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UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

FORM 11-K

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

(Mark One):

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

For the fiscal year ended December 31, 2008

OR

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

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

Commission file number 1-14601

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

ARCH CHEMICALS, INC. CONTRIBUTING EMPLOYEE OWNERSHIP PLAN

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

Arch Chemicals, Inc.  
501 Merritt 7  
Norwalk, Connecticut 06851

Exhibit Index is p. 22  
Total Pages = 23

REQUIRED INFORMATION

**ARCH CHEMICALS, INC. CONTRIBUTING  
EMPLOYEE OWNERSHIP PLAN**

Financial Statements and Supplemental Schedule

December 31, 2008 and 2007

(With the Report of Independent Registered  
Public Accounting Firm Thereon)



**KPMG LLP**  
Stamford Square  
3001 Summer Street  
Stamford, CT 06905

## **Report of Independent Registered Public Accounting Firm**

The Participants and Administrator  
Arch Chemicals, Inc. Contributing Employee Ownership Plan:

We have audited the accompanying statements of net assets available for plan benefits of the Arch Chemicals, Inc. Contributing Employee Ownership Plan (the Plan) as of December 31, 2008 and 2007, and the related statements of changes in net assets available for plan benefits for the years then ended. These financial statements are the responsibility of the Plan's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the net assets available for plan benefits of the Plan as of December 31, 2008 and 2007, and the changes in net assets available for plan benefits for the years then ended in conformity with U.S. generally accepted accounting principles.

Our audits were performed for the purpose of forming an opinion on the basic financial statements taken as a whole. The supplemental Schedule H, Line 4i – Schedule of Assets (Held at End of Year) is presented for the purpose of additional analysis and is not a required part of the basic financial statements but is supplementary information required by the Department of Labor's Rules and Regulations for Reporting and Disclosure under the Employee Retirement Income Security Act 1974. This supplemental schedule is the responsibility of the Plan's management. The supplemental schedule has been subjected to the auditing procedures applied in audits of the basic financial statements and, in our opinion, is fairly stated in all material respects in relation to the basic financial statements taken as a whole.

**KPMG LLP**

Stamford, Connecticut  
June 26, 2009

**ARCH CHEMICALS, INC. CONTRIBUTING  
EMPLOYEE OWNERSHIP PLAN**

Statements of Net Assets Available for Plan Benefits

December 31, 2008 and 2007

	<b>2008</b>	<b>2007</b>
<b>Assets:</b>		
Investments, at fair value (notes 4 and 9):		
Mutual funds	\$ 71,139,531	98,661,971
Common/collective trusts	43,469,821	53,784,142
Common stock	33,212,558	45,384,120
	147,821,910	197,830,233
Total investments, at fair value		
Participant loans	3,822,595	3,890,677
Employer contribution receivable	721,807	1,805,960
Employee contribution receivable	—	184,626
	152,366,312	203,711,496
Net assets available for plan benefits (with investments at fair value)		
Adjustment from fair value to contract value for fully benefit-responsive investment contracts (note 1)	2,411,849	285,297
Net assets available for plan benefits	\$ 154,778,161	203,996,793

See accompanying notes to financial statements.

**ARCH CHEMICALS, INC. CONTRIBUTING  
EMPLOYEE OWNERSHIP PLAN**

Statements of Changes in Net Assets Available for Plan Benefits  
Years ended December 31, 2008 and 2007

	2008	2007
(Deductions) additions to net assets attributed to:		
Investment (loss) income (note 4):		
Net (depreciation) appreciation in fair value of investments	\$ (55,836,043)	10,709,547
Dividends	4,940,706	8,021,781
Interest	956,404	888,782
Net investment (loss) income	(49,938,933)	19,620,110
Interest from participant loans	274,529	262,460
Contributions:		
Participant	7,953,466	7,837,534
Employer	3,217,431	4,009,555
Total contributions	11,170,897	11,847,089
Administrative and other expenses	(202,284)	(60,902)
Benefits paid to participants in cash	(10,305,750)	(15,653,472)
Benefits paid to participants in stock	(162,254)	(649,199)
Transfers out to other plan (note 2)	(54,837)	(304,448)
Net (decrease) increase	(49,218,632)	15,061,638
Net assets available for plan benefits at beginning of year	203,996,793	188,935,155
Net assets available for plan benefits at end of year	\$ 154,778,161	203,996,793

See accompanying notes to financial statements.

**ARCH CHEMICALS, INC. CONTRIBUTING  
EMPLOYEE OWNERSHIP PLAN**

Notes to Financial Statements

December 31, 2008 and 2007

**(1) Summary of Significant Accounting Policies**

**(a) Basis of Presentation**

The accompanying financial statements have been prepared on the accrual basis.

**(b) Use of Estimates**

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

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

Arch Chemicals, Inc. Contributing Employee Ownership Plan's (the Plan or CEOP) investments are stated at fair value. Participant loans are stated at cost plus accumulated interest, which approximates fair value given the interest rates and maturity dates of such loans. See note 1(e) and note 9 for further discussion.

Purchases and sales of securities are recorded on a trade-date basis. All income is determined on a full accrual basis. Bond interest accrues daily and dividends are recorded on the ex-dividend date.

**(d) Benefit Payments**

Benefit payments are recorded when paid.

**(e) New Accounting Pronouncements**

In June 2006, the FASB issued FASB Interpretation No. 48, *Accounting for Uncertainty in Income Taxes – An Interpretation of FASB Statement No. 109* (FIN 48). FIN 48 clarifies the accounting for uncertainty in tax positions and requires that an entity recognize in its financial statements the impact of a tax position, only if that position is more likely than not of being sustained on audit, based on the technical merits of the position. The Plan adopted the provisions of FIN 48 on January 1, 2007. As a result of the adoption, the Plan did not recognize an adjustment in the liability for unrecognized income tax benefits.

In September 2006, the Financial Accounting Standards Board (FASB) issued Statement of Financial Accounting Standards No. 157, *Fair Value Measurements* (SFAS 157), which establishes a framework for reporting fair value and expands disclosures about fair value measurements. SFAS 157 was effective for the Plan on January 1, 2008, with the exception that the applicability of SFAS 157's fair value measurement requirements to nonfinancial assets and liabilities that are not required or permitted to be recognized or disclosed at fair value on a recurring basis has been delayed by the FASB for one year. The adoption of the pronouncement did not have a material impact on the Plan's December 31, 2008 financial statements. Arch Chemicals, Inc. is currently evaluating the impact on the Plan's financial statements of the SFAS 157 requirements which will be effective for the Plan on January 1, 2009.

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See note 9 for disclosures provided for fair value measurements of the Plan's investments.

**(2) Description of the Plan**

The following description of Arch Chemicals, Inc. (Arch, the Plan Sponsor or the Employer) Contributing Employee Ownership Plan (the Plan or CEOP) provides only general information. Participants should refer to the Plan Prospectus/Summary Plan Description for a more complete description of the Plan's provisions.

**(a) General**

The Plan is a defined contribution plan sponsored by Arch and is intended to satisfy the qualification requirements under Sections 401(a) and 401(k) of the Internal Revenue Code of 1986, as amended (the Code). In addition, a portion of the Plan is intended to qualify as an employee stock ownership plan (ESOP) under Section 4975(e)(7) of the Code. The Plan is subject to the provisions of the Employee Retirement Income Security Act of 1974, as amended (ERISA). The Plan is administered by the Arch CEOP Administrative Committee.

On February 8, 1999, Olin Corporation (Olin) completed the spin-off of its specialty chemical businesses as Arch. Under the terms of the spin-off, Olin distributed to its holders of common stock as of the close of business on February 1, 1999 one Arch common share for every two shares of Olin common stock.

Effective as of the spin-off of Arch, the Olin Corporation Contributing Employee Ownership Plan (Olin CEOP) was converted into a multiple employer plan covering employees of Olin and its affiliated companies, and employees of Arch and its affiliated companies (collectively, the Employers). The Olin CEOP was administered as a single plan.

On January 22, 2001, Arch adopted the CEOP, a single employer plan, and effective March 1, 2001, was no longer a participating employer in the Olin CEOP. As of March 1, 2001, all Arch participant balances were transferred to the CEOP.

On November 30, 2004, Arch completed the sale of the Microelectronics Business to Fuji Photo Film. During 2008 and 2007, \$54,837 and \$304,448 was transferred from the Plan relating to the participants who elected to transfer their accounts to Fuji Photo Film, respectively.

On October 10, 2008 Arch completed the acquisition of the water treatment chemicals business of Advantis, a North American manufacturer and marketer of branded swimming pool, spa and surface water treatment chemicals. During the twelve months ended December 31, 2008 no former Advantis employees rolled over balances.

**(b) Participation and Contributions**

Employees of the Employer and certain subsidiaries of the Employer are eligible to participate in the Plan on the day coinciding with their date of hire.

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For 2008 and 2007, the maximum amount of tax-deferred contributions that could have been made to the CEOP was \$15,500. The amount of tax deferred contributions is based on IRS guidelines and is calculated based on eligible pay and the percentage of pay elected to contribute to the Plan. Additionally, participants can make after-tax contributions. Combined contributions may not exceed 75% of participants' eligible compensation, up to statutory limits. However, through December 31, 2008, contributions for highly compensated employees, as defined, were limited to a maximum of 8% of eligible compensation. See note 10 for changes effective January 1, 2009.

Participants who are age 50 and older at any time during a Plan year may make "catch-up contributions" in that year. These contributions are additional tax-deferred contributions that eligible participants are permitted to make in excess of the annual IRS tax-deferred contribution limit. For 2008 and 2007, the maximum amount of "catch-up contributions" was \$5,000.

The Employer provides a matching contribution, which through December 31, 2008 was 50% of participants' contributions excluding "catch-up contributions" (if any), up to 6% of eligible pay. See note 10 for changes effective January 1, 2009. Arch also provides an annual performance match, which is based on Arch's actual earnings per share (EPS) as a percent of the target EPS as established by the Compensation Committee each year. The performance matching contribution totaled \$721,807 and \$1,744,740 for the Plan years ended December 31, 2008 and 2007, respectively. All Employer matching contributions are invested in the Arch Common Stock Fund. Participants who are at least 50 years old but have not been credited with three years of service may elect to transfer balances attributable to Employer contributions out of the Arch Common Stock Fund once every 12 months. Participants who have been credited with at least three years of service may elect to transfer anytime, (subject to applicable US securities laws) the value of their Employer matching contributions out of the Arch Common Stock Fund to any other fund(s) available in the Plan.

**(c) Investment Elections**

During 2008 and 2007, the amounts contributed to the Plan were invested in one or more of the following investment options at the direction of the participants, except for employer matching contributions as discussed above. Below is a description of each investment option offered by the Plan:

*JPMorgan Stable Asset Income Fund* – This fund seeks to preserve the value of money invested, perform better than the average money market fund, and earn consistent reliable returns. The fund invests in a variety of interest-paying securities offered with a companion investment contract called a "benefit responsive wrap." See footnote 2(f).

*PIMCO Total Return Fund* – This fund seeks total return consistent with preservation of capital. The fund invests at least 65% of assets in debt securities, including U.S. government securities, corporate bonds, and mortgage-related securities. It may invest up to 20% of assets in securities denominated in foreign currencies. The portfolio duration generally ranges from three to six years.





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*PIMCO Real Return Fund* – The fund seeks maximum real return, consistent with preservation of real capital and prudent investment management. The fund seeks its investment objective by investing under normal circumstances at least 80% of its net assets in inflation-indexed bonds of varying maturities issued by the U.S. and non-U.S. governments, their agencies or instrumentalities, and corporations.

*Barclays Global Investors S&P 500 Equity Index Fund* – The fund seeks to capture earnings and growth through investing in the same stocks held in the S&P 500 Index. These stocks represent 500 of the largest and most established public companies in the U.S. (based on the market value of their shares), and account for more than 75% of the market capitalization of all publicly traded stocks in the U.S.

*T. Rowe Price Equity Income Fund* – This fund's objective is to provide substantial dividend income as well as long-term capital appreciation through investments in common stocks of established companies. The fund pursues this objective by investing at least 80% of the funds net assets in common stocks, with 65% in the common stocks of well-established companies paying above-average dividends, with favorable prospects for both increasing dividends and capital appreciation.

*American Funds Growth Fund of America* – This fund seeks to invest in companies that appear to offer superior opportunities for long-term growth, such as cyclical companies, those in depressed industries, and turnaround or value situations. Common stocks, convertibles, preferred stocks, U.S. government securities, bonds and cash are held by the fund. Up to 15% of the assets may be invested in securities of issuers located outside the United States and not included in the S&P 500. Up to 10% may be invested in debt securities rated below investment grade.

*Perkins Mid Cap Value Fund* – This fund seeks capital appreciation. In pursuing that goal the fund invests at least 80% of its assets in equity securities of companies whose market capitalization falls at the time of purchase, within the 12-months average of the capitalization range of the Russell Midcap Value Index. The fund focuses on companies that have fallen out of favor with the market or are temporarily misunderstood by the investment community. These companies generally have a low price relative to their assets, earnings, cash flow or business franchise; have products and services that give them a competitive advantage; quality balance sheets and strong management.

*Turner Midcap Growth Fund* – The fund seeks capital appreciation. The fund invests primarily (at least 80% of its net assets) in common stocks of equity securities of U.S. companies with medium market capitalizations that the fund believes has strong earnings growth potential.

*Managers Special Equity Fund* – This fund seeks long-term capital appreciation by investing primarily in common stocks of U.S. companies. These companies have small to medium-market capitalizations and are in the early stages of their corporate life cycle or are not yet well recognized, or they may be more established firms experiencing accelerated earnings growth.

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*Target Small Capitalization Value Fund* – The fund seeks above-average capital appreciation. To achieve the objective, the fund invests in stocks of small companies that are believed to be undervalued and have an above-average potential to increase in price, given the company's sales, earnings, book value, cash flow and recent performance. The fund normally invests at least 80% of its assets in common stocks of companies with a total market capitalization of less than \$2.5 billion (measured at the time of purchase).

*Harbor International Fund* – This fund seeks long-term total return, principally from growth of capital. The fund invests primarily in equity securities, principally common and preferred stocks of foreign companies, including those located in emerging market countries. Companies in the fund's portfolio generally have market capitalizations in excess of \$1 billion. In selecting stocks for the fund's portfolio, the subadviser looks for companies with the following characteristics: businesses that the subadviser believes offer value, low price/earnings multiples relative to other stocks in each country/industry and above average, long-term earnings expectation not reflected in the price.

*American Funds EuroPacific Growth Fund* – This fund seeks long-term growth of capital by investing in growing companies based in Europe and the Pacific Basin. Generally, the fund will invest at least 80% of assets in equity securities of issuers located in these areas. The fund may hold cash money market instruments and other fixed income securities.

*Arch Common Stock Fund* – This fund invests in the publicly traded common stock of Arch Chemicals, Inc. (the Plan Sponsor). See footnote 2(e) for further description of the provisions and restrictions of the fund.

*Arch Pre mixed Portfolio (Conservative)* – This investment option is a pre mixed portfolio created specifically for the CEOP, using the Plan's other available investment options. It is designed to seek a balance of modest returns and low volatility by investing in a diversified mix of funds emphasizing income related investments. The Plan's fixed income options make up the largest portion of the portfolio (60%) but it also is invested in stock funds (40%) to provide the potential for growth as well as increased diversification. As this investment option is a pre-mixed portfolio using the Plan's other available investment options, amounts invested through this investment option are included in the balances of the other options in these financial statements and footnotes and in Schedule H, Line 4i.

*Arch Pre mixed Portfolio (Moderate)* – This investment option is a pre mixed portfolio created specifically for the CEOP, using the Plan's other available investment options. It is designed to seek moderate returns by investing in a diversified mix of funds emphasizing both growth and income related investments. Stock funds make up 65% of the portfolio, emphasizing growth related investments. The stock holdings are broadly diversified across large U.S. companies, international companies and small U.S. companies. The portfolio also invests in fixed income options (35%) to provide diversification and reduce volatility while adding stability of principal and income. As this investment option is a pre-mixed portfolio using the Plan's other available investment options, amounts invested through this investment option are included in

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the balances of the other options in these financial statements and footnotes and in Schedule H, Line 4i.

*Arch Pre mixed Portfolio (Aggressive)* – This investment option is a pre mixed portfolio created specifically for the CEOP, using the Plan's other available investment options. It is designed to seek higher potential returns by investing in a diversified mix of funds emphasizing growth related investments. Stock funds make up 100% of the portfolio, and are broadly diversified across large U.S. companies, international companies and small U.S. companies. As this investment option is a pre-mixed portfolio using the Plan's other available investment options, amounts invested through this investment option are included in the balances of the other options in these financial statements and footnotes and in Schedule H, Line 4i.

**(d) Olin Common Stock Fund**

Only Participants who were Participants in the Olin CEOP at the time of the spin-off of Arch from Olin may have account balances that are invested in the Olin Common Stock Fund. Such Participants may retain existing investments in the Olin Common Stock Fund, but no new contributions or transfers may be made in or to this fund. Participants may transfer any portion of their Olin Common Stock Fund balances to any of the other funds offered by the Plan. Any dividends issued on the stock held in the Olin Common Stock Fund are automatically reinvested into the Arch Common Stock Fund.

**(e) Arch Common Stock Fund**

As of February 8, 1999, the specialty chemical businesses of Olin were spun off into a new publicly traded company, Arch Chemicals, Inc. In order to effect the spin-off, a stock dividend was issued to Olin shareholders, including participants in the Olin CEOP, of one share of Arch common stock for each two shares of Olin common stock then outstanding. These shares were deposited in the unitized Arch Common Stock Fund in the Olin CEOP.

As of the spin-off, each Plan participant having an account balance containing Olin common stock was credited with an opening account balance in the Arch Common Stock Fund. The amount credited to each participant's initial Arch Common Stock Fund account balance was calculated by (i) dividing the value of such participant's Olin Common Stock Fund account by the total value of all participants' accounts in the Olin Common Stock Fund, and then (ii) multiplying the percentage determined under (i) above by the value of the Arch common stock the Plan trustee received as a stock dividend. The balances in all Arch employees' accounts of the Arch Common Stock Fund were transferred to the Plan on March 1, 2001.

Dividends paid to participants are re-invested in the Arch Common Stock Fund. Each participant is entitled to exercise voting rights attributable to the shares of his or her account and is notified by the Trustee prior to the time such rights are to be exercised.

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The number of units in the Arch Common Stock Fund to be credited to a participant's account is determined by dividing the participant's contribution plus the amount of Employer matching contributions attributable to such contribution for the preceding pay cycle by the unit value of a unit as of the close of business on the date on which the contributions were credited. Additional units are credited to a participant's account to reflect payment of dividends on the common shares credited to that account based on the value of a unit as of the day the dividend is credited.

**(f) JPMorgan Stable Asset Income Fund**

The JPMorgan Stable Asset Income Fund is a stable value fund that is a common collective trust fund. The fund may invest in guaranteed investment contracts (GICs and synthetic GICs), money market funds, corporate and government bonds, mortgage-backed securities, bond funds, and other fixed income securities. The contracts held by the fund are considered to be fully benefit-responsive investment contracts as defined in FSP AAG INV-1 and SOP 94-4-1, *Reporting of Fully Benefit-Responsive Investment Contracts Held by Certain Investment Companies Subject to the AICPA Investment Company Guide and Defined-Contribution Health and Welfare and Pension Plans*. Participants may ordinarily direct the withdrawal or transfer of all or a portion of their investment at contract value. Contract value represents contributions made to the fund, plus accrued interest, less participant withdrawals.

A synthetic GIC consists of two components: 1) a portfolio of bonds and other assets that are owned by the fund, and 2) contracts, also known as wrap contracts, that provide market and cash flow protection. The wrap contracts are obligated to provide an interest rate not less than zero. These contracts provide that realized and unrealized gains and losses on the underlying assets are not reflected in the net assets of the fund as part of the fair value, but rather amortized, over the duration of the underlying assets, through adjustments to the future interest crediting rate. The counterparties to the wrapper contracts held by the JPMorgan Stable Asset Income Fund are major financial institutions with credit ratings ranging from A- to AA at December 31, 2008.

At December 31, 2008 and December 31, 2007 there were three investment contracts held by the JPMorgan Stable Asset Income fund. Each of the plan's proportionate interest in the contracts had fair values of \$6,135,000 and \$6,352,000 at December 31, 2008 and December 31, 2007, respectively. These fair values represented the fair values of the plan's proportionate interest in the underlying investments as none of the wrapper contracts had any value.

**Factors that Impact Future Crediting Rates**

The following factors impact the future crediting rates of wrap contracts:

- Duration of the underlying assets
- Difference between the market value and contract value of the underlying assets
- Current yield of the underlying assets

**Basis and Frequency of Determining Interest Crediting Rates**

The wrap contract crediting rates are reset on a calendar quarterly basis.

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**Terminations at Other than Contract Value**

GICs generally do not permit issuers to terminate the agreement prior to the scheduled maturity date. Wrap contracts are evergreen contracts that contain termination provisions. Wrap agreements permit the fund's investment manager to terminate upon notice at any time at market value and provide for automatic termination of the wrap contract if the contract value or the market value of the contract equals zero. The issuer is not excused from paying the excess contract value when the market value equals zero. Wrap contracts permit the issuer to terminate at market value and provide that the fund may elect to convert such termination to an Amortization Election as described below. In addition, if the fund defaults in its obligation under the agreement (including the issuer's determination that the agreement constitutes a nonexempt prohibited transaction as defined under ERISA) and such default is not cured within the time permitted by any cure period, then the wrap contract may be terminated by the issuer and the fund will receive the market value as of the date of termination. The wrap contracts permit the issuer or the investment manager to elect at any time to convert the underlying assets to a declining duration strategy whereby the contract would terminate at a date which corresponds to the duration of the underlying assets on the date of the amortization election (Amortization Election). After the effective date of an Amortization Election, the underlying assets must conform to the guidelines agreed upon by the wrap issuer and the investment manager for the Amortization Election period. Such guidelines are intended to result in contract value equaling market value of the underlying assets by such termination date.

**Limitations on the Ability of the Fund to Transact at Contract Value**

The fully benefit-responsive investment contracts provide that Plan participant initiated withdrawals permitted under the Plan will be paid at contract value. Wrap contracts provide for withdrawals associated with 1) certain events that are not in the ordinary course of Plan operations and 2) events that the issuer determines will have a material adverse effect on the issuer's financial interest. These withdrawals will be paid with a market value adjustment to the contract value amount of such withdrawal as defined in such contracts.

**Average Yield Calculation**

	2008	2007
Average yield for JP Morgan Stable Asset Income Fund:		
Based on actual earnings*	6.22%	6.61%
Based on interest rate credited to participants**	2.51	5.59

\* Computed by dividing the annualized earnings of the Fund by the fair value of the investments of the fund.

\*\* Computed by dividing the annualized earnings credited to participants in the Fund by the fair value of the investments of the fund.

**(g) Vesting and Benefit Provision**

Participants are fully vested in their contributions to the Plan.

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Participants become 100% vested in the Employer contributions upon the completion of two years of service or as a result of death, total disability or attainment of age 65. Nonbargaining and certain bargaining participants can become partially vested in accordance with the schedule set forth below:

Years of service	Percentage vested
Less than one year	—%
One year but fewer than two	50
Two or more years	100

Upon termination of service for any reason, a participant may elect to receive his or her entire vested balance in either a lump-sum amount or in annual installments up to 15 years, or for his or her life expectancy, if greater.

Distributions from the Plan are generally paid in cash. Distributions from the Olin Common Stock Fund or Arch Common Stock Fund, at the election of the distributee, can be paid in shares of common stock with any fractional interest in a share of common stock paid in cash.

**(h) *Transfers between Funds***

Participants may elect to transfer balances attributable to employee contributions from any fund to any other fund, except such participants may not transfer balances to the Olin Common Stock Fund. Participants may transfer balances daily, with no limitation on the frequency. A participant may elect to transfer any percentage of the balance in the fund from which the transfer is made.

Participants who are at least 50 years old but have not been credited with three years of service may elect to transfer balances attributable to Employer contributions out of the Arch Common Stock Fund once every 12 months. Participants who have been credited with at least three years of service may elect to transfer at anytime, (subject to applicable US securities laws) the value of their Employer matching contributions out of the Arch Common Stock Fund to any other fund(s) available in the Plan.

**(i) *Participant Accounts***

The Plan is a defined contribution plan under which a separate individual account is established for each participant. Each participant's account is credited with the participant's contribution and allocations of (a) the Employer's contribution and (b) Plan investment fund(s) earnings (losses). Allocations are based on participant accounts balances, as defined. The benefit to which a participant is entitled is the benefit that can be provided from the participant's vested balance.

**(j) *Loan Provision***

All eligible participants may participate in the loan program under the Plan. The maximum loan amount is generally the lesser of \$50,000 or 50% of the value of the participant's vested account balance. Under the Plan, employees may have a maximum of three outstanding loans at any time. The loans are funded from the participants' accounts, reducing the account balance by the loan

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amount, and are reflected as participant loans in the accompanying financial statements. The term of the loans may be up to five years, or up to 15 years if the purpose of the loan is the purchase of a primary residence. The interest rate on these loans is fixed at the current prime rate at the time the loan is originated. The interest rates on outstanding loans ranged from 4.0% to 9.50% in 2008 and from 4.0% to 9.75% in 2007.

**(k) *Payment of Benefits***

Upon termination of employment, death, attainment of age 59½, and certain hardships, as defined by the Plan, participants may elect to withdraw amounts from the Plan. In addition to attainment of age 59½ and hardship withdrawals, participants may also elect to withdraw their tax-deferred contributions and vested contributions as an "in-service" withdrawal, as defined in the Plan document.

**(l) *Administrative and Other Expenses***

Costs and expenses of administering the Plan are generally paid by the Plan. Certain administrative expenses are paid by the general assets of the Employer or by participants as applicable.

**(m) *Trust Fund Management***

JPMorgan Chase Bank, N.A. is the Trustee of the Plan. Under the terms of the Trust Agreement between the Trustee and Arch, the Trustee is responsible for the safekeeping of Plan assets in the trust funds and the maintenance of records relating to receipts and disbursements from the trust funds. The Trustee invests funds in compliance with the terms of the Plan and makes payments from the trust funds as directed by participants and Arch.

**(n) *Recordkeeper***

JPMorgan Retirement Plan Services, LLC is the Recordkeeper for the Plan. There are revenue sharing agreements between certain funds and JPMorgan Chase Bank, N.A.

**(o) *Plan Termination***

Although it has not expressed any intent to do so, the Employer has the right under the Plan to discontinue its contributions at any time and to terminate the Plan subject to the provisions of ERISA. In the event of Plan termination, participants will become 100% vested in their Employer contributions.

**(3) *Forfeitures of Employer Contributions***

Any forfeitures of nonvested Employer contributions, equivalent to the market value of forfeited shares plus dividends not reinvested, will be applied to reduce subsequent Employer contributions. Forfeitures used to reduce employer contributions were \$0 and \$89,360 for the Plan years ended December 31, 2008 and 2007, respectively. The unallocated balance of forfeitures was \$74,821 and \$76,597 at December 31, 2008 and 2007, respectively.

**ARCH CHEMICALS, INC. CONTRIBUTING  
EMPLOYEE OWNERSHIP PLAN**

Notes to Financial Statements

December 31, 2008 and 2007

**(4) Investments**

The Plan's investments that exceeded 5% of net assets available for plan benefits as of December 31, 2008 and 2007 are as follows:

Description of investment	2008	2007
Arch Chemicals Common Stock Fund*	\$ 27,681,006	38,160,499
Barclays Global Investors S&P 500 Equity Index Fund	22,352,498	33,821,427
PIMCO Total Return Fund	21,956,075	20,447,124
American Funds Growth Fund of America	**	12,916,589
American Funds EuroPacific Growth Fund	8,321,523	14,509,499
JP Morgan Stable Asset Income Fund	21,117,323	19,962,715
Perkins Mid Cap Value Fund	**	10,734,670
Harbor International Retirement	**	10,288,603

\* Includes nonparticipant-directed holdings

\*\* Investment did not exceed 5% of net assets at year end

The following table presents the net (depreciation) appreciation in fair value of investments (including investments bought, sold and held during the year) for the plan years ended December 31, 2008 and 2007, respectively:

	Total	
	2008	2007
Mutual funds	\$ (31,242,041)	1,260,356
Common/collective trusts	(12,561,339)	1,428,259
Common stock	(12,032,663)	8,020,932
Total net (depreciation) appreciation	\$ (55,836,043)	10,709,547



**ARCH CHEMICALS, INC. CONTRIBUTING  
EMPLOYEE OWNERSHIP PLAN**

Notes to Financial Statements

December 31, 2008 and 2007

**(5) Nonparticipant-Directed Investments**

Information about the net assets and the significant components of the changes in net assets for nonparticipant-directed investments, are as follows:

	<u>2008</u>	<u>2007</u>
Arch Common Stock Fund net assets at beginning of year	\$ 38,160,499	48,310,042
Changes in net assets to the Arch Common Stock Fund:		
Employer contributions	4,301,584	3,277,000
Employee contributions-directed investments and net transfers in from other plans	471,148	474,142
Dividends	1,000,974	1,276,149
Net (depreciation) appreciation	(11,177,783)	6,560,217
Loan repayments (principal and interest)	266,729	300,158
Benefits paid to participants and net transfers out	(1,846,945)	(3,648,832)
Administrative expenses	(1,600)	(1,548)
Loans issued	(133,701)	(165,370)
Other receipts (disbursements)	1,902	(60,000)
Transfers to participant-directed investments	(3,361,801)	(18,161,459)
Net decrease	<u>(10,479,493)</u>	<u>(10,149,543)</u>
Arch Common Stock Fund net assets at end of year	\$ <u>27,681,006</u>	<u>38,160,499</u>

**(6) Federal Income Taxes**

The Internal Revenue Service has determined and informed the Plan Sponsor by a letter dated September 5, 2003, that the Plan is qualified under Section 401(a) of the Code, as amended, and the related trust is exempt from Federal income taxes under Section 501(a) of the Code. Although the Plan has been amended since receiving the determination letter, the Plan administrator and the Plan's tax counsel believe that the Plan is designed and is currently being operated in compliance with the applicable requirements of the IRC.

**(7) Related-Party Transactions**

Certain Plan investments are shares of mutual funds and common/collective trusts managed by JPMorgan Chase Bank, N.A., the Plan trustee. In addition, the Plan invests in common stock of Arch. These transactions qualify as party-in-interest transactions that are exempt from the prohibited transaction rules.

**ARCH CHEMICALS, INC. CONTRIBUTING  
EMPLOYEE OWNERSHIP PLAN**

Notes to Financial Statements

December 31, 2008 and 2007

**(8) Reconciliation to Form 5500**

	<b>2008</b>	<b>2007</b>
Net assets available for plan benefits per the financial statements	\$ 154,778,161	203,996,793
Less adjustment from fair value to contract value for fully benefit-responsive investment contracts	(2,411,849)	(285,297)
Net assets available for plan benefits per the Form 5500	\$ 152,366,312	203,711,496
	<b>2008</b>	<b>2007</b>
Change in net assets available for plan benefits per the financial statements	\$ (49,218,632)	15,061,638
Less adjustment from contract value to fair value for fully benefit-responsive investment contracts – current year	(2,411,849)	(285,297)
Add adjustment from contract value to fair value for fully benefit-responsive investment contracts – prior year	285,297	218,663
Net income per the Form 5500	\$ (51,345,184)	14,995,004

**(9) Fair Value Measurements**

Effective January 1, 2008, the Plan adopted SFAS 157 for all financial instruments and for nonfinancial instruments that are recognized or disclosed in the financial statements at fair value on a recurring basis. SFAS 157 establishes a new framework for measuring fair value and expands related disclosures. The SFAS 157 framework requires fair value to be determined based on the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants.

The valuation techniques required by SFAS 157 are based upon observable and unobservable inputs. Observable inputs reflect market data obtained from independent sources, while unobservable inputs reflect the Plan's market assumptions. These two types of inputs create the following fair value hierarchy:

- Level 1 – Quoted prices (unadjusted) for identical assets and liabilities in active markets that the Plan has the ability to access at the measurement date.
- Level 2 – Quoted prices for similar assets and liabilities in active markets; quoted prices for identical or similar assets and liabilities in markets that are not active; and inputs other than quoted prices that are observable for the asset or liability, including interest rates, yield curves and credit risks, or inputs that are derived principally from or corroborated by observable market data through correlation.
- Level 3 – Significant inputs to the valuation model are unobservable and are primarily based on internally derived assumptions surrounding the timing and amount of expected cash flows.

**ARCH CHEMICALS, INC. CONTRIBUTING  
EMPLOYEE OWNERSHIP PLAN**

Notes to Financial Statements

December 31, 2008 and 2007

The following section describes the valuation methodologies the Plan uses to measure different investments at fair value.

**Investments**

The Plan's investments are stated at fair value. Quoted prices in active markets are used to determine the fair values of investments, with the exception of the Barclays Global Investors S&P 500 Equity Index Fund and the JP Morgan Stable Asset Income Fund. The investments which are valued using quoted prices in active markets are included in Level 1.

The investment contracts held by the JP Morgan Stable Asset Income Fund are presented at fair value on the statements of net assets available for plan benefits. The investments in these fully benefit-responsive investment contracts are then adjusted to contract value, which is equal to the principal balance plus accrued interest, less participant withdrawals. An investment contract is generally valued at contract value, rather than fair value, to the extent it is fully benefit-responsive. Fair value of fully benefit-responsive investment contracts is calculated using a discounted cash flow model which considers recent fee bids as determined by recognized dealers, discount rate, duration of the underlying portfolio securities and the credit-worthiness of the issuer. The JP Morgan Stable Asset Income Fund is included in Level 2.

The Barclays Global Investors Equity Index Fund is valued using a combination of quoted prices from active markets and prices from inactive markets. The Barclays Global Investors Equity Index Fund is included in Level 2.

The following table displays, by level, the fair values of each of the Plan's investments that are measured at fair value and that are subject to the disclosure requirements of SFAS 157 at December 31, 2008:

	<u>Level 1</u>	<u>Level 2</u>	<u>Level 3</u>	<u>Total</u>
Mutual funds	\$ 71,139,531	—	—	71,139,531
Common/collective trusts	—	43,469,821	—	43,469,821
Common stock	33,212,558	—	—	33,212,558
Total investments, at fair value	<u>\$ 104,352,089</u>	<u>43,469,821</u>	<u>—</u>	<u>147,821,910</u>

**(10) Subsequent Events**

Effective January 1, 2009, the Employer's matching contribution was increased to 100% of a participant's first 1% of eligible pay and 50% of a participant's next 5% of eligible pay contributed to the Plan. Additionally, effective January 1, 2009, "catch-up contributions" are eligible for Employer matching contributions.

Effective January 1, 2009, restrictions on contributions by highly compensated employees, as defined, were eliminated subject to Internal Revenue Code limitations.

**ARCH CHEMICALS, INC. CONTRIBUTING  
EMPLOYEE OWNERSHIP PLAN**

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

December 31, 2008

Identity of issuer, borrower, lessor, or similar party	Description of investment including maturity date, number of shares or units, rate of interest, collateral, par, or maturity value	Historical cost	Current value
PIMCO	Total Return Fund	**	\$ 21,956,075
PIMCO	Real Return Fund	**	3,289,092
Managers Funds	Special Equity Fund	**	4,218,152
T. Rowe Price	Equity Income Fund	**	5,828,160
Perkins	Mid Cap Value Fund	**	1,836,480
Turner	Mid Cap Growth Fund	**	2,326,655
Target	Small Capitalization Value Fund	**	7,241,555
Harbor	International Fund	**	7,283,670
American Funds	Growth Fund of America	**	7,400,482
American Funds	EuroPacific Growth Fund	**	8,321,523
Barclays	Global Investors S&P 500 Equity Index Fund	**	22,352,498
* JPMorgan	Stable Asset Income Fund	**	21,117,323
* Arch Chemicals, Inc.	Arch Chemicals, Inc. Common Stock, Par value \$1.00	25,850,293	27,681,006
Olin Corporation	Olin Corporation Common Stock, Par value \$1.00	**	4,383,124
Participant-directed brokerage account	Various mutual funds/common stock investments	**	2,586,115
* Participant loans	Participant Loan Fund (754 outstanding loans with interest rates ranging from 4% – 9.50%, and maturity dates ranging from 2009 to 2022)	**	3,822,595
	Total investments		<u>\$ 151,644,505</u>

\* Party-in-interest to the Plan.

\*\* Historical cost omitted as these investments are participant-directed

See accompanying Report of Independent Registered Public Accounting Firm.

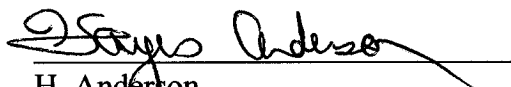
SIGNATURES


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

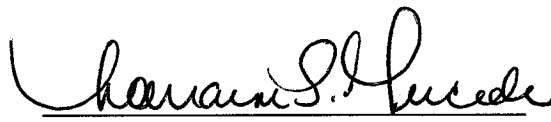
Date: June 26, 2009

ARCH CHEMICALS, INC. CONTRIBUTING  
EMPLOYEE OWNERSHIP PLAN

By: Members of the Arch CEOP  
Administrative Committee

  
H. Anderson  
Vice President, Human Resources

  
W.P. Bush  
Treasurer

  
L.S. Mercede  
Director of Compensation and Benefits

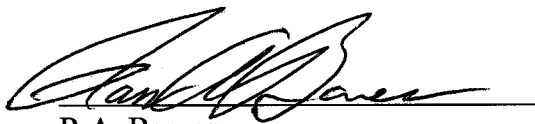
  
R.A. Barnes  
Director, Human Resources and  
Corporate Security Officer

EXHIBIT INDEX

<u>Exhibit No.</u>	<u>Description</u>	
23	Consent of Independent Registered Public Accounting Firm	23

**Consent of Independent Registered Public Accounting Firm**

The Board of Directors  
Arch Chemicals, Inc.:

We consent to the incorporation by reference in the Registration Statements (333-133815 and 333-54098) on Form S-8 of the Arch Chemicals, Inc. Contributing Employee Ownership Plan of our report dated June 26, 2009, relating to the statements of net assets available for plan benefits as of December 31, 2008 and 2007, and the related statements of changes in net assets available for plan benefits for the years then ended and related schedule, which report appears in the December 31, 2008 annual report on Form 11-K relating to the Arch Chemicals, Inc. Contributing Employee Ownership Plan.

**KPMG LLP**

Stamford, Connecticut  
June 26, 2009