



UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, D.C. 20549-4631

November 23, 2010

*By U.S. mail and facsimile to (203) 229-3143*

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

**RE: Arch Chemicals, Inc.  
Form 10-K for the fiscal year ended December 31, 2009  
Filed February 19, 2010  
Definitive Proxy Statement on Schedule 14A  
File No. 1-14601**

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 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 or may not 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 filing. 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.

Annual Report on Form 10-K filed on February 19, 2010

Exhibits, page 113

1. We note that you have filed some, but not all, of the exhibits and the schedules to the Note Purchase and Private Shelf Agreement (Exhibit 4.7), the Amended and Restated Receivables Sale Agreement (Exhibit 10.20(b)), and the Amended and Restated Receivables Purchase Agreement (Exhibit 10.20(c)). We also note that Exhibit 4.7 was filed as an exhibit to your Form 8-K filed on September 3, 2009 and that Exhibits 10.20(b) and 10.20(c) were filed as exhibits to your Form 8-K filed on October 9, 2009. We make a similar observation with respect to the

master note purchase agreement filed as Exhibit 4.1 to your Form 8-K filed on September 9, 2010. Please file amendments to these Forms 8-K to provide a complete copy of each agreement and ensure that in the future you file all material agreements in complete form. Refer to Item 601(b)(10) of Regulation S-K.

Schedule 14A Definitive Proxy Statement Filed on March 23, 2010

Summary Compensation Table, page 36

2. We refer you to comment 25 in our letter dated May 14, 2009. We note that you continue to disclose the portion of the annual bonus that resulted from the achievement of personal performance (“personal performance bonus”) in the “Bonus” column. We have re-evaluated your June 1, 2009 response to our prior comment 25, and in light of our guidance found in Question 119.02 of our Regulation S-K C&DIs, we believe that you should reconsider how you are disclosing the personal performance bonus in the summary compensation table. You disclose that the personal strategic objectives are determined at the same time that the financial targets for bonuses are set and that the performance of each named executive officer is measured against these pre-established personal strategic objectives. As such, payment of the personal performance bonus is guaranteed following the compensation committee’s determination that the personal targets were met, regardless of whether the compensation committee’s determination may have been discretionary or subjective in light of the fact that some of the performance objectives may be more qualitative than quantitative in nature. The personal performance bonus is payable under a plan which provides for compensation intended to serve as incentive for performance to occur over a specified period, and as such disclosure is required to be made pursuant to Item 402(c)(2)(vii) of Regulation S-K.

Compensation Risk Assessment, page 56

3. We note your disclosure in response to Item 402(s) of Regulation S-K. Please advise us as to whether you concluded that your compensation policies and practices are not reasonably likely to have a material adverse effect on your company. Please also describe to us the process you undertook to reach that conclusion.

\* \* \* \*

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 may raise additional comments after we review your responses.

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To expedite our review, you may wish to provide complete packages to each of the persons named below. Each package should include a copy of your response letter and any supplemental information.

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.

You may contact Era Anagnosti at (202) 551-3369, or, in her absence, Andy Schoeffler at (202) 551-3748 if you have questions regarding these comments.

Sincerely,

Terence O'Brien  
Branch Chief