



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

December 20, 2011

Via E-mail

Mr. Seth H. Bagshaw  
Vice President, Chief Financial Officer and 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 filing 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 5. Cash and Cash Equivalents and Investments, page 46, and Note 6. Fair Value Measurements, page 47

1. Please respond to the following:
  - Please reconcile the tables on pages 46, 47 and 48 for money market funds and certificates of deposit, U.S. agency obligations and corporate obligations.

- Further, please reconcile the disclosure in the tables on pages 47 and 48 as of December 31, 2010 with your disclosures for this date on pages 8 and 9 of your September 30, 2011 Form 10-Q. This includes the level used to determine fair value measurements. Your response should include explanations for differences.
- Please tell us how you applied ASC 230-10-45-4 and the definition of cash equivalents in ASC 230-10-20 in determining your cash equivalents for your investments in U.S. treasury obligations and agency obligations. Please also refer to the disclosure in Note 3 in your September 30, 2011 Form 10-Q.
- Please explain in more detail the components of your U.S. treasury and agency obligations. It appears that you combined your categories for U.S. agency obligations and corporate obligations as shown in your December 31, 2010 Form 10-K in your September 30, 2011 Form 10-Q. Please explain why you combined these categories.

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

2. Please tell us about the company's analysis in determining that it has one reportable segment under ASC 280-10-50. Your response should address the following:
  - Explain whether any operating segments were aggregated under ASC 280-10-50-11.
  - Explain the contents of the information you provide to your chief operating decision maker.
  - We note that the company includes revenue information for three product groups: Instrumentation and Control Systems, Power and Reactive Gas Products and Vacuum and Other Products. Include a discussion of the types of information about these product groups that is included in the information provided to your chief operating decision maker.
  - We note that the organization of the company includes a vice president for each of the following groups: ENI Products, Controls and PFMC Products, ASTeX Products, Analytical Solutions Group, and Vacuum Products. Include a discussion of the types of information about these groups that is included in the information provided to your chief operating decision maker.

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 the information the Securities Exchange Act of 1934 and all applicable Exchange Act rules 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.

Seth H. Bagshaw  
MKS Instruments, Inc.  
December 20, 2011  
Page 3

In responding to our comments, please provide a written statement from the company acknowledging that:

- the company is responsible for the adequacy and accuracy of the disclosure in the filing;
- 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.

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. You may also contact me at (202) 551-3671.

Sincerely,

/s/ Kate Tillan for

Martin James  
Senior Assistant Chief Accountant

cc via e-mail: Pam Massero