed.

**(e) Contribution Percentage Changes**

Contribution percentage changes are effective as soon as administratively possible after receipt of request.

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**RETIREMENT SAVINGS PLAN**

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**(f) Rollovers**

A participant or any other employee who is entitled to make a “rollover contribution” to the Plan under the IRC may make a cash contribution to the Plan of all or a portion of any such rollover contribution amount.

**(g) Vesting**

Participants are immediately vested in 100% of their elected salary deferrals, rollover contributions, the Company’s matching contributions, and earnings thereon. A participant vests in Company Core Contributions plus investment earnings thereon, 20% for each year of service reaching 100% after five years of service, or, if earlier, upon reaching age 65.

**(h) Forfeitures**

Forfeitures can be used by the Company to reduce Company Core Contributions. Forfeitures used to reduce Company Core Contributions for 2010 were approximately \$247,000 and are reflected as a reduction to the Company Core Contributions in the accompanying Statement of Changes in Net Assets Available for Benefits. There were no unallocated forfeitures at year-end.

**(i) Withdrawal Provisions**

Upon application, but no sooner than 12 months after any earlier withdrawal:

- (a) a participant may withdraw all or a portion of after-tax contributions and earnings thereon;
- (b) after withdrawing all amounts described in subparagraph (a), a participant may withdraw any company matching contributions and earnings thereon;
- (c) after withdrawing all amounts described in subparagraphs (a) and (b), a participant may withdraw before-tax contributions and then vested Company Core Contributions upon:
  - (i) attaining age 59½ or
  - (ii) providing satisfactory evidence that the withdrawal is required on account of a “hardship.” Hardship withdrawals will be limited to situations in which a participant has an immediate and heavy financial need and a distribution from the Plan is necessary to meet that need. A Plan loan must be pursued first. A hardship withdrawal may be made without regard to whether any other withdrawal has occurred within the last 12 months and will result in the suspension of the right to participate in the Plan for the next 6 months. A hardship withdrawal cannot include earnings accrued after December 31, 1988.

A participant, upon separation of employment, is entitled to receive all amounts credited to his or her account, including before-tax, after-tax, catch-up, company matching contributions, and all vested Company Core Contributions. This distribution will automatically occur on or about 60 days after the end of the month in which employment ends if the participant’s account balance is less than \$1,000. Any outstanding loan balance, which is not repaid within 90 days, will be treated as a taxable

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distribution. As an exception, at the discretion of the Pension Investment Committee, loan balances may be transferred to a successor employer for participants whose employment ends due to a divestiture of a business or segment of the Company. Participants may elect to roll over distributions directly into another qualified plan or an Individual Retirement Account. The distribution of a participant's account balance may be deferred until the earlier of age 70½ or death.

**(j) Participant Loans**

The Plan may make a loan or loans to any participant upon electronic request through Fidelity. Loans may be made in an amount that, when added to the outstanding balance of any other loan, will not exceed the lesser of \$50,000 reduced by any loan amounts repaid during the preceding year, or one half of the present value of the participant's vested account balance. Participant loans are valued at the sum of the unpaid principal balance, plus accrued but unpaid interest. The loan must be adequately secured, bear a reasonable interest rate, and be repaid within a maximum of five years, unless such loan is for a principal residence, in which case the loan is to be repaid within a maximum of 25 years. The interest rate charged on participant loans during the Plan year ended 30 September 2010, ranged from 4.25% to 12.5%.

Loan principal and interest repayments are credited directly to the borrowing participant's plan account and invested in accordance with the participant's then-current investment directions. At the time of a participant's termination of employment, the participant must repay the full principal amount remaining to avoid a taxable deemed distribution of the loan balance.

**(k) Investment Directions**

Participant investment fund elections can be made in increments of 1% provided the percentages total 100%. Company matching contributions are invested in the Company Stock Fund, which may be transferred by the Plan's participants to any other investment option at any time. Participants can elect to have their contributions to the Plan and Company Core Contributions invested in the following funds:

*Money Market Fund (Fidelity Money Market Trust Retirement Government Money Market Portfolio)* – This fund seeks to provide as high a level of current income as is consistent with the preservation of principal and liquidity, by investing primarily in U.S. government securities and repurchase agreements.

*Life Cycle Funds (SSgA Target Retirement Income Securities Lending Series Fund Class II, SSgA Target Retirement 2010 Securities Lending Series Fund Class II, SSgA Target Retirement 2015 Securities Lending Series Fund Class II, SSgA Target Retirement 2020 Securities Lending Series Fund Class II, SSgA Target Retirement 2025 Securities Lending Series Fund Class II, SSgA Target Retirement 2030 Securities Lending Series Fund Class II, SSgA Target Retirement 2035 Securities Lending Series Fund Class II, SSgA Target Retirement 2040 Securities Lending Series Fund Class II, SSgA Target Retirement 2045 Securities Lending Series Fund Class II, and SSgA Target Retirement 2050 Securities Lending Series Fund Class II)* – These funds of funds invest in a portfolio of index commingled funds tracking U.S. stocks, U.S. bonds, and international stocks. The

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**RETIREMENT SAVINGS PLAN**

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allocation of assets shifts from one weighted more heavily to stocks to one more heavily weighted to bonds as the target date approaches.

*Corporate Bond Fund (Western Asset Core Plus Bond Portfolio Financial Fund Class I)* – This mutual fund seeks to maximize total return by investing in intermediate term (duration of three to seven years) U.S. dollar-denominated fixed income securities issued by domestic and foreign entities.

*Balanced Fund (Dodge & Cox Balanced Fund)* – This mutual fund seeks to provide regular income, conservation of principal, and an opportunity for long-term growth of principal and income through investments in a diversified portfolio of common stocks, preferred stocks, bonds, and cash equivalents.

*S&P 500 Index Stock Fund (SSgA S&P 500 Index Securities Lending Series Fund – Class II)* – This commingled fund seeks to provide investment results that parallel the performance results of the Standard and Poor's 500 Index by investing in common stocks of companies that comprise this index.

*Large Cap Value Fund (Vanguard Windsor II Fund Class Admiral)* – This mutual fund seeks to generate long-term growth of capital as well as income from dividends. This fund invests in common stocks of large companies that the fund's management believes are out of favor or undervalued.

*Large Cap Growth Fund (American Funds Growth Fund of America Fund Class R5)* – This mutual fund seeks long-term growth of principal within the arena of large capitalization growth stocks.

*International Stock Fund (Fidelity International Discovery Fund Class K)* – This mutual fund invests a majority of its assets in non-U.S. common stocks, with a focus on those that pay current dividends and that the fund's management believes show potential for capital appreciation. The fund may opportunistically invest in non-U.S. debt securities, including lower-quality debt securities.

*Small Capitalization Equity Fund (Pyramis Small Capitalization Core Commingled Pool)* – This commingled fund seeks long-term capital growth within the arena of domestic small capitalization companies.

*Company Stock Fund (Common Stock of Air Products and Chemicals, Inc.)* – This fund is a nondiversified investment option designed to provide participants with an opportunity to share in the potential growth of the Company's common stock. This fund is a nonleveraged employee stock ownership plan within the Plan allowing participants to have dividends reinvested in their Company Stock Fund account or to receive quarterly dividend checks.

*Fixed Income Securities Fund (SSgA Stable Value Fund)* – This fund invests in traditional investment contracts with insurance companies and banks, and short to intermediate term fixed income securities or portfolios that are "wrapped" by third-party financial institutions that guarantee principal and a predetermined interest rate yield.

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RETIREMENT SAVINGS PLAN**

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*Brokerage Window (Fidelity BrokerageLink)* – A brokerage account that offers a range of Fidelity and nonfidelity mutual funds.

Participant changes to investment elections can apply to future contributions, accumulated saving, or both. Participant investment election changes completed by 4 p.m. (Eastern Time) are effective the same New York Stock Exchange (NYSE) business day and are reflected in the participant's accounts the next NYSE business day.

Participants may not redirect accumulated savings directly from the Fixed Income Securities Fund to the Money Market Fund or to Brokerage Link.

The fair value of individual investments that represent 5% or more of the Plan's total net assets available for benefits as of 30 September 2010 and 2009 was as follows:

<b>Investment</b>	<b>2010</b>	<b>2009</b>
	(In thousands)	
Balanced Fund	\$ 118,742	119,944
S&P 500 Index Stock Fund	96,206	91,727
International Stock Fund	91,619	90,308
Large Cap Value Fund	164,851	166,900
Company Stock Fund	430,157	429,122
Fixed Income Securities Fund	234,788	245,768

**(2) Summary of Accounting Policies**

**(a) Basis of Accounting**

The financial statements have been prepared on the accrual basis of accounting. The Company has elected to file these financial statements with the Securities and Exchange Commission prepared in conformity with guidelines issued under ERISA, as amended.

Fully benefit responsive contracts held in the Fixed Income Securities Fund are included in the financial statements at fair value as reported to the Plan by State Street Global Advisors, the investment manager, and are then adjusted to contract value in determining net assets available for benefits.

**(b) Use of Estimates**

The preparation of financial statements in conformity with U.S. generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of net assets and liabilities and changes therein, and disclosure of contingent assets and liabilities. Actual results could differ from those estimates.

**AIR PRODUCTS AND CHEMICALS, INC.**  
**RETIREMENT SAVINGS PLAN**

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**(c) *Investment Valuation and Income Recognition***

The Plan's investments are stated at fair value. Quoted market prices are used to value investments. Shares of mutual and commingled funds are valued at the net asset value (NAV) of shares held by the Plan at year-end. The investments are using NAV as a practical expedient for fair value.

The fair value of the contracts held in the Fixed Income Securities Fund is calculated by State Street Global Advisors by discounting the related cash flows based on current yields of similar instruments with comparable durations (note 4). Interest-bearing cash is presented separately as a temporary investment. See note 3 for disclosure of the Plan's fair value measurements.

Purchases and sales are recorded on a trade-date basis. Interest is recorded on an accrual basis. Dividends are recorded on the ex-dividend date.

**(d) *Risks and Uncertainties***

Investment securities, in general, are exposed to various risks, such as interest rate, credit, and overall market volatility risks. Due to the level of risk associated with certain investment securities, it is reasonably possible that changes in the values of investment securities will occur in the near term and could materially impact participants' account balances and the amounts reported in the accompanying Statements of Net Assets Available for Benefits. The Plan's exposure to a concentration of credit risk is dependent upon the investment allocations selected by the Plan's participants. At 30 September 2010 and 2009, 29% and 30% of the Plan's net assets, respectively, were invested in the common stock of the Company. The underlying value of the Company's stock is impacted by the performance of the Company, the market's evaluation of such performance, and other factors.

**(e) *Payment of Benefits***

Benefits are recorded when paid.

**(f) *Recent Accounting Pronouncements***

In January 2010, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) 2010-06, *Improving Disclosures about Fair Value Measurements*, amending Accounting Standards Codification (ASC) No. 820, *Fair Value Measurements and Disclosures* (ASC 820). The guidance requires disclosure of transfers of assets and liabilities between Levels 1 and 2 of the fair value hierarchy, and information on purchases, sales, issuances, and settlements on a gross basis in the reconciliation of the assets and liabilities measured under Level 3 of the fair value hierarchy. The amendment also clarifies existing disclosure requirements on levels of disaggregation and disclosures about inputs and valuation techniques. The guidance will be effective for the Plan's financial statements for the year ended 30 September 2011, except for the disclosure requirements on Level 3 activity, which will be effective for the Plan's financial statements for the year ending 30 September 2012. The Plan's management does not expect the additional disclosure requirements to have a material impact on the Plan's financial statements.

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30 September 2010 and 2009

In September 2010, the FASB issued ASU 2010-25, *Reporting Loans to Participants by Defined Contribution Pension Plans*, incorporated into ASC No. 962, *Plan Accounting – Defined Contribution Pension Plans*. The guidance requires that participant loans be classified as notes receivable from participants, which are segregated from plan investments and measured at their unpaid principal balance plus any accrued but unpaid interest. As permitted under the ASU, the Plan has retrospectively adopted the ASU for the Plan years ending 30 September 2010 and 2009. The adoption of ASU 2010-25 did not have a material impact on the Plan's financial statements.

**(3) Fair Value Measurements**

The Company adopted ASC 820 on 1 October 2008. ASC 820 defines fair value as an exit price (i.e., 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). ASC 820 establishes a three-level fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value.

- Level 1 – Quoted prices (unadjusted) in active markets for identical assets or liabilities;
- Level 2 – Inputs that are observable for the asset or liability, either directly or indirectly through market corroboration, for substantially the full term of the asset or liability; and
- Level 3 – Inputs that are unobservable for the asset or liability based on the Company's own assumptions (about the assumptions market participants would use in pricing the asset or liability).

If the inputs used to measure the financial assets and liabilities fall within more than one level described above, the categorization is based on the lowest level input that is significant to the fair value measurement of the instrument.

Within the Plan, investments are recorded at fair value as follows:

**(a) Mutual Funds**

The Mutual funds are valued at their respective NAV. The NAV is based on the value of the underlying assets owned by the funds, less their liabilities then divided by the number of shares outstanding. The NAV is quoted in an active market and therefore presented as a Level 1 asset.

**(b) Company Stock Fund**

The Company Stock Fund is valued based on the number of shares held by the Plan at year-end multiplied by the closing price of the Company's stock on the New York Stock Exchange and therefore presented as a Level 1 asset.

**(c) Commingled Funds**

Commingled funds are valued at NAV, determined by each fund's trustee based on the fair value of the underlying securities within the funds which are traded on active markets and presented as a Level 2 asset.



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**(d) Fixed Income Securities Fund**

The Fixed Income Securities Fund comprises both the fair value of traditional investment contracts and short to intermediate term fixed income securities that are included in commingled funds, which are wrapped by third-party financial institutions. The fair value of the traditional investment contracts and wrap contracts is calculated based on the discounted present value of the differences between the replacement cost and actual cost of the contracts. The fair value of the underlying short to intermediate term fixed income securities held by the commingled funds is based upon the NAV. Similar to the commingled funds noted above, the underlying securities are traded on active markets. As the fair value of the traditional investment contracts and wrap contracts represents an insignificant portion of the total value of the Fixed Income Securities Fund, the fund itself has been presented as a Level 2 asset.

**(e) Investments Measured at Fair Value**

Investments measured at fair value at 30 September 2010 and 2009 are summarized below (in thousands):

		<b>30 September 2010</b>			
		<b>Total</b>	<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>
Assets:					
Interest-bearing cash	\$	8,403	8,403	—	—
Money Market Fund		31,936	31,936	—	—
Mutual Funds		526,131	526,131	—	—
Company Stock Fund		430,157	430,157	—	—
Commingled Funds		220,878	—	220,878	—
Fixed Income Securities Fund		234,788	—	234,788	—
Total					
investments	\$	<u>1,452,293</u>	<u>996,627</u>	<u>455,666</u>	<u>—</u>

**AIR PRODUCTS AND CHEMICALS, INC.  
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		<b>30 September 2009</b>			
		<b>Total</b>	<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>
Assets:					
Interest-bearing cash	\$	8,047	8,047	—	—
Money Market Fund		36,067	36,067	—	—
Mutual Funds		484,247	484,247	—	—
Company Stock Fund		429,122	429,122	—	—
Commingled Funds		191,960	—	191,960	—
Fixed Income Securities Fund		245,768	—	245,768	—
Total investments	\$	1,395,211	957,483	437,728	—

**(4) Fixed Income Securities Fund**

Contributions made to the Fixed Income Securities Fund (Fund) are invested in traditional investment contracts with insurance companies and other financial institutions, and short to intermediate term fixed income securities or portfolios that are “wrapped” by third-party financial institutions that guarantee principal and a predetermined interest rate yield. The contract issuers of the traditional investment contracts and the wrap providers are highly rated financial institutions. The contracts held in this Fund are deemed fully benefit-responsive as they provide that the Plan’s participants may make withdrawals at contract value. As described in note 2, because the contracts are deemed fully benefit-responsive, contract value is the relevant measurement attributable for the contracts held in the Fund. Contract value represents contributions made under the contract, plus earnings, less participant withdrawals and administrative expenses.

The Fund’s contracts are included in the accompanying Statements of Net Assets Available for Benefits at fair value, and are then adjusted to contract value in determining net assets available for benefits. The contract value of the contracts in this portfolio was \$229,266,000 and \$242,959,000 at 30 September 2010 and 2009, respectively.

No valuation reserves were recorded against the contract value for credit risk of the contract issuers or otherwise for the Fund at 30 September 2010 and 2009. The average annualized yield was 2.25% and 2.63% as of 30 September 2010 and 2009, respectively. The Fund’s annualized crediting interest rates as of 30 September 2010 and 2009 were 2.18% and 2.98%, respectively. The crediting interest rate is based on the provisions agreed upon with the issuer, which reset monthly, but it may not be less than zero.

Key factors that could influence future average interest crediting rates include, but are not limited to: Plan cash flows, changes in interest rates, total return performance of the bond strategies underlying each of the Fund’s contracts, and default or credit failures of any of the securities, investment contracts, or other investments held in the Fund.

Participants may ordinarily direct the withdrawal or transfer of all or a portion of their investment at contract value. Certain events, although considered unlikely and not probable, such as a change in

**AIR PRODUCTS AND CHEMICALS, INC.**  
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30 September 2010 and 2009

administration or operation of the Plan or Fund, group terminations, layoffs, or exclusion of group eligibility in the Plan, may limit the ability of participants to access their investments at contract value. The contract issuers may terminate the contracts in the unlikely event of a default by the Plan.

**(5) Income Tax Status**

The Internal Revenue Service has determined and informed the Company, by letter dated 20 August 2003, that the Plan and related trust are designed in accordance with applicable sections of the IRC. Although the Plan has been amended since receiving the determination letter, the Plan Administrator and the Plan's tax counsel believe that the Plan is designed and is currently being operated in compliance with the applicable requirements of the IRC. No provision for income taxes has been included in the Plan's financial statements.

**(6) Expenses of the Plan**

All reasonable third-party fees and expenses for administration of the Plan have been paid by the Plan, including (but not limited to) trustee fees, record-keeping fees, audit fees, proxy voting fees, and communication expenses. Such expenses are assessed to participant accounts as a quarterly administrative charge. Expenses incident to the management of the Plan's investments are deducted from the earnings of the respective investments.

**(7) Plan Termination**

Although it has not expressed any intent to do so, the Company has the right under the Plan to discontinue its contributions at any time and to terminate the Plan subject to the provisions of ERISA. In the event of plan termination, the entire amount credited to each participant's account will be fully vested.

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**(8) Net Change in Fair Value of Investments**

The net appreciation (depreciation) in fair values of investments (including gains and losses on investments bought and sold, as well as held during the year) for the years ended 30 September 2010 and 2009 is as follows:

	2010	2009
	(In thousands)	
Life Cycle Funds	\$ 5,323	979
Corporate Bond Fund	4,694	2,536
Balanced Fund	5,797	(1,449)
S&P 500 Index Stock Fund	9,223	(5,412)
Large Cap Growth Fund	3,796	(1,295)
International Stock Fund	3,631	(1,416)
Large Cap Value Fund	8,482	(19,363)
Small Capitalization Equity Fund	7,884	1,701
Company Stock Fund	29,173	53,330
Fixed Income Securities Fund	6,039	7,325
Brokerage Window	1,925	(651)
	\$ 85,967	36,285

**(9) Related-Party Transactions**

The Plan holds common stock of the Company, representing qualifying equity securities as defined by ERISA, valued at \$430,157,000 and \$429,122,000, representing 29% and 30% of net assets available for plan benefits at 30 September 2010 and 2009, respectively.

The Plan invests in funds managed by Fidelity valued at \$220,375,000 and \$210,718,000 representing 15% for both years of net assets available for plan benefits at 30 September 2010 and 2009, respectively.

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**(10) Reconciliation of Financial Statements to Form 5500**

The following is a reconciliation of net assets available for benefits per the financial statements at 30 September 2010 and 2009 to Form 5500:

	<b>2010</b>	<b>2009</b>
	(In thousands)	
Net assets available for benefits per the financial statements	\$ 1,469,228	1,412,351
Amounts allocated to withdrawing participants	(3,230)	(3,062)
Net assets available for benefits per the form 5500	\$ 1,465,998	1,409,289

The following is a reconciliation of benefits paid to participants per the financial statements for the year ended 30 September 2010 to Form 5500:

	<b>2010</b>
	(In thousands)
Distributions to participants per the financial statements	\$ 131,939
Add amounts allocated to withdrawing participants at 30 September 2010	3,230
Less amounts allocated to withdrawing participants at 30 September 2009	3,062
Distributions to participants per the form 5500	\$ 132,107

**(11) Subsequent Events**

The Plan has evaluated subsequent events for potential recognition and/or disclosure through 25 March 2011, the date these financial statements were issued. There were no subsequent events required to be recognized or disclosed in the financial statements.

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Schedule H, Line 4(i) – Schedule of Assets (Held at end of Year)

30 September 2010

(In thousands)

Identity of issue	Description	Fair value
* Fidelity Trust Management Company: Interest-bearing cash	Cash	\$ 8,403
* Money Market Fund: Fidelity Money Market Trust Retirement Government Money Market Portfolio	Money market fund; par value	31,936
Life Cycle Funds	Commingled investment pool	57,693
Corporate Bond Fund: Western Asset Core Plus Bond Portfolio Financial Fund Class I	Mutual fund shares: 6,397,075 shares	70,112
Balanced Fund: Dodge & Cox Balanced Fund	Mutual fund shares: 1,823,706 shares	118,742
S&P 500 Index Stock Fund: State Street S&P 500 Index Securities Lending Series Fund – Class II	Commingled investment pool	96,206
Large Cap Value Fund: Vanguard Windsor II Fund Class Admiral	Mutual fund shares: 3,936,278 shares	164,851
Large Cap Growth Fund: American Funds Growth Fund of America Fund Class R5	Mutual fund shares: 2,131,734 shares	59,369
* International Stock Fund: Fidelity International Discovery Fund Class K	Mutual fund shares: 2,957,358 shares	91,619
* Small Capitalization Equity Fund: Pyramis Small Capitalization Core Commingled Pool	Commingled investment pool	66,979
* Company Stock Fund: Air Products and Chemicals, Inc. Common Stock	Common stock: 5,193,882 shares Historical cost: \$261,323	430,157
Fixed Income Securities Fund: State Street Stable Value Fund	Guaranteed investment contracts, 2.25% (average yield) in 2010	234,788
* Brokerage Window: Fidelity BrokerageLink	Brokerage window for many publicly available mutual funds	21,438
Total investments		<u>\$ 1,452,293</u>

\* Represents investments with a party in interest.

See accompanying independent auditors' report.