



UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549-7010

May 14, 2009

By U.S. mail and facsimile to (203) 229-3507

Mr. Steven C. Giuliano, Chief Financial Officer
Arch Chemicals, Inc.
501 Merritt 7
Norwalk, CT 06851

RE: Arch Chemicals, Inc. File No. 1-14601
Form 10-K for the fiscal year ended December 31, 2008
Form 10-Q for the quarter ended March 31, 2009
Schedule 14A Definite Proxy Statement Filed March 13, 2009

Dear Mr. Giuliano:

We have reviewed your filings and have the following comments. Where indicated, we think you should revise your disclosures in future filings, including applicable interim filings, in response to these comments. If you disagree, we will consider your explanation as to why our comment is inapplicable or a revision is unnecessary. Please be as detailed as necessary in your explanation. In some of our comments, we may ask you to provide us with supplemental information so we may better understand your disclosure. After reviewing this information, we may raise additional comments. Please understand that the purpose of our review process is to assist you in your compliance with the applicable disclosure requirements and to enhance the overall disclosure in your filings. We look forward to working with you in these respects. We welcome any questions you may have about our comments or on any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

Form 10-K for the year ended December 31, 2008
Business, page 1

1. Because of the nature of your business, the discussion about your working capital practices appears limited. Please expand your disclosure related to information contained in subparagraph (c)(1)(vi) of Item 101 of Regulation S-K, to the extent that such information is material.

Wood Protection and Industrial Coatings, page 3

2. We note the disclosure in the second paragraph regarding the two products that have received a Good Housekeeping seal of approval. We also note that your company has transitioned away from CCA to alternate preservatives and now offers two alternative products. Please clarify the impact of this transition on the

two products that received the seal of approval and whether the new alternative products have received this seal. In addition, please describe in greater detail why your industry has moved away from CCA and the “voluntary regulatory changes”.

Competition, page 7

3. Given the consolidation trends in your industry (we note “The industry segments in which we operate are highly competitive...” risk factor disclosure on page 12), to the extent applicable, please expand your disclosure to identify the competitors who have a dominant position in the industry, and if known, provide an estimate of the number of your competitors. See Item 101(c)(1)(x) of Regulation S-K.

Management’s Discussion and Analysis, page 28

4. We assume that the quarterly leverage, interest coverage, fixed charge coverage and debt to total capitalization ratio covenants referenced on page 46 are the critical covenants associated with your debt agreements. Given that your debt has increased 60% during 2008, please revise the Liquidity section to quantify the corresponding actual measures calculated as of the current financial statement date. This information is necessary for readers to assess the prospect of continued compliance with these material debt covenants. See also the guidance in Section 501.12.b.1 of the Financial Reporting Codification regarding key indicators of financial condition.
5. The \$24.6 million goodwill impairment charge had 430% and 40% impacts on fourth quarter and annual 2008 net income, respectively. The disclosure on page 48 attributes the impairment to the economic slowdown. However, given the materiality of the charge, this disclosure should be revised to fully explain the circumstances that precipitated the impairment. Pursuant to Section 501.14 of the Financial Reporting Codification, please identify the material assumptions and estimates that changed between the January 2008 test and the interim December 2008 test and quantify the impact of these changes on the impairment calculation. For example, it is unclear whether the January 2008 recoverability assessment was based on an assumed growth rate or level of annual cash flows that was subsequently deemed improbable. Quantify the extent to which 2008 results differed from the January 2008 cash flow forecast. Disclose whether the December 2008 cash flow projections assume any negative future cash flows, and if so, for how long. Note also the requirement to specifically discuss the accuracy of management’s past estimates. Please also provide this disclosure in your letter.
6. Pursuant to Section 501.12.b.4 of the Financial Reporting Codification, please disclose the specific business, competitive and economic factors that caused the adverse operating results that precipitated the impairment. Clarify why the economic slowdown apparently had a disproportionately adverse impact on the industrial coatings business. Quantify the duration and the extent to which the

sales, income and cash flows of this business had been performing below expectations. State whether the business was generating negative cash flows prior to the impairment charge. Disclose whether management has any specific plans to either improve operating results or dispose of the business. If the impaired goodwill is largely from a specific business acquisition then that acquisition should be identified. In order for readers to fully understand the operating results of the impaired business, please disclose whether there was a loss of major customers (page 4), whether there was a decline in market share, and which of the specific risks and critical success factors (pages 11-17 and 29) materially impacted the impaired business. Please also provide this disclosure in your letter.

7. Known events, trends, or uncertainties surrounding the recoverability of assets must be disclosed pursuant to Section 501.02 of the Financial Reporting Codification and Item 303(a)(3)(ii) of Regulation S-K. For example, if a business experiences negative financial trends, then please disclose the carrying value of the assets at risk of impairment, if material, so readers can understand the potential financial statement impact. Further, if the estimated fair value of a reporting unit has declined, or is materially equivalent to carrying value, then the attendant impairment risk should be discussed given the inherent variability of these fair value estimates.
8. The \$24.6 million impairment does not appear to correlate with the September 30, 2008 SFAS 131 data and related disclosures. Please clarify for us why there was no specific, prior disclosure informing readers about the potential impact of known events, trends or uncertainties on the recoverability of the industrial coatings goodwill. Your level of compliance should be clearly evident regarding Item 303 of Regulation S-K, Sections 216, 501.02 and 501.12.b of the Financial Reporting Codification, and SAB Topic 5:P.4. To help us further understand this issue, please also tell us the September 30, 2008, and December 31, 2007, sales and operating income amounts for the industrial coatings business. Please address SFAS 131 compliance if these results are materially different from the wood protection business with which they are aggregated.

Description of Business and Summary of Significant Accounting Policies, page 62

9. Please disclose whether the amount of returns, discounts and retail promotions/incentives as a percentage of sales has materially changed in any period presented.

Controls and Procedures, page 104

10. Pursuant to Rules 13a-15(b) and 15d-15(b) of the Exchange Act, management must carry out an evaluation of “the effectiveness of the issuer’s controls and procedures” without qualification to the “design and operation” of these controls

and procedures as noted in your disclosure. Please revise to fully conform to Rules 13a-15(b) and 15d-15(b) of the Exchange Act.

11. We note the description of the disclosure controls and procedures in the second sentence of this section. This description appears to be based on the definition of disclosure controls and procedures set forth in Rules 13a-15(e) and 15d-15(e) under the Exchange Act. As described, however, this description does not fully conform to the definition set forth in those rules. Specifically, this description modifies the definition provided in the rules by adding the word “reasonably” before “designed to ensure that information required to be disclosed...” language. Please revise this disclosure or, alternatively, state in future filings that your certifying officers concluded on the applicable dates that your disclosure controls and procedures were effective.

Exhibits, page 108

12. We note that you have not filed Exhibit B to the Revolving Credit Agreement (Exhibit 4.4), and all of the exhibits and schedules to the February 13, 2009 Credit Agreement (Exhibit 4.6). Please advise. Refer to Item 601(b)(10) of Regulation S-K.

Form 10-Q for the period ended March 31, 2009
Commitments and Contingencies, page 15

13. Regarding the ACF matter, please clarify for us how you have complied with SFAS 5 since your accrual is \$1.0 million whereas 5,200 boats are impacted and \$5.1 million was the cost to repair 425 boats. Further, tell us the current status of the suit.

Liquidity, Investment Activity, Capital Resources and Other Financial Data, page 23

14. Please disclose whether the \$30.9 million of outstanding letters of credit and \$1.8 million of outstanding letters of guarantee reduce the available borrowings under the \$350.0 million senior revolving credit facility.
15. Given the material impact of inventory and receivables variances on operating cash flow, please expand the liquidity section in future filings to quantify and explain changes in the corresponding turnover ratios. For example, absent disclosure to the contrary, it is unclear whether the March 31, 2009, increase in receivables as a percentage of sales is due to deterioration in credit quality or to a change in collection terms. Further, it is unclear whether the March 31, 2009, increase in inventory as a percentage of quarterly cost of goods sold is due to a build-up of customer inventories which could then adversely impact near-term sales. The disclosure should also inform readers about the impact of such changes on the corresponding reserves for bad debts and inventory obsolescence. See

Section 501.05 of the FRC. Also, activity in the allowance for inventory obsolescence should be disclosed pursuant to Article 12-09 of Regulation S-X.

Schedule 14A Definite Proxy Statement Filed on March 13, 2009
Election of Directors, page 7

16. Please provide the biographical information for Mr. Wetmore after his role as Senior Vice President and Chief Financial Officer and Treasurer of International Flavors and Fragrances Inc.

Elements of Named Officer Compensation, page 24

17. We note the disclosure in this section that the outside compensation consultant annually determines a “competitive range” for each element of compensation. Please expand the disclosure to explain how it determined this range and how it measures against the peer companies’ compensation. Please also disclose how the actual compensation awarded to the named officers measured against the range for each element of compensation.

Annual Incentive, page 26

18. While you disclose that the compensation committee determines the target value of the annual award for each named officer, we are unable to locate disclosure explaining how the compensation committee made the determination for each named officer. Please explain the compensation committee’s decision-making process.
19. Part of the information which is material to understanding the annual incentive disclosure is found in footnote (1) to the Grant of Plan-Based Awards table on page 36. Please ensure that this section of the CD&A provides a complete and comprehensive discussion on annual incentive awards and the applicable targets.
20. We note your disclosure of financial targets, how they are calculated and how they may be adjusted. Please disclose whether these measures were adjusted and, if so, explain how these adjustments were calculated. See Item 402(b)(2)(vi) of Regulation S-K.
21. We note your disclosure that 30% of the annual award is earned “based on achievement of the individual’s performance strategic objectives”. We also note your disclosure about CEO’s personal strategic objectives on page 27 and disclosure that the other named executive officers had similar objectives to the extent that they had same areas of responsibilities.
 - The compensation discussion and analysis should be sufficiently precise to identify material differences in compensation policies with respect to

individual named officers. Please disclose whether a named officer's personal performance is measured against pre-established personal goals. Please refer to Section II.B.1 of Commission Release No. 33-8732A, which is available on our website at

<http://www.sec.gov/rules/final/2006/33-8732a.pdf>.

- Please explain how the compensation committee determined the CEO's 165% payout based on his achievement of personal strategic goals. While you have disclosed the nature of these personal strategic goals, you have not provided a quantitative discussion of these goals in order for a named officer to earn the 30% portion of an annual award. Please tell us, and in future filings quantify these personal strategic goals for each named officer.
22. Your disclosure in footnote (1) to the Grant of Plan-Based Awards table on page 36 does not indicate whether the performance targets have been achieved and by how much. Please disclose the actual level of target achievement. In addition, please reconcile your disclosure about the weight given to each performance metric. We note that on page 27 there is a 40%/60% split between EPS and cash flow, while in footnote (1) you disclose a 43%/57 split between cash flow and EPS.

Individual Target Award Level Determination, page 31

23. Please disclose the actual target values for each named officer as set by the compensation committee. Please also disclose the market price and risk factor that were used to set this target.

Current Measure, page 32

24. We note that in connection with the long-term incentive compensation, the compensation committee has selected ROE as the financial measure. In accordance with Instruction 5 of Item 402(b) of Regulation S-K, your disclosure needs to identify how this measure was calculated from your audited financial statements. Please revise accordingly.

Summary Compensation Table, page 35

25. Please explain to us how you are reporting the numbers in the "Bonus" and the "Non-Equity Incentive Plan Compensation" columns considering that the annual incentive awards are made under the Senior Management Incentive Compensation Plan (for the CEO and CFO only) and the Arch Annual Incentive Plan (we note your disclosure on page 26). Please note that the compensation reported in the "Bonus" column should be of a discretionary nature and not payable pursuant to a plan. See Item 402(c)(2)(iv) of Regulation S-K and the related instructions, as

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well as Question 119.02 of the Regulation S-K Compliance and Disclosure Interpretations, which are available on our website at <http://www.sec.gov/divisions/corpfin/guidance/regs-kinterp.htm>.

* * * *

Please respond to these comments by providing the supplemental information requested within ten business days or tell us when you will provide us with a response. Please provide us with a supplemental response that addresses each of our comments. Please file your supplemental response on EDGAR as a correspondence file.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filings reviewed by the staff to be certain that they provided all information investors require. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made. In connection with responding to our comments, please provide, in writing, a statement from the company acknowledging that:

- the company is responsible for the adequacy and accuracy of the disclosure in their filings;
- staff comments or changes to disclosure in response to staff comments do not foreclose the Commission from taking any action with respect to the filing; and
- the company may not assert staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

In addition, please be advised that the Division of Enforcement has access to all information you provide to the staff of the Division of Corporation Finance in our review of your filing or in response to our comments on your filing.

If you have questions regarding comments on the financial statements and related matters, you may contact Jenn Do at (202) 551-3743, Al Pavot at (202) 551-3738 or me at (202) 551-3355. Please contact Era Anagnosti at (202) 551-3369 or, in her absence, Andrew Schoeffler, at (202) 551-3748, with any other questions.

Sincerely,

Terence O'Brien,
Accounting Branch Chief