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June 19, 2012

Martin James, Senior Assistant Chief Accountant
United States Securities & Exchange Commission
Division of Corporation Finance
100 F Street, N.E.
Washington, DC 20549-6010

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. James:

This letter is submitted to you on behalf of MKS Instruments, Inc. (the "Company") in further response to question number one in the letter of the Staff of the Securities and Exchange Commission (the "Staff") dated March 23, 2012. The Company provided a first response to question number one and responses to questions number 2 and 3 in its letter to the Staff dated April 30, 2012 (the "April 30th Letter"). We have included the Staff's question number one below in bold and italics. Beneath the question is the Company's response.

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.***

Company Response

As the Company described in its prior written responses to the Staff's questions as well as in its subsequent verbal discussions with the Staff, the Company functions in a highly cyclical industry dominated by a few large multinational customers. These industry characteristics affect most operational elements of the Company and the majority of products the Company sells across all geographies. Due to these characteristics, their impact on the Company as a whole and the inherent limitations in utilizing the Partial Product Group Income Statements described in previous responses, the Company's chief operating decision-maker ("CODM") relies on consolidated information to assess the business and make critical resource allocation decisions. Additionally, the CODM takes a customer-centric view and utilizes bookings and sales information and trends for the major industries served and for the Company's major customers because the Company's top 10 customers represented a significant portion of total sales. For example, the Company's top ten customers represented 41% of 2011 sales. The Company's Board of Directors does not regularly receive or review the Partial Product Group Income Statements. Further, as described in previous responses, the Company has aligned its Management Incentive Plan to be based solely on consolidated financial results, including for those individuals within the product groups.

Based on its discussions with the Staff, the Company acknowledges and understands the Staff's comments regarding certain of the materials provided to the CODM, particularly the Partial Product Group Income Statements provided in the Company's Monthly Business Reviews ("MBRs"). The Company continues to believe the Partial Product Group Income Statements are not used by the CODM for decision making purposes, and, therefore, should not be a critical factor in determining its segment disclosure conclusions. Nevertheless, the Company acknowledges the Staff's stated presumption that if the CODM receives such information, it is used for decision making purposes. In light of this, and the Company's desire to resolve the comment process with the Staff, the Company has prepared an alternative view that assumes eight (8) operating segments, consistent with the existing Partial Product Group Income Statements. Further, the Company prepared an aggregation analysis (as outlined below) and based upon this analysis the Company believes there would be four (4) reportable segments and a Corporate and Eliminations reconciling column. Given that this alternate segment view does not significantly change or enhance the financial statements, the Company would make these changes prospectively, and include comparative information to relevant prior periods and related Management, Discussion & Analysis ("MD&A") for each of the reportable segments.

Because the proposed reportable segments would not depict total worldwide sales for each group of similar products (one of the inherent limitations of the Partial Product Group Income Statements is that they exclude the third party sales made through the Company's Asia and Europe sales subsidiaries), the Company would continue to disclose the product sales information that it provided in Note 22, commencing on page 67 of the Company's Form 10-K for the year ended December 31, 2010 (the "2010 Form 10-K"), and net sales amounts for each group of similar products. The Company would separately provide the worldwide sales information on the following groups of similar products: Instruments and Controls Products, Power and Reactive Gas Products, Vacuum Products and Analytical Solutions Group ("ASG") Products. In order to present this sales information for each of the reported groups of similar products, the Company would compile only the net sales information (no other income statement information) across all of its legal entities.

As previously communicated to the Staff in the April 30th Letter, the Company maintains thirty-seven (37) individual profit and/or cost centers in its consolidation system. These 37 individual profit/cost centers include all legal entities, including holding companies and elimination entities. Certain of these profit/cost centers are combined for preparing the Partial Product Group Income Statements. For example, in creating the Astex Products Partial Product Group Income Statement, two legal entities and an elimination entity are combined into an Astex Partial Product Group Income Statement which is then included in the Partial Product Group Income Statements for the MBRs (the individual pieces are not presented to the CODM).

In determining what reportable segments might be disclosed, the Company considered the financial information regularly included in the MBRs and in the CEO Direct Reports meetings, and identified eight (8) potential operating segments, as follows:

<u>Operating Segment</u>	<u># of profit/cost centers</u>	<u>Information regularly provided to CODM</u>	
		<u>In MBR</u>	<u>In CEO Direct Reports Meeting</u>
PFMC Products	1	X	
Controls Products (CIT)	3	X	
ASG Products	7	X	
Astex Products	3	X	
ENI Products	4	X	
HPS Products	2	X	
Asia Region Sales & Service	5		X
Europe Region Sales & Service	3		X
Corporate and Eliminations (including Holding companies)	9	Information only included in consolidated results - not provided separately	
Total number of profit/cost centers	<u>37</u>		

The number of profit/cost centers refers to the number of profit/cost centers in the Company's consolidation system as described above that are combined to create the Partial Product Group Income Statement for each of the proposed operating segments, and includes corporate entities, non-operating holding companies and elimination entities.

Also, as previously communicated to the Staff, the Company has provided, in the past only as backup supplemental materials, income statements for each of the five countries included in our Asia Region Sales & Service segment. This information had been provided as backup or supplemental slides only and the Company has discontinued providing these backup income statements as part of the Asia Region Sales & Service review. This information was not requested by the CODM, but rather unilaterally provided by the local management team. This supplemental information is not reviewed or discussed in the meetings. The Company does not and has not provided country specific income statements for its Europe Region Sales & Service segment to the CODM. These regions are reviewed in total by the CODM, focusing on bookings and sales. Therefore, the Company would not consider the individual countries to be operating segments, but rather the sales region.

In preparing an alternate view, the Company has performed an aggregation analysis following the criteria prescribed in ASC 280-50-11 including assessing the similarity of the products, the nature of the production processes, the type or class of customers, the methods used to sell and distribute the products

and the economic characteristics of the operating segments. The analysis of economic characteristics considered historical financial information and future prospects including an analysis of sales growth trends, gross margin trends and operating margin trends over a nine year period (4 years of history and 5 years of forecasted information including 2012). The Company is providing supplementally, by separate letter dated June 19, 2012, this aggregation analysis.¹

Based upon this aggregation analysis, the Company would aggregate the eight operating segments listed above into the following four reportable segments and a Corporate and Eliminations column:

<u>Reportable Segments</u>	<u>Operating Segments Included</u>
Advanced Manufacturing Capital Equipment Products	PFMC, Controls, ASTEX, ENI, HPS
Analytical Solutions Group (ASG)	Analytical Solutions Group (ASG)
Europe Sales and Service	Europe
Asia Sales and Service	Asia
Corporate and Eliminations	Corporate and Eliminations

The Company has provided in Appendix A to this letter, a sample of the possible segment disclosure using 2010 and 2011 information (related MD&A has not been included in this sample), including net sales, segment gross profit (loss), capital expenditures and segment assets. The Company would not provide amortization or depreciation by product group as this information is not reviewed by the CODM. The Company would not provide interest income or expense by product group as this information is not reviewed by the CODM and is not material. Net sales includes both external and intercompany sales and segment assets is comprised of accounts receivable and inventory because that is how the information is presented to the Company's CODM. The Company notes that it has presented much of the information included in Appendix A in its previous filings.

The Company does not believe that the alternate view additional segment information would be viewed by a reasonable investor as having significantly altered the "total mix" of information made available. In making this determination, the Company considered among other things both quantitative and qualitative factors, including that the alternate view of operating and reportable segments would not change the Company's statements of financial position, results of operations, or cash flows, would not result in any impairment charge being recognized as a result of the Company's goodwill impairment analysis, would not reveal or mask a trend in earnings, and would not have an impact on management compensation because the Company's plans are based on consolidated results.

¹ As indicated in our supplemental letter dated June 19, 2012 (the "Letter"), the Company is seeking Rule 83 confidential treatment with respect to the material referenced in the Letter. In the Letter, the Company requests that the materials provided be treated as confidential information and that the Securities and Exchange Commission provide timely notice to Kathleen Burke, Vice President and General Counsel, MKS Instruments, Inc., 2 Tech Drive, Suite 201, Andover, MA 01810, (Phone: 978-645-5500) before it permits any disclosure of the materials provided.

In addition to the reportable segments aggregation analysis described above, the Company is providing supplementally by separate letter dated June 19, 2012, the Company's organizational chart for the direct reports of the CODM as requested by the Staff:²

* * *

As per your request, the Company hereby acknowledges the following:

- the Company is responsible for the adequacy and accuracy of the disclosures in the filing;
- Staff comments or changes to disclosures 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 comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

Please do not hesitate to contact me at (978) 645-5578 or Kathleen F. Burke, Vice President and General Counsel at (978) 645-5574 should you have any further questions or comments.

Sincerely,

/s/ Seth H. Bagshaw

Seth H. Bagshaw
Vice President, Chief Financial Officer & Treasurer

² As indicated in our supplemental letter dated June 19, 2012 (the "Letter"), the Company is seeking Rule 83 confidential treatment with respect to the material referenced in the Letter. In the Letter, the Company requests that the materials provided be treated as confidential information and that the Securities and Exchange Commission provide timely notice to Kathleen Burke, Vice President and General Counsel, MKS Instruments, Inc., 2 Tech Drive, Suite 201, Andover, MA 01810, (Phone: 978-645-5500) before it permits any disclosure of the materials provided.

Appendix A – Sample Possible Segment Disclosures

Segment and Geographical Information

Effective in the second quarter of fiscal year 2012, the Company changed its financial reporting structure to now include four (4) reportable segments based upon the manner in which information is produced internally and provided to the Company's chief operating decision-maker ("CODM"). The Company had previously reported as a single operating segment. The Company has reclassified prior year information due to the changes made in its reportable segments.

The Company develops, manufactures, sells and services products that measure, control, power and monitor critical parameters of advanced manufacturing processes. The Company's CODM utilizes consolidated financial information to make decisions about allocating resources and assessing performance for the entire Company. In addition, certain disaggregated financial information is also provided to the CODM. Based upon the information provided to the CODM, the Company has determined that it has eight (8) operating segments and four (4) reportable segments.

The eight operating segments are PFMC Products, Controls Products, Astex Products, ENI Products, HPS Products, Analytical Solutions Group ("ASG") Products, Asia Region Sales & Service and Europe Region Sales & Service.

PFMC Products, Controls Products, Astex Products, ENI Products and HPS Products comprise a single reportable segment due to the similarities of the segments. This reportable segment, the Advanced Manufacturing Capital Equipment segment includes the development, manufacture, sales and serving of instruments and control products, power and reactive gas products and vacuum products, all of which are utilized in semiconductor processing and other similar advanced manufacturing processes. Sales in this segment include both external sales and intercompany sales (which are stated at agreed upon transfer prices). External sales of these products made in Europe or Asia are reported as sales in the Europe Region Sales & Service or Asia Region Sales & Service segments.

ASG Products, Asia Region Sales & Service and Europe Region Sales & Service are each separate reportable segments and the Company has reported corporate expenses, certain transfer pricing adjustments recorded in corporate and eliminations in corporate and eliminations. The ASG Products group includes, materials delivery, gas composition analysis and information technology products. The Europe and Asia sales and service segments mainly resell and service the Advanced Manufacturing Capital Equipment and ASG products sold into their respective regions.

MKS derives the segment results directly from the manner in which results are reported in its management reporting system. The accounting policies MKS uses to derive reportable segment results are substantially the same as those used for external reporting purposes except that a substantial portion of the sales of the Advanced Manufacturing Capital Equipment and ASG products segments are intercompany sales to the regions at tax based transfer prices and certain significant costs including stock based compensation and management incentive compensation costs are not allocated to the segments and are included in corporate. Management reviews several metrics of each operating segment including, net sales and gross profit (loss).

Financial information for the Company's reportable segments is as follows (in thousands):

Fiscal year ended December 31, 2011	Product Groups		Foreign Sales & Service Operations (1)		Corporate, eliminations and Other	Total
	Advanced Manufacturing Capital Equipment	Analytical Solutions Group	Europe	Asia		
Net Revenues	\$ 647,907	\$ 61,303	\$ 75,253	\$ 305,448	\$(267,394)	\$822,517
Segment Gross Profit	263,872	31,800	21,323	45,267	12,726	374,988
Capital Expenditures	12,243	572	362	1,552	838	15,567
Segment Assets:						
Account Receivable	24,134	5,099	6,079	60,242	25,340	120,894
Inventory	119,314	4,442	3,828	45,828	(19,780)	153,632
Total Segment Assets	<u>\$ 143,448</u>	<u>\$ 9,541</u>	<u>\$ 9,907</u>	<u>\$ 106,070</u>	<u>\$ 5,560</u>	<u>\$274,526</u>

Fiscal year ended December 31, 2010	Product Groups		Foreign Sales & Service Operations (1)		Corporate, eliminations and Other	Total
	Advanced Manufacturing Capital Equipment	Analytical Solutions Group	Europe	Asia		
Net Revenues	\$ 705,528	\$ 52,888	\$ 70,153	\$ 274,912	\$(250,367)	\$853,114
Segment Gross Profit (Loss)	287,302	25,830	19,587	48,952	(3,033)	378,638
Capital Expenditures	11,334	1,101	374	1,189	1,821	15,819
Segment Assets:						
Accounts Receivable	32,118	6,058	9,431	57,989	32,585	138,181
Inventory	126,670	4,013	4,955	39,119	(18,328)	156,429
Total Segment Assets	<u>\$ 158,788</u>	<u>\$ 10,071</u>	<u>\$ 14,386</u>	<u>\$ 97,108</u>	<u>\$ 14,257</u>	<u>\$294,610</u>

- (1) The Europe and Asia foreign sales and service operations do not represent total geographical Europe and Asia financial information. These sales and service operations only represent the sales from the resale and service of Advanced Manufacturing Capital Equipment and Analytical Solutions Group products in their respective region. The Advanced Manufacturing Capital Equipment and Analytical Solutions Group segments both have sales in each region. Accordingly, total geographical sales include sales from multiple reportable segments.

A reconciliation of segment assets to consolidated total assets as of December 31, 2011 and 2010 is as follows:

	2011	2010
Total segment assets	\$ 274,526	\$294,610
Cash and cash equivalents and investments	573,392	431,933
Other current assets	44,856	26,352
Property, plant and equipment, net	72,487	68,976
Goodwill and intangible assets, net	141,127	141,763
Other assets	12,266	18,779
Consolidated Total Assets	<u>\$1,118,654</u>	<u>\$982,413</u>

Worldwide Product Information

In addition, because the Product Groups' segment information above does not reflect worldwide sales of the Company's products, the Company groups its products into four groups of similar products based upon the similarity of the products. Worldwide net sales for each group of products are as follows:

	<u>2011</u>	<u>2010</u>
Instruments and Control Products	\$348,735	\$373,909
Power and Reactive Gas Products	327,151	343,827
Vacuum Products	81,782	78,819
Analytical Solutions Group Products	64,849	56,559
Total net revenues	<u>\$822,517</u>	<u>\$853,114</u>

Sales of Instruments and Control Products, Power and Reactive Gas Products and Vacuum Products are included in the Company's Advanced Manufacturing Capital Equipment Products segment as well as in the foreign sales and service operations as the products are sold through the foreign sales and service operations in their respective regions. Sales of the Analytical Solutions Group Products are included in the Analytical Solutions Group segment as well as in the foreign sales and service operations as the products are sold through the foreign sales and service operations in their respective regions.

Geographic

Information about the Company's operations in different geographic regions is presented in the tables below. Net sales to unaffiliated customers are based on the location in which the sale originated. Transfers between geographic areas are negotiated transfer prices and have been eliminated from consolidated net sales.

	<u>2011</u>	<u>2010</u>
Geographic net revenues		
United States	\$391,122	\$484,139
Japan	106,003	118,537
Europe	115,362	96,545
Asia	<u>210,030</u>	<u>153,893</u>
	<u>\$822,517</u>	<u>\$853,114</u>
Long-lived assets (1)		
United States	\$ 56,760	\$ 54,840
Japan	3,908	4,273
Europe	5,437	4,970
Asia	<u>8,374</u>	<u>8,597</u>
	<u>\$ 74,479</u>	<u>\$ 72,680</u>

Major Customers

Revenues from one customer accounted for 14% and 16% of sales for 2011 and 2010, respectively. Revenues from semiconductor capital equipment and semiconductor device manufacturers accounted for 61% and 64% of sales for 2011 and 2010, respectively.