



DIVISION OF  
CORPORATION FINANCE

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

January 30, 2012

Via E-mail

Mr. Seth H. Bagshaw  
Chief Accounting Officer  
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 January 18, 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. Further to your response to prior comment 2, please provide us with a sample of the information reviewed by your CODM. Please also tell us the nature of the information presented to your board of directors.

2. Please tell us how the company applied ASC 280-10-50-1 in determining the operating segments since it appears that you may have discrete financial information available for the product groups which are regularly reviewed by your CODM. It is not clear from your response how you considered this information in your analysis. Further, the company's response that you believe that based on the nature of the business, the commonality of products and the significant reliance on a few key customers in the semiconductor market, that you have only one operating segment appears to suggest that the determination of the operating segment may not have been based on the criteria in ASC 280-10-50-1 and may have considered some of the aggregation criteria of ASC 280-10-50-11.

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/ Kate Tillan for

Martin James  
Senior Assistant Chief Accountant

cc via e-mail: Pam Massero