



DIVISION OF
CORPORATION FINANCE

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

August 21, 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
Form 10-Q for the period ended June 30, 2006
File No. 1-13953

Dear Mr. Tarola:

We have reviewed your response to our letter dated July 11, 2006 and have the following comments. We ask that you respond by September 5, 2006.

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 fiscal year ended December 31, 2005

Note 19 – Operating Segment Information, page F-39

1. We have reviewed your response to our prior comment seven and based on your discussions regarding your twelve product groups, we continue to believe that these product groups may, in fact, be operating segments as defined in paragraph 10 of SFAS 131. In order to help us more clearly understand how you developed your reportable segments, please provide us with the actual reports (on a year to date basis for each period presented) which are reviewed by your chief operating decision maker. Such reports should be actual, and provided at the lowest level of detail as provided to the CODM. Additionally, provide us, at the product group level, a 5 year schedule showing YTD sales, operating earnings and operating earnings as a percent of sales. We welcome any analysis you may wish to accompany such data.

Summary of Financial Information and Metrics – Non-GAAP Disclosures, page F49

2. Since you present a non-GAAP performance measure that excludes recurring expenses, in future filings, please revise your presentation to fully comply with our response to Question 8 of “Frequently Asked Questions Regarding the Use of Non-GAAP Financial Measures.” It appears to us that your current presentation does not address the material limitations associated with the non-GAAP measure you present or the manner in which you compensate for these limitations. Additionally, in future filings we ask that you clearly disclose that your use of non-core financial information is also considered a non-GAAP measure, not just your use of core financial information.

Proforma Financial Information, page F-56

3. We note your response to prior comment twelve; however, it remains unclear to us how providing this proforma information is consistent with the objectives of Article 11 of Regulation S-X. We note your disclosure on page I-11 of your Form 10-Q for the period ended June 30, 2006 which indicates that, “...a materially different plan of reorganization may ultimately be approved...” and your disclosure on page I-18 of the same filing regarding the Funding Amount indicating, “...this outcome is highly uncertain and will depend on a number of Bankruptcy Court rulings favorable to Grace’s position.” In light of these disclosures and the opposition you are experiencing from certain debtor groups, please tell us why you believe that the consummation of your bankruptcy proceedings is probable.

Form 10-Q for the period ended June 30, 2006

Consolidated Statements of Cash Flows, page I-4

4. We note that you have changed your six months ended, June 30, 2005 cash flow to properly begin with Net Income (loss) in accordance with SFAS 95. Please tell us what consideration you have given to the disclosure requirements of SFAS 154, “Accounting Changes and Error Corrections.”

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.

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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.

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