

AIR PRODUCTS & CHEMICALS INC /DE/

Form 424B3

July 28, 2011

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The information in this preliminary prospectus supplement is not complete and may change. This preliminary prospectus supplement and the accompanying prospectus are not an offer to sell these securities and they are not soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

**Filed Pursuant to Rule 424(b)(3)
Registration No. 333-155725**

SUBJECT TO COMPLETION, DATED JULY 28, 2011

PRELIMINARY PROSPECTUS SUPPLEMENT

(To prospectus dated November 26, 2008)

\$

Air Products and Chemicals, Inc.

% Notes due

The notes referenced above (the Notes) will mature on , . We will pay interest on the Notes on and of each year, beginning on , 2012. We may redeem the Notes prior to maturity, in whole or in part, as described in this prospectus supplement.

Investing in these Notes involves risks. See Risk Factors on page S-3 of this prospectus supplement to read about important factors you should consider before buying the notes.

| | Public Offering Price(1) | Underwriting Discount | Proceeds, Before Expenses, to the Company |
|----------|-------------------------------------|----------------------------------|--|
| Per Note | % | % | % |
| Total | \$ | \$ | \$ |

(1) Plus accrued interest, if any, from August , 2011.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus supplement or the accompanying prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The Notes will be ready for delivery in book-entry form only through the facilities of The Depository Trust Company for the accounts of its participants, including Euroclear Bank S.A./N.V., as operator of the Euroclear System, and Clearstream Banking, société anonyme, on or about August , 2011.

Joint Bookrunners

Barclays Capital

Deutsche Bank Securities

The date of this prospectus supplement is July , 2011.

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You should rely only on the information contained in this prospectus supplement and the accompanying prospectus. We have not authorized anyone to provide you with information different from that contained in this prospectus supplement and the accompanying prospectus. We are offering to sell Notes and making offers to buy Notes only in jurisdictions in which offers and sales are permitted. The information contained in this prospectus supplement and the accompanying prospectus is accurate only as of the date of this prospectus supplement, regardless of the time of delivery of this prospectus supplement and the accompanying prospectus or any sale of the Notes. In this prospectus supplement and the accompanying prospectus, the Company, we, us and our refer to Air Products and Chemicals, Inc.

If we use a capitalized term in this prospectus supplement and do not define the term, it is defined in the accompanying prospectus.

References herein to \$ and dollars are to the currency of the United States.

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ABOUT AIR PRODUCTS AND CHEMICALS, INC.

Air Products and Chemicals, Inc. (the Company), a Delaware corporation originally founded in 1940, serves technology, energy, industrial and healthcare customers globally with a unique portfolio of products, services and solutions that include atmospheric gases, process and specialty gases, performance materials, equipment and services. The Company is the world's largest supplier of hydrogen and helium and has built leading positions in growth markets such as semiconductor materials, refinery hydrogen, natural gas liquefaction and advanced coatings and adhesives.

RISK FACTORS

You should carefully consider the risk factors in the documents incorporated by reference in this prospectus, and all of the other information herein and therein before making an investment decision. See Risk Factors beginning on page 9 of our Annual Report on Form 10-K for the year ended September 30, 2010.

USE OF PROCEEDS

We will use the net proceeds from the sale of the Notes, which are expected to be approximately \$ million after payment of underwriting discounts and estimated expenses related to the offering, for general corporate purposes. These purposes may include repayment and refinancing of debt, acquisitions, working capital, capital expenditures and repurchases and redemptions of securities. Pending any specific application, we may initially invest funds in short-term marketable securities or apply them to the reduction of short-term indebtedness.

DESCRIPTION OF NOTES

The following description of the particular terms of the % Notes due (the Notes) offered hereby (referred to in the prospectus as the Debt Securities) supplements the description of the general terms and provisions of the Debt Securities included in the accompanying prospectus. The following summary of the Notes is qualified in its entirety by reference in the accompanying prospectus to the description of the indenture dated as of January 10, 1995 (the Indenture), between the Company and The Bank of New York Mellon Trust Company, N.A. as successor to U.S. Bank National Association (formerly, Wachovia Bank, National Association and initially First Fidelity Bank, National Association), as trustee (the Trustee).

General

The Notes will mature at par on , . The Notes will constitute part of the senior debt of the Company and will rank *pari passu* with all other unsecured and unsubordinated indebtedness of the Company. The Notes will be issued in fully registered form only, in denominations of \$2,000 and additional multiples of \$1,000. Principal of and interest on the Notes will be payable, and the transfer of Notes will be registerable, through the Depositary, as described below.

Each Note will bear interest from , 2011 at the annual rate of %. Interest on the Notes will be payable semi-annually on and , commencing on , 2012, to the person in whose name such Note is registered at the close of business on the 15th calendar day prior to the payment date.

Interest payable at the maturity of the Notes will be payable to registered holders of the Notes to whom principal is payable. Interest will be computed on the basis of a 360-day year of twelve 30-day months.

If any interest payment date falls on a day that is not a Business Day, the interest payment will be postponed to the next day that is a Business Day, and no interest on such payment will accrue for the period from and after such interest payment date. If the maturity date of the Notes falls on a day that is not a Business Day, the payment of interest and principal shall be made on the next succeeding Business Day, and no interest on such payment will accrue for the period from and after the maturity date.

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Interest payments for the Notes will include accrued interest from and including the date of issue or from and including the last date in respect of which interest has been paid, as the case may be, to but excluding the interest payment date or the date of maturity, as the case may be.

The Notes will constitute a separate series of Debt Securities under the Indenture.

The Company may, without the consent of the holders of a series of Notes, issue additional notes having the same ranking and the same interest rate, maturity and other terms (except for the issue date and public offering price) as the Notes. Any additional notes having such similar terms, together with the Notes, will constitute a single series of Debt Securities under the Indenture. No additional notes having such similar terms may be issued if an Event of Default has occurred with respect to the Notes or if such additional notes will not be fungible with the previously issued Notes for federal income tax purposes.

As used in this prospectus supplement, **Business Day** means any day, other than a Saturday or Sunday, that is neither a legal holiday nor a day on which banking institutions are authorized or required by law or regulation to close in The City of New York.

Optional Redemption

The Notes will be redeemable as a whole at any time or in part from time to time, at the option of the Company, at a redemption price equal to the greater of (i) 100% of the principal amount of the Notes or (ii) the sum of the present values of the remaining scheduled payments of principal and interest thereon from the redemption date to the applicable maturity date (exclusive of any accrued interest) discounted to the redemption date on a semiannual basis (assuming a 360-day year consisting of twelve 30-day months) at the Treasury Rate plus basis points, plus, in each case, any interest accrued but not paid to the date of redemption.

Treasury Rate means, with respect to any redemption date for the Notes (i) the yield, under the heading which represents the average for the immediately preceding week, appearing in the most recently published statistical release designated H.15(519) or any successor publication that is published weekly by the Board of Governors of the Federal Reserve System and that establishes yields on actively traded United States Treasury securities adjusted to constant maturity under the caption Treasury Constant Maturities, for the maturity corresponding to the Comparable Treasury Issue (if no maturity is within three months before or after the maturity date for the Notes, yields for the two published maturities most closely corresponding to the Comparable Treasury Issue shall be determined and the Treasury Rate shall be interpolated or extrapolated from such yields on a straight line basis, rounding to the nearest month) or (ii) if that release (or any successor release) is not published during the week preceding the calculation date or does not contain such yields, the rate per annum equal to the semiannual equivalent yield to maturity of the Comparable Treasury Issue, calculated using a price for the Comparable Treasury Issue (expressed as a percentage of its principal amount) equal to the Comparable Treasury Price for that redemption date. The Treasury Rate shall be calculated on the third business day preceding the redemption date.

Comparable Treasury Issue means the United States Treasury security selected by an Independent Investment Banker as having a maturity comparable to the remaining term of the Notes to be redeemed that would be utilized, at the time of selection and in accordance with customary financial practice, in pricing new issues of corporate debt securities of comparable maturity to the remaining term of the Notes. **Independent Investment Banker** means one of the Reference Treasury Dealers appointed by the Company.

Comparable Treasury Price means with respect to any redemption date for the Notes (i) the average of four Reference Treasury Dealer Quotations for that redemption date, after excluding the highest and lowest such Reference Treasury Dealer Quotations, or (ii) if the Trustee obtains fewer than four such Reference Treasury Dealer Quotations,

the average of all such quotations.

Reference Treasury Dealer means each of Barclays Capital Inc. (and its successors), Deutsche Bank Securities Inc. (and its successors) and two other primary U.S. Government securities dealers in New York City

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(each, a Primary Treasury Dealer) appointed by the Company; *provided, however*, that if any of the foregoing shall cease to be a Primary Treasury Dealer, the Company shall substitute therefor another Primary Treasury Dealer.

Reference Treasury Dealer Quotations means, with respect to each Reference Treasury Dealer and any redemption date, the average, as determined by the Trustee, of the bid and asked prices for the Comparable Treasury Issue (expressed in each case as a percentage of its principal amount) quoted in writing to the Trustee by that Reference Treasury Dealer at 5:00 p.m. (New York City time) on the third business day preceding that redemption date.

Unless the Company defaults in payment of the redemption price, on and after the redemption date interest will cease to accrue on the Notes or portions thereof called for redemption.

Defeasance of the Indenture and Notes

The provisions of the Indenture described in the prospectus under Description of Securities Debt Securities Defeasance of the Indenture and Securities will apply to the Notes. In addition, as a condition to defeasance, we must deliver to the trustee an opinion of counsel to the effect that the holders of the Notes will not recognize income, gain, or loss for federal income tax purposes as a result of such defeasance and will be subject to federal income tax on the same amounts, in the same manner and at the same times as would have been the case if such defeasance had not occurred.

Book-Entry, Delivery and Form

The Notes will be issued in the form of one or more fully registered global notes (the Global Notes) registered in the name of The Depository Trust Company, New York, New York (the Depository or DTC) or Cede & Co., the Depository's nominee. Beneficial interests in the Global Notes will be represented through book-entry accounts of financial institutions acting on behalf of beneficial owners as direct and indirect participants in the Depository.

Investors may elect to hold interests in the Global Notes through the Depository, Clearstream Banking, société anonyme (Clearstream) or Euroclear Bank S.A./N.V., as operator of the Euroclear System (Euroclear) if they are participants of such systems, or indirectly through organizations which are participants in such systems. Clearstream and Euroclear will hold interests on behalf of their participants through customers' securities accounts in Clearstream's and Euroclear's names on the books of their respective depositaries, which in turn will hold such interests in customers' securities accounts in the depositaries' names on the books of the Depository. Citibank, N.A. will act as depositary for Clearstream and JPMorgan Chase Bank, N.A., successor to The Chase Manhattan Bank, will act as depositary for Euroclear (in such capacities, the U.S. Depositaries). Beneficial interest in the Global Notes will be held in denominations of \$2,000 and additional multiples of \$1,000. Except as described below, the Global Notes may be transferred, in whole and not in part, only to another nominee of the Depository or to a successor of the Depository or its nominee.

The Depository has advised the Company as follows: the Depository is a limited-purpose trust company organized under the New York Banking Law, a banking organization within the meaning of the New York Banking Law, a member of the Federal Reserve System, a clearing corporation within the meaning of the New York Uniform Commercial Code, and a clearing agency registered pursuant to the provisions of Section 17A of the Securities Exchange Act of 1934, as amended (the Exchange Act). The Depository holds securities deposited with it by its participants and records the settlement of transactions among its participants in such securities through electronic computerized book-entry changes in accounts of the participants, thereby eliminating the need for physical movement of securities certificates. The Depository's participants include securities brokers and dealers (including the Underwriters), banks, trust companies, clearing corporations and certain other organizations, some of whom (and/or their representatives) own the Depository. Access to the Depository book-entry system is also available to others, such

as banks, brokers, dealers and trust companies that clear through or maintain a custodial relationship with a participant, either directly or indirectly.

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Clearstream advises that it is incorporated under the laws of Luxembourg as a bank. Clearstream holds securities for its customers (Clearstream Customers) and facilitates the clearance and settlement of securities transactions between Clearstream Customers through electronic book-entry transfers between their accounts. Clearstream provides to Clearstream Customers, among other things, services for safekeeping, administration, clearance and settlement of internationally traded securities and securities lending and borrowing. Clearstream interfaces with domestic securities markets in over 30 countries through established depository and custodial relationships. As a bank, Clearstream is subject to regulation by the Luxembourg Commission for the Supervision of the Financial Sector (Commission de Surveillance du Secteur Financier). Clearstream Customers are recognized financial institutions around the world, including underwriters, securities brokers and dealers, banks, trust companies, clearing corporations and certain other organizations. Clearstream's U.S. customers are limited to securities brokers and dealers and banks. Indirect access to Clearstream is also available to other institutions such as banks, brokers, dealers and trust companies, that clear through or maintain a custodial relationship with a Clearstream Customer.

Distributions with respect to the Notes held through Clearstream will be credited to cash accounts of Clearstream Customers in accordance with its rules and procedures, to the extent received by the U.S. Depository for Clearstream.

Euroclear advises that it was created in 1968 to hold securities for its participants (Euroclear Participants) and to clear and settle transactions between Euroclear Participants through simultaneous electronic book-entry delivery against payment, thereby eliminating the need for physical movement of certificates and any risk from lack of simultaneous transfers of securities and cash. Euroclear provides various other services, including securities lending and borrowing, and interfaces with domestic markets in several countries. Euroclear is operated by Euroclear Bank S.A./N.A. (the Euroclear Operator), under contract with Euroclear Clearance Systems, S.C., a Belgian cooperative corporation (the Cooperative).

All operations are conducted by the Euroclear Operator, and all Euroclear securities clearance accounts and Euroclear cash accounts are accounts with the Euroclear Operator, not the Cooperative. The Cooperative establishes policy for Euroclear on behalf of Euroclear Participants. Euroclear Participants include banks (including central banks), securities brokers and dealers and other professional financial intermediaries and may include the Underwriters. Indirect access to Euroclear is also available to other firms that clear through or maintain a custodial relationship with a Euroclear Participant, either directly or indirectly.

Securities clearance accounts and cash accounts with the Euroclear Operator are governed by the Terms and Conditions Governing Use of Euroclear and the related Operating Procedures of the Euroclear System, and applicable Belgian law (collectively, the Terms and Conditions). The Terms and Conditions govern transfers of securities and cash within Euroclear, withdrawals of securities and cash from Euroclear, and receipts of payments with respect to securities in Euroclear. All securities in Euroclear are held on a fungible basis without attribution of specific certificates to specific securities clearance accounts. The Euroclear Operator acts under the Terms and Conditions only on behalf of Euroclear Participants and has no record of or relationship with persons holding through Euroclear Participants.

Distributions with respect to the Notes held beneficially through Euroclear will be credited to the cash accounts of Euroclear Participants in accordance with the Terms and Conditions, to the extent received by the U.S. Depository for Euroclear.

Euroclear further advises that investors that acquire, hold and transfer interests in the Notes by book-entry through accounts with the Euroclear Operator or any other securities intermediary are subject to the laws and contractual provisions governing their relationship with their intermediary, as well as the laws and contractual provisions governing the relationship between such an intermediary and each other intermediary, if any, standing between themselves and the Global Notes.

The Euroclear Operator advises as follows: under Belgian law, investors that are credited with securities on the records of the Euroclear Operator have a co-property right in the fungible pool of interests in securities on deposit with the Euroclear Operator in an amount equal to the amount of interests in securities credited to their accounts. In the event of the insolvency of the Euroclear Operator, Euroclear Participants would have a right under Belgian law

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to the return of the amount and type of interests in securities credited to their accounts with the Euroclear Operator. If the Euroclear Operator did not have a sufficient amount of interests in securities on deposit of a particular type to cover the claims of all Participants credited with such interests in securities on the Euroclear Operator's records, all Participants having an amount of interests in securities of such type credited to their accounts with the Euroclear Operator would have the right under Belgian law to the return of their *pro rata* share of the amount of interests in securities actually on deposit.

Under Belgian law, the Euroclear Operator is required to pass on the benefits of ownership in any interests in securities on deposit with it (such as dividends, voting rights and other entitlements) to any person credited with such interests in securities on its records.

Individual certificates in respect of the Notes will not be issued in exchange for the Global Notes, except in very limited circumstances. If DTC notifies the Company that it is unwilling or unable to continue as a clearing system in connection with the Global Notes, or ceases to be a clearing agency registered under the Exchange Act, and a successor clearing system is not appointed by the Company within 90 days after receiving such notice from DTC or upon becoming aware that DTC is no longer so registered, the Company will issue or cause to be issued individual certificates in registered form on registration of transfer of, or in exchange for, book-entry interests in the Notes represented by such Global Notes upon delivery of such Global Notes for cancellation.

Title to book-entry interests in the Notes will pass by book-entry registration of the transfer within the records of Clearstream, Euroclear or DTC, as the case may be, in accordance with their respective procedures. Book-entry interests in the Notes may be transferred within Clearstream and within Euroclear and between Clearstream and Euroclear in accordance with procedures established for these purposes by Clearstream and Euroclear. Book-entry interests in the Notes may be transferred within DTC in accordance with procedures established for this purpose by DTC. Transfers of book-entry interests in the Notes among Clearstream and Euroclear and DTC may be effected in accordance with procedures established for this purpose by Clearstream, Euroclear and DTC.

A further description of the Depository's procedures with respect to the Global Notes is set forth in the accompanying prospectus under "Description of Securities—Debt Securities—Global Securities." The Depository has confirmed to the Company, the Underwriters and the Trustee that it intends to follow such procedures.

Global Clearance and Settlement Procedures

Initial settlement for the Notes will be made in immediately available funds. We will make all payments of principal, premium, if any, and interest in respect of the Notes in immediately available funds while the Notes are held in book-entry only form. Secondary market trading between DTC participants will occur in the ordinary way in accordance with the Depository's rules and will be settled in immediately available funds using the Depository's Same-Day Funds Settlement System. Secondary market trading between Clearstream Customers and/or Euroclear Participants will occur in the ordinary way in accordance with the applicable rules and operating procedures of Clearstream and Euroclear and will be settled using the procedures applicable to conventional Eurobonds in immediately available funds.

Cross-market transfers between persons holding directly or indirectly through the Depository on the one hand, and directly or indirectly through Clearstream Customers or Euroclear Participants, on the other, will be effected in the Depository in accordance with the Depository's rules on behalf of the relevant European international clearing system by its U.S. Depository; however, such cross-market transactions will require delivery of instructions to the relevant European international clearing system by the counterparty in such system in accordance with its rules and procedures and within its established deadlines (European time). The relevant European international clearing system will, if the transaction meets its settlement requirements, deliver instructions to its U.S. Depository to take action to effect final

settlement on its behalf by delivering interests in the Notes to or receiving interests in the Notes from the Depository, and making or receiving payment in accordance with normal procedures for same-day funds settlement applicable to the Depository. Clearstream Customers and Euroclear Participants may not deliver instructions directly to their respective U.S. Depositories.

Because of time-zone differences, credits of interests in the Notes received in Clearstream or Euroclear as a result of a transaction with a DTC participant will be made during subsequent securities settlement processing and dated the business day following the Depository settlement date. Such credits or any transactions involving interests

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in such Notes settled during such processing will be reported to the relevant Clearstream Customers or Euroclear Participants on such business day. Cash received in Clearstream or Euroclear as a result of sales of interests in the Notes by or through a Clearstream Customer or a Euroclear Participant to a DTC participant will be received with value on the Depository settlement date but will be available in the relevant Clearstream or Euroclear cash account only as of the business day following settlement in the Depository.

Although the Depository, Clearstream and Euroclear have agreed to the foregoing procedures in order to facilitate transfers of interests in the Notes among participants of the Depository, Clearstream and Euroclear, they are under no obligation to perform or continue to perform such procedures and such procedures may be changed or discontinued at any time.

Applicable Law

The Notes and the Indenture will be governed by and construed in accordance with the laws of the State of New York.

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MATERIAL UNITED STATES FEDERAL INCOME TAX CONSIDERATIONS

In General

The following discussion is a summary of the material U.S. federal income tax consequences relevant to the purchase, ownership and disposition (including an exchange) of the Notes, but this summary does not purport to be a complete analysis of all potential tax effects to holders of the Notes.

The discussion is based on provisions of the Internal Revenue Code of 1986, as amended (the Code), U.S. Treasury Regulations issued thereunder, Internal Revenue Service rulings and pronouncements and judicial decisions now in effect, all of which are subject to change at any time and subject to differing interpretations. Any such change may be applied retroactively in a manner that could adversely affect a holder of the Notes and the continued validity of this summary.

This discussion does not address all of the U.S. federal income tax consequences that may be relevant to you in light of your particular circumstances (such as the application of the alternative minimum tax) or that may be relevant to you because you are subject to special rules, including but not limited to rules applicable to certain financial institutions, U.S. expatriates, insurance companies, dealers in securities or currencies, traders in securities, U.S. holders whose functional currency is not the U.S. Dollar, tax-exempt organizations and persons holding the Notes as part of a straddle, hedge, constructive sale, conversion transaction or other integrated transaction.

In addition, this discussion only applies to you if you purchase your Notes for cash in the original issue and at the Notes issue price within the meaning of Section 1273 of the Code (i.e., the first price at which a substantial amount of Notes is sold for cash to persons other than bond houses, brokers or similar persons or organizations acting in the capacity of underwriters, placement agents, or wholesalers).

Moreover, except where specifically indicated, this summary does not discuss the effect of any other federal tax laws (i.e., estate and gift tax), or any state, local or foreign tax laws.

In addition, if a partnership or other entity taxable as a partnership holds the Notes, the tax treatment of a partner will generally depend on the status of a partner and the activities of the partnership. This discussion does not address the tax consequences to you if you hold the Notes through a partnership, an entity taxable as a partnership or any other pass-through entity.

This discussion does not discuss any reporting requirements of or other consequences under the Treasury Regulations relating to certain tax shelter transactions.

Finally, the discussion deals only with Notes held as capital assets within the meaning of Section 1221 of the Code.

As used herein, U.S. Holder means a beneficial owner of the Notes that is:

an individual who is a citizen or resident of the U.S., including an alien individual who is a lawful permanent resident of the U.S. or who meets the substantial presence test under Section 7701(b) of the Code,

a corporation or other entity taxable as a corporation created or organized in or under the laws of the U.S. or of any state thereof or of the District of Columbia,

an estate, the income of which is subject to U.S. federal income tax regardless of its source, or

a trust, if a U.S. court can exercise primary supervision over the administration of the trust and one or more U.S. persons can control all substantial trust decisions (or if a valid election is in place to treat the trust as a U.S. person).

A non-U.S. Holder is a beneficial owner of the Notes that is an individual, corporation, estate or trust who or that is not a U.S. Holder.

We have not sought and will not seek any rulings from the Internal Revenue Service (the IRS), with respect to the matters discussed below. There can be no assurances that the IRS will not take a different position concerning

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the tax consequences of the purchase, ownership or disposition (including an exchange) of the Notes or that any such position would not be sustained.

Please consult your own tax advisors with regard to the application of the tax consequences discussed below to your particular situation and the application of any other federal as well as state, local or foreign tax laws and tax treaties, including gift and estate tax laws.

U.S. Holders

This section applies to you if you are a U.S. Holder.

Interest

Stated interest on the Notes will generally be treated as qualified stated interest for U.S. federal income tax purposes and generally will be taxable to a U.S. Holder as ordinary interest income at the time it is paid or accrued in accordance with such holder's regular method of accounting for U.S. federal income tax purposes.

Sale or Other Taxable Disposition of the Notes

On the sale, exchange (other than in a tax-free transaction), redemption, retirement or other taxable disposition of your Note:

You will recognize taxable gain or loss equal to the difference between the amount realized upon such disposition (less a portion allocable to any accrued and unpaid interest, which will be taxable to you as ordinary income at that time if not previously included in your income) and your tax basis in the Note.

Your gain or loss will be a capital gain or loss and will be a long-term capital gain or loss if you have held the Note for more than one year. Otherwise, your gain or loss will be a short-term gain or loss. For some non-corporate taxpayers (including individuals) long-term capital gains are eligible for reduced rates of taxation. The deductibility of capital losses is subject to limitation.

Information Reporting and Backup Withholding

Certain non-exempt U.S. Holders will be subject to information reporting in respect of any payments that we may make or are made on our behalf on the Notes and the proceeds of any sale or other disposition of the Notes. In addition, backup withholding, currently at a rate of 28%, may apply, unless the U.S. Holder supplies a taxpayer identification number and other information, certified under penalty of perjury, or otherwise establishes, in the manner prescribed by applicable law, an exemption from backup withholding. Amounts withheld under the backup withholding rules are not an additional tax and may be allowable as a refund or a credit against the U.S. Holder's U.S. federal income tax liability upon furnishing the required information on a timely basis to the IRS.

Medicare Tax on Investment Income

Recent legislation will impose, beginning in 2013, a new 3.8% Medicare contribution tax on the net investment income, including interest, dividends and capital gain, of certain U.S. individuals, estates and trusts.

Non-U.S. Holders

This section applies to you if you are a non-U.S. Holder.

Interest Payments

Subject to the discussion below concerning effectively connected income and backup withholding, payments of interest on the Notes by us or any paying agent to you will not be subject to U.S. federal withholding tax, provided that you satisfy one of two tests.

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The first test (the portfolio interest test) is satisfied if:

you do not own, actually or constructively, 10% or more of the combined voting power of all classes of our stock entitled to vote;

you are not a controlled foreign corporation (within the meaning of the Code) that is related, directly or indirectly, to us;

you are not a bank receiving interest on the Notes on an extension of credit made pursuant to a loan arrangement entered into in the ordinary course of your trade or business; and

you certify to us or our paying agent on IRS Form W-8BEN (or appropriate substitute form) under penalties of perjury, that you are not a U.S. person. If you hold the Notes through a financial institution or other agent acting on your behalf, you will be required to provide appropriate documentation to the agent who will then be required to provide certification to us or our paying agent, either directly or through other intermediaries.

The second test is satisfied if you are otherwise entitled to the benefits of an income tax treaty under which such interest is exempt from U.S. federal withholding tax, and you (or your agent) provide to us a properly executed IRS Form W-8BEN (or an appropriate substitute form) claiming eligibility for the exemption.

Payments of interest on the Notes that do not meet the above-described requirements will be subject to a U.S. federal income tax of 30% (or such lower rate provided by an applicable income tax treaty if you establish that you qualify to receive the benefits of such treaty) collected by means of withholding.

Sale or Other Taxable Disposition of the Notes

Subject to the discussion below concerning effectively connected income and backup withholding, you will not be subject to U.S. federal income tax on any gain realized on the sale, exchange, redemption, retirement or other taxable disposition of the Notes unless you are an individual, you are present in the U.S. for at least 183 days during the year in which you dispose of the Notes, and other conditions are satisfied.

Effectively Connected Income

The preceding discussion assumes that the interest and gain received by you is not effectively connected with your conduct of a trade or business in the U.S. If you are engaged in a trade or business in the U.S. (or, if an applicable income tax treaty so applies, you maintain a permanent establishment in the U.S.) and your investment in a Note is effectively connected with such trade or business (or such permanent establishment):

You will be exempt from the 30% withholding tax on the interest (provided a certification requirement, generally on IRS Form W-8ECI, is met) and will instead generally be subject to regular U.S. federal income tax on any interest and gain with respect to the Notes in the same manner as if you were a U.S. Holder.

If you are a foreign corporation, you may also be subject to an additional branch profits tax of 30% (or such lower rate provided by an applicable income tax treaty if you establish that you qualify to receive the benefits of such treaty).

If you are eligible for the benefits of an applicable tax treaty, any effectively connected income or gain will generally be subject to U.S. federal income tax only if it is also attributable to a permanent establishment maintained by you in the U.S.

U.S. Federal Estate Tax

A Note held or beneficially owned by an individual who, for estate tax purposes, is not a citizen or resident of the U.S. at the time of death will not be includable in the decedent's gross estate for U.S. estate tax purposes, provided that (i) such holder or beneficial owner did not at the time of death actually or constructively own 10% or more of the combined voting power of all classes of our stock entitled to vote and (ii) at the time of death, payments with respect to such Note would not have been effectively connected with the conduct by such holder of a trade or

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business in the U.S. In addition, the U.S. estate tax may not apply with respect to such Note under the terms of an applicable estate tax treaty.

Information Reporting and Backup Withholding

U.S. rules concerning information reporting and backup withholding applicable to a non-U.S. Holder are as follows:

Interest payments you receive will be automatically exempt from the usual backup withholding rules if such payments are subject to the 30% withholding tax on interest or if they are exempt from that tax by application of a tax treaty or the portfolio interest exception. The exemption does not apply if the withholding agent or an intermediary knows or has reason to know that you should be subject to the usual information reporting or backup withholding rules. In addition, information reporting may still apply to payments of interest (on IRS Form 1042-S) even if certification is provided and the interest is exempt from the 30% withholding tax.

Disposition proceeds received by you on a disposition of your Notes through a broker may be subject to information reporting and/or backup withholding if you are not eligible for an exemption, or do not provide the certification described above or the broker has actual knowledge or reason to know that you are a U.S. person. In particular, information reporting and backup withholding may apply if you use the U.S. office of a broker, and information reporting (but generally not backup withholding) may apply if you use the foreign office of a broker that has certain connections to the U.S.

Amounts withheld under the backup withholding rules are not an additional tax and may be allowable as a refund or a credit against the non-U.S. Holder's U.S. federal income tax liability upon furnishing the required information on a timely basis to the IRS.

We suggest that you consult your tax advisors concerning the application of information reporting and backup withholding rules.

Table of Contents**UNDERWRITING**

Under the terms and subject to the conditions set forth in the underwriting agreement, dated July , 2011 (the Underwriting Agreement), the underwriters named below (the Underwriters) for whom Barclays Capital Inc. and Deutsche Bank Securities Inc. are acting as representatives, have severally agreed to purchase, and the Company has agreed to sell to them, severally, the respective principal amount of the Notes set forth opposite their respective names below:

| Name | Principal Amount of Notes |
|-------------------------------|--|
| Barclays Capital Inc. | \$ |
| Deutsche Bank Securities Inc. | |
| Total | \$ |

The Underwriting Agreement provides that the obligations of the several Underwriters to pay for and accept delivery of the Notes are subject to, among other things, the approval of certain legal matters by their counsel and certain other conditions. The Underwriters are obligated to take and pay for all the Notes if any are taken.

The Underwriters propose initially to offer the Notes to the public at the public offering price set forth on the cover page hereof and may offer the Notes to certain dealers at prices that represent a concession not in excess of % of the principal amount of the Notes. Any Underwriter may allow, and such dealers may reallow, a concession not in excess of % the principal amount of the Notes to certain other dealers. After the initial offering of the Notes, the offering price and other selling terms may from time to time be varied by the Underwriters. The offering of the Notes by the Underwriters is subject to receipt and acceptance and subject to the Underwriters' right to reject any order in whole or in part.

In connection with the offering, the Underwriters may purchase and sell Notes in the open market. These transactions may include short sales, stabilizing transactions and purchases to cover positions created by short sales. Short sales involve the sale by the Underwriters of a greater number of Notes than they are required to purchase in the offering. Stabilizing transactions consist of certain bids or purchases made for the purpose of preventing or retarding a decline in the market price of the notes while the offering is in progress.

The Underwriters also may impose a penalty bid. This occurs when a particular Underwriter repays to the Underwriters a portion of the underwriting discount received by it because the representatives have repurchased Notes sold by or for the account of such Underwriter in stabilizing or short covering transactions.

These activities by the Underwriters, as well as other purchases by the Underwriters for their own accounts, may stabilize, maintain or otherwise affect the market price of the Notes. As a result, the price of the Notes may be higher than the price that otherwise might exist in the open market. If these activities are commenced, they may be discontinued by the Underwriters at any time. These transactions may be effected in the over-the-counter market or otherwise.

Certain of the Underwriters and their respective affiliates engage in transactions with, and perform services for, the Company in the ordinary course of business and have engaged, and may in the future engage, in commercial banking and investment banking transactions with the Company, for which they received or will receive customary fees and expenses.

The Notes are a new issue of securities with no established trading market. The Underwriters have advised the Company that the Underwriters intend to make a market in the Notes. The Underwriters are not obligated, however, to do so and may discontinue their market making at any time without notice. No assurance can be given as to the liquidity of the trading market for the Notes.

Expenses associated with this offering, to be paid by the Company, are estimated to be \$.

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The Company has agreed to indemnify the Underwriters against certain liabilities, including liabilities under the Securities Act of 1933, as amended.

The Notes are offered for sale in those jurisdictions in the United States, Europe, Asia and elsewhere where it is lawful to make such offers.

European Economic Area

In relation to each Member State of the European Economic Area which has implemented the Prospectus Directive (each, a Relevant Member State), each Underwriter has represented and agreed that with effect from and including the date on which the Prospectus Directive is implemented in that Relevant Member State (the Relevant Implementation Date) it has not made and will not make an offer of Notes which are the subject of the offering contemplated by this prospectus supplement to the public in that Relevant Member State other than:

- (a) to any legal entity which is a qualified investor as defined in the Prospectus Directive;
- (b) to fewer than 100 or, if the Relevant Member State has implemented the relevant provision of the 2010 PD Amending Directive, 150, natural or legal persons (other than qualified investors as defined in the Prospectus Directive), as permitted under the Prospectus Directive, subject to obtaining the prior consent of the representatives for any such offer; or

- (c) in any other circumstances falling within Article 3(2) of the Prospectus Directive,

provided that no such offer of Notes shall require the Company or any Underwriter to publish a prospectus pursuant to Article 3 of the Prospectus Directive.

For the purposes of this provision, the expression an offer of Notes to the public in relation to any Notes in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and the Notes to be offered so as to enable an investor to decide to purchase or subscribe for the Notes, as the same may be varied in that Member State by any measure implementing the Prospectus Directive in that Member State and the expression Prospectus Directive means Directive 2003/71/EC (and amendments thereto, including the 2010 PD Amending Directive, to the extent implemented in the Relevant Member State), and includes any relevant implementing measure in each Relevant Member State and the expression 2010 PD Amending Directive means Directive 2010/73/EU.

United Kingdom

Each Underwriter has represented and agreed that:

- (a) it has only communicated or caused to be communicated and will only communicate or cause to be communicated an invitation or inducement to engage in investment activity (within the meaning of Section 21 of the Financial Services and Markets Act 2000 (the FSMA)) received by it in connection with the issue or sale of the Notes in circumstances in which Section 21(1) of the FSMA does not apply to us; and

- (b) it has complied and will comply with all applicable provisions of the FSMA with respect to anything done by it in relation to the Notes in, from or otherwise involving the United Kingdom.

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LEGAL OPINIONS

The validity of the Notes offered hereby will be passed on for the Company by its internal legal counsel. The Underwriters have been represented in connection with this offering by Cravath, Swaine & Moore LLP. Cravath, Swaine & Moore LLP provides legal services to the Company from time to time.

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Prospectus

**AIR PRODUCTS AND CHEMICALS, INC.
DEBT SECURITIES
PREFERRED STOCK
DEPOSITARY SHARES
COMMON STOCK
WARRANTS**

We may offer these securities in one or more offerings. We will provide the specific terms of these securities in supplements to this prospectus. You should read this prospectus and any supplement carefully before you invest.

NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED OF THESE SECURITIES OR PASSED UPON THE ACCURACY OR ADEQUACY OF THIS PROSPECTUS. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

The date of this prospectus is November 26, 2008

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WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports, proxy statements and other information with the SEC. You may read and copy any document we file at the SEC's Public Reference Room, 450 Fifth Street, N.W., Washington, D.C. 20549. You may call the SEC at 1-800-SEC-0330 for further information on the SEC's Public Reference Room. You may also access our SEC filings at the SEC's web site at <http://www.sec.gov>.

The SEC allows us to incorporate by reference into this prospectus the information we file with it, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of this prospectus, and later information that we file with the SEC will automatically update and supersede this information. We incorporate by reference the documents listed below and any future filings made with the SEC under Section 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934 until this offering is completed:

Annual Report on Form 10-K for the year ended September 30, 2008;

Current Report on Form 8-K dated November 24, 2008; and

the description of our common stock in our Form 8-A that was filed on March 20, 1998.

You may request a copy of these filings at no cost, by writing to or telephoning us at:

Corporate Secretary's Office
Air Products and Chemicals, Inc.
7201 Hamilton Boulevard
Allentown, Pennsylvania 18195-1501
Telephone: (610) 481-4911

You should rely only on the information incorporated by reference or provided in this prospectus or the accompanying prospectus supplement. We have not authorized anyone to provide you with different information. We are not making an offer of these securities in any state where the offer is not permitted. You should not assume that the information in this prospectus, any prospectus supplement or any document which we incorporate by reference is accurate as of any date other than the date on its cover.

THE COMPANY

Air Products is a Delaware corporation originally founded in 1940. We serve technology, energy, industrial and healthcare customers globally with a unique portfolio of products, services and solutions that include atmospheric gases, process and specialty gases, performance materials, equipment and services. We are the world's largest supplier of hydrogen and helium and have built leading positions in growth markets such as semiconductor materials, refinery hydrogen, natural gas liquefaction, and advanced coatings and adhesives. As used in this Report, unless the context indicates otherwise, the term "Company" includes subsidiaries and predecessors of the registrant and its subsidiaries.

On 31 January 2008, we sold our interest in our vinyl acetate ethylene polymers joint ventures to Wacker Chemie AG, our long time joint venture partner. We completed the sale of our polymers emulsions business with the sale of our two remaining production facilities in Elkton, Maryland and Piedmont, South Carolina and the related North American atmospheric emulsions and pressure sensitive adhesives businesses in June 2008. During fiscal 2008, we

sold our high purity process chemicals business which had previously been reported as part of the electronics and performance materials operating segment. In July 2008, our Board of Directors authorized management to pursue the sale of our U.S. healthcare business; in September 2008, we sold our healthcare business related to several New York and New Jersey locations and in October 2008 sold our seating and mobility unit.

Previously, we reported results for a chemicals segment, which consisted of the polymer emulsions business and the polyurethane intermediates business, and a healthcare segment. Beginning with the first quarter of 2008, the polymer emulsions business was accounted for as discontinued operations and the polyurethane intermediates business was reported as part of the tonnage gases segment. Beginning with the

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fourth quarter of 2008, the U.S. healthcare business was accounted for as discontinued operations and the European healthcare business was reported as part of the merchant gases segment. We now manage our operations, assess performance and report earnings under four business segments: merchant gases; tonnage gases; electronics and performance materials; and equipment and energy.

RATIOS OF EARNINGS TO FIXED CHARGES

| | Year Ended September 30, | | | | |
|------------------------------------|---------------------------------|-------------|-------------|-------------|-------------|
| | 2004 | 2005 | 2006 | 2007 | 2008 |
| Ratio of earnings to fixed charges | 6.0 | 6.6 | 6.8 | 7.0 | 7.4 |

The ratio of earnings to fixed charges is determined by dividing earnings, which includes income from continuing operations before taxes, undistributed earnings of less-than-fifty-percent-owned affiliates, and fixed charges, by fixed charges. Fixed charges consist of interest on all indebtedness plus that portion of operating lease rentals representative of the interest factor (deemed to be 21% of operating lease rentals).

USE OF PROCEEDS

Unless otherwise specified in the applicable prospectus supplement, the net proceeds we receive from the sale of the securities offered by this prospectus and the accompanying prospectus supplement will be used for general corporate purposes. General corporate purposes may include the repayment of debt, investments in or extensions of credit to our subsidiaries, redemption of common stock or preferred stock and the financing of possible acquisitions or business expansion. The net proceeds may be invested temporarily or applied to repay short-term debt until they are used for their stated purpose.

DESCRIPTION OF SECURITIES**Debt Securities**

The following description of the terms of the debt securities sets forth general terms that may apply to the debt securities. The particular terms of any debt securities will be described in the prospectus supplement relating to those debt securities.

The debt securities will be our senior debt securities. The debt securities will be issued under an indenture dated as of January 10, 1995, between us and The Bank of New York Trust Company, N.A. (formerly, Wachovia Bank, National Association and initially First Fidelity Bank, National Association), as trustee (the Indenture).

The following is a summary of the most important provisions of the Indenture. A copy of the Indenture is an exhibit to the registration statement of which this prospectus is a part. Section references below are to the section in the Indenture. The referenced sections of the Indenture are incorporated by reference.

General

The Indenture does not limit the amount of debt securities that we may issue. The Indenture provides that debt securities may be issued up to the principal amount authorized by us from time to time. The debt securities will be unsecured and will have the same rank as all of our other unsecured and unsubordinated debt.

The debt securities may be issued in one or more separate series. The prospectus supplement relating to the particular series of debt securities being offered will specify the particular amounts, prices and terms of those debt securities. These terms may include:

the title of the debt securities;

any limit upon the aggregate principal amount issued;

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the maturity date or dates, or the method of determining the maturity dates;

the interest rate or rates, or the method of determining those rates;

the interest payment dates and the regular record dates;

the places where payments may be made;

any mandatory or optional redemption provisions;

any sinking fund or analogous provisions;

the portion of principal amount of the debt security payable upon acceleration of maturity if other than the full principal amount;

any deletions of, or changes or additions to, the events of default or covenants;

the form of the debt securities;

if other than U.S. dollars, the currency or currencies, including composite currencies, in which payments on the debt securities will be payable and whether we or a holder may elect payment to be made in a different currency;

the method of determining the amount of any payments on the debt securities which are linked to an index;

whether the debt securities will be issued in the form of one or more global securities in temporary or definitive form;

any terms relating to the delivery of the debt securities if they are to be issued upon the exercise of warrants;

whether and on what terms we will pay additional amounts to holders of the debt securities that are not U.S. persons in respect of any tax, assessment or governmental charge withheld or deducted and, if so, whether and on what terms we will have the option to redeem the debt securities rather than pay the additional amounts;

any conversion or exchange provisions;

any terms for the attachment to the debt securities of warrants, options or other rights to purchase or sell our securities;

any special United States Federal income tax or other considerations with respect to the debt securities; and any other specific terms of the debt securities.

(Section 2.3)

Unless otherwise specified in the prospectus supplement, debt securities denominated in U.S. dollars will be issued in denominations of \$1,000 or an integral multiple of \$1,000. (Section 2.8)

We may issue some of the debt securities as original issue discount debt securities. Original issue discount securities bear no interest or bear interest at below-market rates and will be sold at a discount below their stated principal amount.

Certain Covenants of the Company

Limitation on Liens Subject to the exceptions set forth below under Exempted Indebtedness, we covenant that we will not create or assume, nor will we permit any Restricted Subsidiary (as hereinafter defined) to create or assume, any,

mortgage

security interest,

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pledge, or

lien

(together, we refer to these transactions as liens) of or upon any Principal Property (as defined below), or any underlying real estate of such property, or shares of capital stock or indebtedness of any Restricted Subsidiary, whether owned at the date of the Indenture or thereafter acquired, without equally and ratably securing the outstanding debt securities. This restriction will not apply to certain permitted liens, including the following:

(i) liens on any Principal Property which are created or assumed contemporaneously with, or within 120 days after (or in the case of any such Principal Property which is being financed on the basis of long-term contracts or similar financing arrangements for which a firm commitment is made by one or more banks, insurance companies or other lenders or investors (not including us or any Restricted Subsidiary), then within 360 days after), the completion of the acquisition, construction or improvement of such Principal Property to secure or provide for the payment of any part of the purchase price of such property or the cost of such construction or improvement, or liens on any Principal Property existing at the time of acquisition thereof;

(ii) liens on property or shares of capital stock or indebtedness of a corporation existing at the time such corporation is merged into or consolidated with us or a Restricted Subsidiary or at the time of a sale, lease or other disposition of the properties of a corporation substantially as an entirety to us or a Restricted Subsidiary;

(iii) liens on property or shares of capital stock or indebtedness of a corporation existing at the time such corporation becomes a Restricted Subsidiary;

(iv) liens to secure indebtedness of a Restricted Subsidiary to us or to another Restricted Subsidiary, but only so long as such indebtedness is held by us or a Restricted Subsidiary;

(v) liens in favor of the United States of America or any State thereof, or any department, agency or political subdivision of the United States of America or any State thereof, to secure certain payments pursuant to any contract or statute, including liens to secure indebtedness of the pollution control or industrial revenue bond type, or to secure indebtedness incurred for the purpose of financing all or any part of the purchase price or cost of constructing or improving property subject to such liens;

(vi) liens in favor of any customer arising in respect of certain payments made by or on behalf of such customer for goods produced for or services rendered to such customer in the ordinary course of business not exceeding the amount of such payments;

(vii) liens to extend, renew or replace in whole or in part any lien referred to in the foregoing clauses (1) to (6), or in this clause (7), or any lien created prior to and existing on the date of the Indenture, provided that the principal amount of indebtedness secured thereby shall not exceed the principal amount of indebtedness so secured at the time of such extension, renewal or replacement, and that such extension, renewal or replacement shall be limited to all or a part of the property subject to the lien so extended, renewed or replaced (plus improvements on such property); and

(viii) certain statutory liens, liens for taxes and certain other liens.

(Section 3.6)

Limitations on Sale and Lease-Back Transactions Subject to the exceptions set forth below under Exempted Indebtedness, sale and lease-back transactions by us or any Restricted Subsidiary of any Principal Property which has been owned and operated by us or a Restricted Subsidiary for more than 120 days are prohibited unless

(i) the property involved is property which could be the subject of a lien without equally and ratably securing the debt securities;

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(ii) an amount equal to the Attributable Debt (as hereinafter defined) of any such sale and lease-back transaction is applied to the acquisition of another Principal Property of equal or greater fair market value or to retirement of indebtedness for borrowed money (including the securities) which by its terms matures on or is renewable at the option of the obligor to a date more than twelve months after the creation of such indebtedness; or

(iii) the lease involved is for a term (including renewals) of not more than three years.

(Section 3.7)

Exempted Indebtedness Either we or a Restricted Subsidiary may create or assume liens and enter into sale and lease-back transactions, notwithstanding the limitations outlined above, provided that at the time thereof and after giving effect thereto the aggregate amount of indebtedness secured by all such liens and Attributable Debt of all such sale and lease-back transactions outstanding shall not exceed 5% of Consolidated Net Tangible Assets (as hereinafter defined). (Section 3.8)

Limitations on Mergers, Consolidations and Sales of Assets If, upon our consolidation or merger with or into any other corporation, or upon any sale, conveyance or lease of substantially all our properties, any Principal Property would become subject to any lien, we, prior to such event, will secure the debt securities equally and ratably with any of our other obligations then entitled thereto by a direct lien on all such Principal Property prior to all other liens other than any theretofore existing thereon. (Section 3.9)

Certain Definitions

The term **Restricted Subsidiary** means any Subsidiary

(a) substantially all the property of which is located, or substantially all the business of which is carried on, within the United States and

(b) which owns or leases a Principal Property.

The term **Principal Property** means any manufacturing plant, research facility or warehouse owned or leased by us or any of our subsidiaries which is located within the United States and has a net book value exceeding the greater of \$5,000,000 and 1% of the shareholders' equity of our company and our consolidated subsidiaries, excluding any property which the board of directors by resolution declares is not of material importance to our total business as consolidated with the business of our subsidiaries.

The term **Attributable Debt** means the present value (discounted as provided in the senior indenture) of the obligation of a lessee for required rental payments for the remaining term of any lease.

The term **Consolidated Net Tangible Assets** means at any time the total of all assets appearing on the most recent consolidated balance sheet of us and our consolidated subsidiaries, prepared in accordance with generally accepted accounting principles, at our and their net book values (after deducting related depreciation, depletion, amortization and all other valuation reserves which, in accordance with such principles, are set aside in connection with the business conducted), but excluding goodwill, trademarks, patents, unamortized debt discount and all other like segregated intangible assets, and amounts on the asset side of such balance sheet for our capital stock, all as determined in accordance with such principles, less Consolidated Current Liabilities.

The term **Consolidated Current Liabilities** means the aggregate of the current liabilities of us and our consolidated subsidiaries appearing on the consolidated balance sheet of our company and our consolidated subsidiaries, all as

determined in accordance with generally accepted accounting principles.

(Section 1.1)

Other than the restrictions on liens and sale and lease-back transactions described above, neither the Indenture nor the debt securities afford you protection in the event of a highly leveraged transaction involving us or any of our subsidiaries, including any takeover, recapitalization or other restructuring that may result in a sudden and significant decline in credit rating.

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Events of Default, Waiver and Notice

As to any series of securities, an event of default is defined in the Indenture as being any of the following events:

- (i) default for 30 days in the payment of any interest on the securities of such series;
- (ii) default in the payment of principal or premium due on the securities of any series;
- (iii) default in the payment of any sinking fund installment on the securities of such series, when due;
- (iv) our default for 90 days in the performance of any other of the covenants or agreements in the Indenture (other than those set forth exclusively in the terms of any other series of securities);
- (v) certain events of bankruptcy, insolvency and reorganization of our company; or
- (vi) any other events as may be established in any applicable supplement.

(Section 5.1)

No event of default with respect to any particular series of securities necessarily constitutes an event of default with respect to any other series of securities. (Section 5.11)

The trustee must give notice of a default to the holders of the series of debt securities on which the default exists within 90 days unless the default is cured or waived. However, the trustee may withhold this notice if the trustee considers it in the interest of the holders of securities of such series to do so. The trustee may not withhold notice in the event of a payment default with regard to principal, interest or a sinking fund. (Section 5.11)

If an event of default has occurred and is continuing:

as described in clause (1), (2) or (3) above, either the trustee or the holders of 25% in principal amount of the securities of such series then outstanding may declare the principal (or, in the case of discounted securities, the amount specified in the terms thereof) of all such securities to be due and payable immediately.

as described in clause (4) or (5) above, either the trustee or the holders of not less than 25% in principal amount of all affected securities, voting as a single class, may declare the principal (or, in the case of discounted securities, the amount specified in the terms thereof) of all securities to be due and payable immediately.

However, upon certain conditions past defaults as described in clause (4) or (5) above may be waived by the holders of a majority in principal amount of the affected securities then outstanding, except for defaults in

the payment of principal of, or any premium or interest on, such securities or

with respect to any covenant or provision which may not be amended without the approval of each holder affected.

(Sections 5.1 and 5.10)

The holders of a majority in principal amount of the securities of each series affected, voting as a separate class, may direct the time, method and place of conducting any proceeding for any remedy available to the trustee under the

Indenture, subject to certain limitations specified in the Indenture, provided that the holders of securities shall have offered to the trustee reasonable indemnity against costs, expenses and liabilities. (Sections 5.9 and 6.2(d)) We must certify to the trustee on a yearly basis as to the absence of certain defaults. (Section 3.5)

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Modification of the Indenture

Together with the trustee, and subject to the consent of the holders of at least 662/3% of the outstanding principal amount of the outstanding debt securities of all affected series, we may modify the Indenture or any supplement to the Indenture. Without the consent of each affected holder, we may not:

- (i) extend the final maturity of any security;
- (ii) reduce the principal amount or rate of interest of any security;
- (iii) extend the time of payment of interest of any security;
- (iv) reduce the amount payable upon the redemption of any security;
- (v) reduce the amount of the principal of a discounted security payable upon acceleration of the maturity of the security or in the event of bankruptcy;
- (vi) impair the right to institute suit to enforce payment or repayment; or
- (vii) change the provisions in the indenture that relate to its modification or amendment.

(Section 8.2)

Concerning the Trustee

The Bank of New York Mellon Trust Company, N.A., the trustee under the Indenture, also performs certain cash management services for, and provides certain credit facilities to, us in the normal course of business.

Defeasance of the Indenture and Securities

We may, at any time, satisfy our obligations with respect to any payments of principal, premium or interest of any security or securities of any series by depositing in trust with the trustee:

- (a) money (in the currency in which the securities are payable),
- (b) in the case of securities denominated in U.S. dollars, U.S. Government Obligations (as defined in the Indenture), or a combination of U.S. Government Obligations and money, or
- (c) in the case of securities denominated in a foreign currency, Foreign Government Securities (as defined in the Indenture) or a combination of Foreign Government Securities and money.

If the deposit is sufficient to make all payments of interest, principal and premium when due, our obligations with respect to such securities will be discharged and terminated (except as to certain of our obligations to the trustee), and you will be able to look only to the trust fund for any payment of principal, premium and interest on securities of such series until maturity or redemption. (Article Ten)

Under United States Federal income tax law, any deposit as described just above is viewed as a taxable exchange of the securities deposited in the trust for interests in, or for an instrument representing indebtedness of, the trust. Accordingly, at such time as we may elect to deposit securities in a trust as described above, you would be required to

recognize taxable gain or loss as if the securities had been sold for an amount equal to the sum of the amount of money and the fair market value of the securities held in the trust (or, alternatively, the value of the instrument). You then may be required to include in taxable income your share of the income, gain and loss of the trust.

Alternatively, the trust might be considered a separate taxable entity, in which case you might also be taxable on original issue discount as well as interest on the instrument. You should consult your own advisors with respect to the more detailed tax consequences of such deposit and discharge, including possible liabilities with regard to tax laws other than United States Federal income tax law.

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Global Securities

We may issue the debt securities of a series in whole or in part in the form of one or more global certificates that will be deposited with a depository we will identify in a prospectus supplement. We will describe the specific terms of the depository arrangement with respect to a series of debt securities in the accompanying prospectus supplement.

Upon the issuance of a global security, the depository will credit, on its book-entry registration and transfer system, the respective principal amounts of that global security to the accounts of participants in the depository. Ownership of beneficial interests in a global security will be limited to participants or persons that hold interests through participants.

So long as the depository for a global security, or its nominee, is the registered owner of the global security, the depository or its nominee, as the case may be, will be considered the sole owner or holder of the securities represented by that global security. Except as provided in the indenture, owners of beneficial interests in securities represented by a global security will not

- (a) be entitled to have such securities registered in their names,
- (b) receive or be entitled to receive physical delivery of certificates representing such securities in definitive form,
- (c) be considered the owners or holders thereof under the Indenture or
- (d) have any rights under the Indenture.

We may, in our sole discretion, at any time determine that any series of securities issued or issuable in the form of a global security shall no longer be represented by such global security and such global security shall be exchanged for securities in definitive form pursuant to the Indenture.

(Section 2.14)

Preferred Stock

The following is a description of general terms and provisions of the preferred stock. The particular terms of any series of preferred stock will be described in the applicable prospectus supplement.

All of the terms of the preferred stock are, or will be, contained in our Restated Certificate of Incorporation and the certificate of amendment relating to each series of the preferred stock, which will be filed with the SEC at or prior to the time of issuance of the series of the preferred stock.

We are authorized to issue up to 25,000,000 shares of preferred stock, par value \$1.00 per share. As of November 26, 2008, no shares of preferred stock were outstanding. Subject to limitations prescribed by law, the board of directors is authorized at any time to issue one or more series of preferred stock.

The board of directors is authorized to determine, for each series of preferred stock, and the prospectus supplement will set forth with respect to the series the following information:

the designation for any series by number, letter or title that shall distinguish the series from any other series of preferred stock;

the number of shares in any series;

whether dividends on that series of preferred stock will be cumulative;

the dividend rate (or method for determining the rate);

any liquidation preference per share of that series of preferred stock;

any conversion provisions applicable to that series of preferred stock;

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any redemption or sinking fund provisions applicable to that series of preferred stock;

any voting rights of that series of preferred stock; and the terms of any other preferences or rights applicable to that series of preferred stock.

The preferred stock, when issued, will be fully paid and non-assessable.

Dividends

Holders of preferred stock will be entitled to receive, when, as and if declared by the board of directors, cash dividends at the rates and on the dates as set forth in the prospectus supplement. Generally, no dividends will be declared or paid on any series of preferred stock unless full dividends for all series of preferred stock, including any cumulative dividends still owing, have been or contemporaneously are declared and paid. When those dividends are not paid in full, dividends will be declared pro-rata so that the amount of dividends declared per share on each series of preferred stock will bear to each other series the same ratio that accrued dividends per share for each respective series of preferred stock bear to aggregate accrued dividends for all outstanding shares of preferred stock. In addition, generally, unless all dividends on the preferred stock have been paid, no dividends will be declared or paid on the common stock and we may not redeem or purchase any common stock.

Payment of dividends on any series of preferred stock may be restricted by loan agreements, indentures and other transactions we may enter into.

Liquidation

If we voluntarily or involuntarily liquidate, dissolve or wind up our affairs, the holders of each series of preferred stock will be entitled to receive the liquidation preference per share specified in the prospectus supplement plus any accrued and unpaid dividends. Holders of preferred stock will be entitled to receive these amounts before any distribution is made to the holders of common stock. If the amounts payable with respect to preferred stock are not paid in full, the holders of preferred stock will share ratably in any distribution of assets based upon the aggregate liquidation preference for all outstanding shares for each series. After the holders of shares of preferred stock are paid in full, they will have no right or claim to any of our remaining assets.

Neither the par value nor the liquidation preference is indicative of the price at which the preferred stock will actually trade on or after the date of issuance.

Voting

Generally, the holders of preferred stock will not be entitled to vote except as set forth in the prospectus supplement, the Restated Certificate of Incorporation or certificate of amendment or as otherwise required by law.

No Other Rights

The shares of a series of preferred stock will not have any preemptive rights, preferences, voting powers or relative, participating, optional or other special rights except as set forth in the prospectus supplement, the Restated Certificate of Incorporation or certificate of amendment or as otherwise required by law.

Transfer Agent and Registrar

The transfer agent for each series of preferred stock will be designated in the prospectus supplement.

Depository Shares

We may, at our option, elect to offer fractional shares of preferred stock, rather than full shares of preferred stock. If we do, we will issue to the public receipts for depository shares and each of these depository shares will represent a fraction of a share of a particular series of preferred stock. Each owner of a

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depository share will be entitled, in proportion to the applicable fractional interest in shares of preferred stock underlying that depository share, to all rights and preferences of the preferred stock underlying that depository share. Those rights include dividend, voting, redemption and liquidation rights.

The shares of preferred stock underlying the depository shares will be deposited with a depository under a deposit agreement between us, the depository and the holders of the depository receipts evidencing the depository shares. The depository will be a bank or trust company selected by us. The depository will also act as the transfer agent, registrar and dividend disbursing agent for the depository shares.

Holders of depository receipts agree to be bound by the deposit agreement, which requires holders to take certain actions such as filing proof of residence and paying certain charges.

The following is a summary of the most important terms of the depository shares. The deposit agreement, our Restated Certificate of Incorporation and the certificate of amendment for the applicable series of preferred stock that are, or will be, filed with the SEC will set forth all of the terms relating to the depository shares.

Dividends

The depository will distribute all cash dividends or other cash distributions received in respect of the series of preferred stock underlying the depository shares to the record holders of depository receipts in proportion to the number of depository shares owned by those holders on the relevant record date. The record date for the depository shares will be the same date as the record date for the preferred stock.

In the event of a distribution other than in cash, the depository will distribute property received by it to the record holders of depository receipts that are entitled to receive the distribution. However, if the depository determines that it is not feasible to make the distribution, the depository may, with our approval, adopt another method for the distribution.

The method may include selling the property and distributing the net proceeds to the holders.

Liquidation Preference

In the event of our voluntary or involuntary liquidation, dissolution or winding up, the holders of each depository share will be entitled to receive the fraction of the liquidation preference accorded each share of the applicable series of preferred stock, as set forth in the applicable prospectus supplement.

Redemption

If a series of preferred stock underlying the depository shares is subject to redemption, the depository shares will be redeemed from the proceeds received by the depository resulting from the redemption, in whole or in part, of preferred stock held by the depository. Whenever we redeem any preferred stock held by the depository, the depository will redeem, as of the same redemption date, the number of depository shares representing the preferred stock so redeemed. The depository will mail the notice of redemption to the record holders of the depository receipts promptly upon receiving the notice from us and not less than 35 nor more than 60 days prior to the date fixed for redemption of the preferred stock and the depository shares.

Voting

Upon receipt of notice of any meeting at which the holders of preferred stock are entitled to vote, the depositary will mail the information contained in the notice of meeting to the record holders of the depositary receipts underlying the preferred stock. Each record holder of those depositary receipts on the record date will be entitled to instruct the depositary as to the exercise of the voting rights pertaining to the amount of preferred stock underlying that holder's depositary shares. The record date for the depositary shares will be the same date as the record date for the preferred stock. The depositary will try, as far as practicable, to vote the preferred stock underlying the depositary shares in accordance with the instructions of the holders of the depositary receipts. We will agree to take all action which may be deemed necessary by the depositary in

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order to enable the depositary to do so. The depositary will not vote the preferred stock to the extent that it does not receive specific instructions from the holders of depositary receipts.

Withdrawal of Preferred Stock

Owners of depositary shares are entitled, upon surrender of depositary receipts at the principal office of the depositary and payment of any unpaid amount due the depositary, to receive the number of whole shares of preferred stock underlying the depositary shares. Partial shares of preferred stock will not be issued. These holders of preferred stock will not be entitled to deposit the shares under the deposit agreement or to receive depositary receipts evidencing depositary shares for the preferred stock.

Amendment and Termination of Deposit Agreement

The form of depositary receipt evidencing the depositary shares and any provision of the deposit agreement may be amended at any time and from time to time by agreement between us and the depositary. However, any amendment which materially and adversely alters the rights of the holders of depositary shares, other than any change in fees, will not be effective unless the amendment has been approved by at least a majority of the depositary shares then outstanding. The deposit agreement may be terminated by us or the depositary only if:

all outstanding depositary shares have been redeemed or

there has been a final distribution in respect of the preferred stock in connection with our dissolution and such distribution has been made to all the holders of depositary shares.

Charges of Depositary

We will pay all transfer and other taxes and governmental charges arising solely from the existence of the depositary arrangements. We will also pay charges of the depositary in connection with the initial deposit of the preferred stock and the initial issuance of the depositary shares, any redemption of the preferred stock and all withdrawals of preferred stock by owners of depositary shares. Holders of depositary receipts will pay transfer, income and other taxes and governmental charges and certain other charges as provided in the deposit agreement to be for their accounts. In certain circumstances, the depositary may refuse to transfer depositary shares, may withhold dividends and distributions and sell the depositary shares evidenced by the depositary receipt if the charges are not paid.

Reports to Holders

The depositary will forward to the holders of depositary receipts all reports and communications we deliver to the depositary that we are required to furnish to the holders of the preferred stock. In addition, the depositary will make available for inspection by holders of depositary receipts at the principal office of the depositary, and at other places as it may from time to time deem advisable, any reports and communications we deliver to the depositary as the holder of preferred stock.

Liability and Legal Proceedings

Neither we nor the depositary will be liable if either of us are prevented or delayed by law or any circumstance beyond our control in performing our respective obligations under the deposit agreement. Our obligations and those of the depositary will be limited to performance in good faith of our respective duties under the deposit agreement. Neither we nor the depositary will be obligated to prosecute or defend any legal proceeding in respect of any depositary shares or preferred stock unless satisfactory indemnity is furnished. We and the depositary may rely on written advice of

counsel or accountants, on information provided by holders of depositary receipts or other persons believed in good faith to be competent to give such information and on documents believed to be genuine and to have been signed or presented by the proper party or parties.

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Resignation and Removal of Depositary

The depositary may resign at any time by delivering a notice to us of its election to do so. We may remove the depositary at any time. Any such resignation or removal will take effect upon the appointment of a successor depositary and its acceptance of such appointment. The successor depositary must be appointed within 60 days after delivery of the notice for resignation or removal. In addition, the successor depositary must be a bank or trust company having its principal office in the United States of America and having a combined capital and surplus of at least \$150,000,000.

United States Federal Income Tax Consequences

Owners of the depositary shares will be treated for United States Federal income tax purposes as if they were owners of the preferred stock underlying the depositary shares. Accordingly, the owners will be entitled to take into account for United States Federal income tax purposes income and deductions to which they would be entitled if they were holders of the preferred stock. In addition:

no gain or loss will be recognized for United States Federal income tax purposes upon the withdrawal of preferred stock in exchange for depositary shares;

the tax basis of each share of preferred stock to an exchanging owner of depositary shares will, upon the exchange, be the same as the aggregate tax basis of the depositary shares exchanged; and the holding period for preferred stock in the hands of an exchanging owner of depositary shares will include the period during which the person owned the depositary shares.

Common Stock

As of the date of this prospectus, we are authorized to issue up to 300,000,000 shares of common stock, \$1.00 par value per share. As of November 17, 2008, 209,566,838 shares of common stock were outstanding.

Dividends

Holders of common stock are entitled to receive dividends, in cash, securities, or property, as may from time to time be declared by our board of directors, subject to the rights of the holders of the preferred stock.

Voting

Each holder of common stock is entitled to one vote per share on all matters requiring a vote of the stockholders.

Rights Upon Liquidation

In the event of our voluntary or involuntary liquidation, dissolution, or winding up, the holders of common stock will be entitled to share equally in our assets available for distribution after payment in full of all debts and after the holders of preferred stock have received their liquidation preferences in full.

Miscellaneous

Shares of common stock are not redeemable and have no subscription, conversion or preemptive rights.

Warrants

We may issue warrants for the purchase of debt securities, preferred stock or common stock. Warrants may be issued independently or together with our debt securities, preferred stock or common stock and may be attached to or separate from any offered securities. Each series of warrants will be issued under a separate warrant agreement to be entered into between us and a bank or trust company, as warrant agent. The warrant agent will act solely as our agent in connection with the warrants and will not have any obligation or relationship of agency or trust for or with any holders or beneficial owners of warrants. A copy of the warrant agreement will be filed with the SEC in connection with the offering of warrants.

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The prospectus supplement relating to a particular issue of warrants will describe the terms of those warrants, including the following:

the title of the warrants;

any offering price for the warrants;

the aggregate number of the warrants;

the designation and terms of the securities that may be purchased upon exercise of the warrants;

if applicable, the designation and terms of the securities together with which the warrants are issued and the number of warrants issued with each security;

any date from and after which the warrants and any securities issued with them will be separately transferable;

the principal amount of or number of shares of stock that may be purchased upon exercise of a warrant and the price at which the debt securities may be purchased upon exercise;

the dates on which the right to exercise the warrants will commence and expire;

any minimum or maximum amount of the warrants that may be exercised at any one time;

the currency or currency units in which the offering price and the exercise price are payable;

if applicable, a discussion of material United States Federal, or other income tax considerations;

any antidilution provisions of the warrants;

any redemption or call provisions applicable to the warrants;

any additional terms of the warrants, including terms, procedures, and limitations relating to the exchange and exercise of the warrants;

whether the warrants represented by the warrant certificates or debt securities that may be issued upon exercise of the warrants will be issued in registered or bearer form; and any information with respect to book-entry procedures.

PLAN OF DISTRIBUTION

We may sell the securities in any of four ways:

(i) directly to purchasers;

(ii) through underwriters; or

(iii) through agents;

(iv) through dealers.

We may solicit offers to purchase securities directly or by the means of designated agents from time to time. Any such agent, who may be deemed to be an underwriter as that term is defined in the Securities Act of 1933, involved in the offer or sale of the securities in respect of which this prospectus is delivered will be named, and any commissions payable by us to such agent will be set forth, in the prospectus supplement. Unless otherwise indicated in the prospectus supplement, any such agent will be acting on a best efforts basis for the period of its appointment. Agents may be customers of, engage in transactions with, or perform services for, us in the ordinary course of business.

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LEGAL OPINIONS

The legality of the securities in respect of which this Prospectus is being delivered will be passed on for us by Ann E. Padjen, Esq., Corporate and Finance Counsel for the Company and for any underwriters by Cravath, Swaine & Moore LLP, Worldwide Plaza, 825 Eighth Avenue, New York, New York 10019. We pay a salary to Ms. Padjen in her indicated capacity, she is a participant in various employee benefit plans offered to our employees generally, and she owns shares of our common stock and participates in our long-term incentive program, which entitles executives to stock options and deferred stock units. Cravath, Swaine & Moore LLP from time to time acts as special counsel for the Company.

EXPERTS

The consolidated financial statements and schedule of Air Products and Chemicals, Inc. (the Company) as of 30 September 2008 and 2007, and for each of the years in the three-year period ended 30 September 2008, and management's assessment of the internal control over financial reporting as of 30 September 2008 have been incorporated by reference herein in reliance of the reports of KPMG LLP, independent registered public accounting firm, incorporated by reference herein, and upon the authority of said firm as experts in accounting and auditing.

The audit report covering the 30 September 2008 consolidated financial statements refers to the Company's adoption of Financial Accounting Standards Board (FASB) Interpretation No. 48, Accounting for Uncertainty in Income Taxes, effective 1 October 2007; Statement of Financial Accounting Standards No. 158, Employers' Accounting for Defined Benefit Pension and Other Postretirement Plans, as of 30 September 2007; and FASB Interpretation No. 47, Accounting for Conditional Asset Retirement Obligations, effective 30 September 2006.

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Air Products and Chemicals, Inc.

% Notes due

Joint Bookrunners

Barclays Capital

Deutsche Bank Securities