

**STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP**

Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instruction 1(b).

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934 or Section 30(h) of the Investment Company Act of 1940

OMB APPROVAL	
OMB Number:	3235-0287
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1. Name and Address of Reporting Person* <u>Dixon Robert D</u>  (Last) (First) (Middle) 7201 HAMILTON BOULEVARD  (Street) ALLENTOWN PA 18195  (City) (State) (Zip)	2. Issuer Name and Ticker or Trading Symbol <u>AIR PRODUCTS &amp; CHEMICALS INC</u> <u>/DE/ [ APD ]</u>	5. Relationship of Reporting Person(s) to Issuer (Check all applicable) Director 10% Owner <input checked="" type="checkbox"/> Officer (give title below) Other (specify below) Sr.V.P. and G.M.
	3. Date of Earliest Transaction (Month/Day/Year) 10/01/2010	
		6. Individual or Joint/Group Filing (Check Applicable Line) <input checked="" type="checkbox"/> Form filed by One Reporting Person <input type="checkbox"/> Form filed by More than One Reporting Person

**Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned**

1. Title of Security (Instr. 3)	2. Transaction Date (Month/Day/Year)	2A. Deemed Execution Date, if any (Month/Day/Year)	3. Transaction Code (Instr. 8)		4. Securities Acquired (A) or Disposed Of (D) (Instr. 3, 4 and 5)			5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4)	6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	7. Nature of Indirect Beneficial Ownership (Instr. 4)
			Code	V	Amount	(A) or (D)	Price			
Common Stock	10/01/2010		M		7,000	A	\$35.82	30,439.959	D	
Common Stock	10/01/2010 <sup>(1)</sup>		J		9.996 <sup>(2)</sup>	A	\$0.0000 <sup>(3)</sup>	30,449.955	D	
Common Stock	10/01/2010		F		408	D	\$83.26	30,041.955	D	
Common Stock	10/01/2010		F		467	D	\$83.02	29,574.955	D	
Common Stock	10/01/2010		F		4,247	D	\$83.02	25,327.955	D	
Common Stock	10/01/2010 <sup>(1)</sup>		J		127.64	A	\$0.0000 <sup>(3)</sup>	3,984.66	I	By RSP <sup>(4)</sup>

**Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)**

1. Title of Derivative Security (Instr. 3)	2. Conversion or Exercise Price of Derivative Security	3. Transaction Date (Month/Day/Year)	3A. Deemed Execution Date, if any (Month/Day/Year)	4. Transaction Code (Instr. 8)		5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5)		6. Date Exercisable and Expiration Date (Month/Day/Year)		7. Title and Amount of Securities Underlying Derivative Security (Instr. 3 and 4)	8. Price of Derivative Security (Instr. 5)	9. Number of derivative Securities Beneficially Owned Following Reported Transaction(s) (Instr. 4)	10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	11. Nature of Indirect Beneficial Ownership (Instr. 4)	
				Code	V	(A)	(D)	Date Exercisable	Expiration Date						Title
Stock Option (Right to Buy) <sup>(5)</sup>	\$35.82	10/01/2010		M			7,000	08/08/1988 <sup>(6)</sup>	10/03/2010	Common Stock	7,000	\$0.0000	0.0000	D	

**Explanation of Responses:**

- Transactions not required to be reported since last filing.
- Shares acquired with cash dividends under the issuer's Dividend Reinvestment and Direct Stock Purchase and Sale Plan.
- Not applicable to this security
- Shares represented by units of interest in the Company Stock Fund held under the issuer's Retirement Savings Plan.
- Employee Stock Options granted under the issuer's Long-Term Incentive Plan.
- These options become exercisable in one-third increments on the first three anniversaries of grant.

Linda M. Svoboda as Attorney 10/04/2010  
in Fact

\*\* Signature of Reporting Person Date

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

\* If the form is filed by more than one reporting person, see Instruction 4 (b)(v).

\*\* Intentional misstatements or omissions of facts constitute Federal Criminal Violations See 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, see Instruction 6 for procedure.

Persons who respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB Number.