



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

June 17, 2010

By U.S. mail and facsimile to (440) 930-1002

Mr. Robert M. Patterson, Senior Vice President and Chief Financial Officer
PolyOne Corporation
33587 Walker Road
Avon Lake, OH 44012

**RE: PolyOne Corporation
Form 10-K for the fiscal year ended December 31, 2009
Filed February 18, 2010
Definitive Proxy Statement on Schedule 14A filed on March 29, 2010
Form 10-Q for the quarter ended March 31, 2010
File No. 1-16091**

Dear Mr. Patterson:

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.

Form 10-K for the year ended December 31, 2009

Management's Discussion and Analysis, page 16

Results of Operations, page 19

1. We note the goodwill impairment charge of \$175.0 million recorded in the fourth quarter of 2008 and the first quarter of 2009. Given the magnitude of this charge, in future filings, please revise the risk factor on page 11 related to goodwill and

potential impairment to disclose that such charges have materially impacted your historical operating results.

2. You state on page 20 under the Income Tax (Expense) Benefit heading that you decreased your existing deferred tax asset valuation allowances related to various U.S. federal, state and foreign deferred tax assets by \$54.6 million in 2009, resulting in a non-cash tax benefit of \$23.8 million, and that the remaining decrease of \$30.8 million related primarily to changes in your liabilities for pensions and other post-retirement benefits. Please tell us and revise future filings to explain the need for the \$23.8 million decrease. We also note you have not discussed herein the tax expense of \$101.1 million in 2008, due largely to the tax valuation allowance recorded in the fourth quarter of that year of \$105.9 million. Please revise future filings accordingly. Lastly, we note in the Item 2.06 Form 8-K filed December 22, 2008, the charge to be taken in the fourth quarter to record a valuation allowance against your U.S. deferred tax assets was only \$65 million. Please reconcile between the \$65 million and \$105.9 million, or provide a rollforward of the tax valuation allowance for fiscal 2008.

Liquidity and Capital Resources, page 24

3. In future filings, please include a brief description of the material terms of your debt instruments (e.g., your debentures and medium- and long-term notes) and credit facilities, as well as an analysis by management of the impact of these instruments and facilities on your liquidity over both the short-term and the long-term.
4. Please explain to us why no “form of” note or debenture has been filed as an exhibit for each outstanding debt instrument. We may have additional comments following the review of your response.

Contractual Obligations, page 27

5. In future filings, please revise to disclose in a footnote to the table the nature of your purchase obligations.

Item 15. Exhibits and Financial Statement Schedules, page 63

6. We note that you have not filed the exhibits and the schedules to the following agreements:
 - Second Amended and Restated Receivables Purchase Agreement (Exhibit 10.35);
 - Second Amended and Restated Receivables Sale Agreement (Exhibit 10.36);
 - Canadian Receivables Purchase Agreement (Exhibit 10.37); and

- Canadian Receivables Sale Agreement (Exhibit 10.38).
Please file complete copies of these agreements with your next Exchange Act report.

Definitive Proxy Statement on Schedule 14A filed on March 29, 2010

General

7. We note that you have not included disclosure in response to Item 402(s) of Regulation S-K. Supplementally please advise us of the basis for your conclusion that disclosure is not necessary and describe the process you undertook to reach that conclusion.

Corporate Governance and Board Matters, page 7

8. We note your disclosure about the board's oversight of risk beginning on page 11. In future filings, please disclose the effect that this oversight role has had on the board's leadership structure. Please refer to Item 407(h) of Regulation S-K.

Beneficial Ownership Of Common Shares, page 15

9. We note your footnote (4) disclosure. In light of the requirements of Item 403 of Regulation S-K and Rule 13d-3 of the Exchange Act, please explain to us why you believe that exclusion from the beneficial ownership table of the shares of common stock issuable upon the exercise of SARs is appropriate. In this regard, we note that, for purposes of Rule 13d-3, it appears from your disclosure that the holders of the SARs have the right to acquire the underlying stock within 60 days. Please address in your response whether inclusion of such shares would have affected your conclusion related to management's percentage of beneficial ownership, found in the last sentence of footnote (1) disclosure.

Form 10-Q for the period ended March 31, 2010

Note 2 – Change in Accounting Principle, page 5

10. Please tell us why, if the change to valuing your inventories to FIFO was effective January 1, 2010, which was before the December 31, 2009 Form 10-K was filed, this matter was not included in the Subsequent Events footnote on page 61 of your Form 10-K.

Management's Discussion and Analysis, page 17

11. We note your disclosure that the income tax benefit recorded in the first quarter of 2009 reflects \$10.0 million of income tax benefits and related interest income due

to the favorable settlement of a foreign tax audit as compared to no such benefits in the first quarter of 2010. Given its materiality to your results of operations, please tell us why this settlement does not appear to be disclosed in the December 31, 2009 Form 10-K.

Liquidity and Capital Resources, page 22

12. We note that while sales increased only 14% during the first quarter of 2010 from the fourth quarter of 2009, accounts receivable increased 24%. Accounts receivable as a percentage of quarterly sales also increased from 50% at December 31, 2009 to 54% at March 31, 2010. Given the significant impact accounts receivable have on your operating cash flows, please revise future filings to disclose days sales outstanding and explain material fluctuations therein.

* * * *

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.

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.

Mr. Robert M. Patterson
PolyOne Corporation
June 17, 2010
Page 5

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 Jenn Do at (202) 551-3743, Al Pavot at (202) 551-3738 or me at (202) 551-3355 if you have questions regarding comments on the financial statements and related matters. Please contact Era Anagnosti at (202) 551-3369 or, in her absence, Dieter King at (202) 551-3338, with any other questions.

Sincerely,

Terence O'Brien
Branch Chief