



DIVISION OF
CORPORATION FINANCE

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

VIA FACSIMILE AND U.S. MAIL

February 9, 2009

Paul E. Huck
Senior Vice President and Chief Financial Officer
Air Products and Chemicals, Inc.
7201 Hamilton Boulevard
Allentown, Pennsylvania 18195

**RE: Air Products and Chemicals, Inc.
Form 10-K for Fiscal Year Ended September 30, 2008
Form 10-Q for Fiscal Quarter Ended December 31, 2008
File No. 1-4534**

Dear Mr. Huck:

We have reviewed your filing and have the following comments. We have limited our review of your filing to the matters listed below. If you disagree with a comment, 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 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 SEPTEMBER 30, 2008

General

1. Where a comment below requests additional disclosures or other revisions, please show us in your response what the revisions will look like. These revisions should be included in your future filings, including your interim filings where appropriate.

Critical Accounting Policies and Estimates, page 28

Impairment of Long-Lived Assets, page 29

2. We note that you have recognized significant impairment charges during the year ended September 30, 2008 and the three month period ended December 31, 2008 related to your U.S. Healthcare business. In the interest of providing readers with a better insight into management's judgments in accounting for impairments of long-lived assets including plant and equipment, goodwill and intangible assets, please consider disclosing the following in future filings, beginning with your next interim filing:
- Please clarify how you determine which property, plant and equipment held for use should be tested for impairment as well as at what point in time they should be tested for impairment. Please state the types of events and circumstances that you believe indicate impairment;
 - The reporting unit level at which you test goodwill for impairment and your basis for that determination;
 - Sufficient information to enable a reader to understand how you apply the present value of future cash flows in estimating the fair value of your reporting units and why management selected this method as being the most meaningful in preparing your goodwill impairment analyses;
 - How you determine the appropriate growth period and exit trading multiple to apply in your goodwill impairment analysis;
 - How you determine the appropriate discount rates and attrition rates to apply in your intangible asset impairment analysis;
 - A qualitative and quantitative description of the material assumptions used in determining impairments for all long-lived assets and a sensitivity analysis of those assumptions based upon reasonably likely changes; and
 - If applicable, how the assumptions and methodologies used for valuing property, plant and equipment, goodwill and intangible assets in the current year have changed since the prior year, highlighting the impact of any changes.

Form 10-Q for the Quarter Ended December 31, 2008

Financial Statements

10. Commitments and Contingencies, page 15

Customer Bankruptcy, page 15

3. You indicate that a major customer began operating under Chapter 11 bankruptcy protection and you had outstanding net receivables from this customer of \$35.7 million. Please provide the following:

- Please disclose and tell us the significance of this customer to the Tonnage Gases' segment revenues and segment operating income;
- Please disclose and tell us whether the bankruptcy of this customer triggered any interim impairment evaluations or whether this development will have an impact on the projected cash flows for the Tonnage Gases segment; and
- You have disclosed that no single customer accounts for a significant portion of annual sales. Please clarify whether any of your segments have a single customer that accounts for a significant portion of segment annual sales.

* * * *

Please respond to these comments within 10 business days. Please provide us with a response letter that keys your responses to our comments and provides any requested information. Detailed letters greatly facilitate our review. Please file your response on EDGAR as a correspondence file. Please understand that we may have additional comments after reviewing your responses to our comments.

We urge all persons who are responsible for the accuracy and adequacy of the disclosures in the filing to be certain that the filing includes all information required under the Securities Exchange Act of 1934 and that they have provided all information investors require for an informed investment decision. 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.

Mr. Paul E. Huck

February 9, 2009

Page 4

You may contact Ernest Greene, Staff Accountant, at (202) 551-3733, or in his absence, Lisa Haynes, Staff Accountant, at (202) 551-3424, if you have questions regarding comments on the financial statements and related matters.

Sincerely,

Rufus Decker
Accounting Branch Chief