



DIVISION OF  
CORPORATION FINANCE

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

March 23, 2012

Via E-mail

Mr. Seth H. Bagshaw  
Vice President, Chief Financial Officer & Treasurer  
MKS Instruments, Inc.  
2 Tech Drive, Suite 201  
Andover, Massachusetts 01810

RE: **MKS Instruments, Inc.**  
**Form 10-K for the fiscal year ended December 31, 2010**  
**Filed February 25, 2011**  
**File No. 000-23621**

Dear Mr. Bagshaw:

We have reviewed your response letter dated February 24, 2012 and filings and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter within ten business days by providing the requested information, or by advising us when you will provide the requested response. If you do not believe our comments apply to your facts and circumstances, please tell us why in your response.

After reviewing the information you provide in response to these comments, we may have additional comments.

Form 10-K for the Fiscal Year Ended December 31, 2010

Note 22. Geographic, Product and Significant Customer Information, page 67

1. From your responses to our prior comments we note that the company prepares Product Group Partial Income Statements on a monthly basis. We further note that this financial information is given to both the CODM and the Board of Directors and that the CODM discusses this information during scheduled meetings with the relevant managers, with managers from each group (i.e., PRG, ASG, CIT, etc.) making scheduled presentations sometimes for as long as two hours.
  - In light of the fact that ASC 280-10-50-1 defines an “operating segment” as a component of a public entity that, among other characteristics, has operating results that are regularly reviewed by the CODM to make decisions about resources to be allocated to the segment *and* assess its performance, please tell us why the product groups whose monthly results are regularly presented to, discussed with, and reviewed by your CODM and your Board of Directors would not represent your operating segments.
  - Since your response states that the CODM does not use the financial information for resource decisions, please tell us why this information is regularly provided to the CODM and the Board of Directors.
  - Tell us how, in spite of having been presented with all this information, the CODM is able to allocate resources and assess performance without using the disaggregated information.
2. Please tell us whether the information you provided included all of the information related to October 17, 2011, or just one of the financial reviews.
3. Please explain the composition of the five product groups for which you perform the financial reviews and how these groups relate to the three product groups – Instruments and Control Systems, Power and Reactive Gas Products, and Vacuum Products - disclosed on page 75 of this Form 10-K. In addition, please explain to us how these five product groups as well as the three product groups discussed in your Form 10-K relate to the corporate divisions or business/product groupings disclosed on your website at <http://www.mksinst.com/contact/CorpDirectory.aspx>.

Seth H. Bagshaw  
MKS Instruments, Inc.  
March 23, 2012  
Page 3

You may contact Dennis Hult, Staff Accountant, at (202) 551-3618 or Kate Tillan, Assistant Chief Accountant, at (202) 551-3604 if you have questions regarding comments on the financial statements and related matters. Please contact Allicia Lam at (202) 551-3316 or Tim Buchmiller at (202) 551-3635 if you have questions on any other comments. You may also contact me at (202) 551-3671.

Sincerely,

/s/ Martin James

Martin James  
Senior Assistant Chief Accountant

cc via e-mail: Pam Massero