



DIVISION OF
CORPORATION FINANCE

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

July 11, 2006

Mr. Robert M. Tarola
Senior Vice President and Chief Financial Officer, W.R. Grace & Co.
7500 Grace Drive
Columbia, MD 21044-4098

Re: W.R. Grace & Co.
Form 10-K for the fiscal year ended December 31, 2005
File No. 1-13953

Dear Mr. Tarola:

We have reviewed your filing and have the following comments. Where indicated, we think you should revise your document 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 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.

Treatment of Asbestos Litigation under Plan of Reorganization, page 22

1. We note that the asbestos claimants committees and the future claimants representative continue to assert that your asbestos-related liabilities are substantially higher than \$1,613 million. Please tell us the estimated range of asbestos-related liabilities asserted by the committees and representative.

Consolidated Statement of Cash Flows, page F-7

2. The reconciliation of net income to net cash flows provided by operations activities must begin with net income, as required by paragraphs 28 and 29 of Statement 95. Please revise your statements of cash flows accordingly.

Note 1 – Basis of Presentation and Summary of Significant Accounting and Financial Reporting Policies – Financial Instruments, page F-11

3. We note that you periodically use commodity forwards and option contracts, interest rate swap agreements and foreign exchange forward and option contracts to manage exposure to fluctuations in commodity prices and interest and foreign currency exchange rates. Please expand your disclosure to include your accounting policy for these contracts.

Note 2 – Chapter 11 Related Information, page F-12

4. Based on your disclosure relating to PI-AO claims, it appears that you are liable to pay claims in excess of the amount determined under the Chapter 11 reorganization. Please tell us and disclose in future filings, if known, the range of your potential exposure to these claims. If amount is not determinable please disclose.

Note 14 – Commitments and Contingent Liabilities – Environmental Remediation, page F-29

5. Your disclosure indicates that you accrue for anticipated costs associated with investigative and remediation efforts where an assessment has indicated that a probable liability has been incurred and the cost can be reasonably estimated. Please tell us and expand your disclosures in significant accounting policies to indicate what consideration you have given to the guidance provided by SFAS 143 and how that guidance impacts your accounting policies.
6. We note that on August 29, 2003, the District Court issued a ruling in favor of the United States EPA that requires you to reimburse the government for \$54.5 million (plus interest) in costs expended through December 2001. Please tell us if you have recorded an accrual relating to this ruling.

Note 19 – Operating Segment Information, page F-39

7. We note that you currently provide disclosure for two reportable segments: Grace Davison and Grace Performance Chemicals. It appears from your disclosures elsewhere in the filing, including the discussion of your Business on page one, the discussion of your products and markets on page three, and the analysis of your business in MD&A, that you have multiple operating segments, and that you may have aggregated multiple operating segments into these two reportable segments. Please provide us with a detailed explanation of how you determined both your operating segments and your reportable segments. Your response should specifically identify each of your operating segments. Please tell us why you believe your aggregation is appropriate based on the guidance found in paragraph 17 of SFAS 131 and EITF 04-10.

Critical Accounting Estimates, page F-47

8. Revise future filings to provide a more comprehensive discussion of your critical accounting estimates. Based on the materiality of certain assets and liabilities, disclose and discuss the significant assumptions underlying your analysis and address the impact of changes in those assumptions. Refer to Release Nos. 33-8098 and 33-8040.

Summary Financial Information and Metrics, page F-47

9. We note your presentation of the title “Grace Operating Income and Margin” on Page F-50. This presentation appears to be a non-GAAP measure as it represents Operating Income from Core Operations only as identified in your Analysis of Continuing Operations on page F-48. We believe this title may be confusingly similar to titles used for GAAP purposes. Please revise your description to comply with Item 10(e)(ii)(E) of Regulation S-K.

Pre-tax Income (Loss) from Non-core Activities, page F-50

10. It appears that you have adjusted your GAAP net income measure to exclude costs and income which are expected to be volatile as potentially material items are addressed through your Chapter 11 proceedings and/or as the financial implications of your legal contingencies become apparent. Most of the items which you have identified as “non-core” appear to have occurred in the previous two years and may be reasonably likely to recur in the within two years. Please refer to Item 10(e)(ii)(B) of Regulation S-K and our response to question nine of “Frequently Asked Questions Regarding the Use of Non-GAAP Financial Measures” and tell us why you believe that these adjustments are appropriate.

11. Notwithstanding the comment above, please further explain to us why you believe these items should be considered “non-core” as it appears to us that many of the items listed are the direct result of your core business activities. Additionally, please explain to us why you believe these disclosures are necessary and why excluding these amounts will provide a useful measure in assessing your business for current and potential investors.

Proforma Financial Information, page F-56

12. We note that on January 13, 2005, you filed an amended plan of reorganization and related documents to address certain objections of creditors and other interest parties. We also noted that the amended plan is “not supported by committees representing asbestos personal injury claimants and asbestos property damage claimants.” Additionally, you have indicated that your “proforma financial information may not be consistent with the plan of reorganization documents filed on January 13, 2005 due to subsequent changes in operations and accounting estimates.” It appears to us that the uncertainty in the information included in the proforma financial information may indicate that disclosures are not consistent with the objectives of Article 11 of Regulation S-X. In light of this information, please tell us why you believe that the inclusion of this proforma information is appropriate under this guidance and meaningful to current and potential investors. We may have additional comments upon reviewing your response.

Liquidity and Capital Resources, page F-61

Cash Flow from Core Operations – Cash Flow from Noncore Activities, page F-61

13. We note that you present net cash flow from core operations and net cash flow from noncore activities, which are considered non-GAAP measures. You indicate that you have provided these measures to assist in distinguishing the operating results of your current business base from results and related assets and liabilities of past businesses, discontinued products, and corporate legacies and the effect of your Chapter 11 proceedings. Please further explain to us why you believe these non-GAAP measures are appropriate based on the guidance set forth in Item 10(e)(ii) of Regulation S-K and our responses to “Frequently Asked Questions Regarding the Use of Non-GAAP Financial Measures.” If it is determined that your non-GAAP measures are appropriate under the noted guidance, please revise your presentation to include the information required by Item 10(e)(i) of Regulation S-K and our responses to the above noted FAQs.

Table of Contractual Obligations, page F-62

14. In future filings please include all future obligations which will affect your liquidity, including post retirement obligations other than pensions. Additionally, please include the amount of liabilities subject to compromise. If you choose not to include the liabilities subject to compromise in your table of contractual obligations, you should include the amount in a footnote to the table and clearly indicate that the amount has not been included in the table.

Risk Management, page F-62

15. Please provide the quantitative information relating to market risk as required by Item 305 of Regulation S-K.

As appropriate, please amend your filing and respond to these comments within 10 business days or tell us when you will provide us with a response. Please provide us with a supplemental response letter that keys your responses to our comments and provides any requested supplemental information. Detailed letters greatly facilitate our review. Please file your supplemental 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 disclosure in the filing to be certain that the filing includes all information required under the Securities and 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.

Mr. Robert M. Tarola
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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 any questions regarding these comments, please direct them to Mindy Hooker, Staff Accountant, at (202) 551-3732 or to the undersigned at (202) 551-3768.

Sincerely,

John Cash
Branch Chief