MATERION Corp
Form 10-K
February 29, 2012
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UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Form 10-K

(Mark One)

x **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the Fiscal Year Ended December 31, 2011

OR

¨ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the Transition Period from to

Commission File Number 1-15885

MATERION CORPORATION

(Exact name of Registrant as specified in its charter)

Ohio	34-1919973
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
6070 Parkland Blvd., Mayfield Heights, Ohio	44124
(Address of principal executive offices)	(Zip Code)

Registrant s telephone number, including area code

216-486-4200

Securities registered pursuant to Section 12(b) of the Act:

Title of Each Class	Name of Each Exchange on Which Registered
Common Stock, no par value	New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act:

None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ¨ No x

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ¨ No x

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes x No ¨

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes x No ¨

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§ 229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant s knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ¨

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of large accelerated filer, accelerated filer and smaller reporting company in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer x	Accelerated filer ¨
Non-accelerated filer ¨ (Do not check if a smaller reporting company)	Smaller reporting company ¨

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ¨ No x

The aggregate market value of Common Stock, no par value, held by non-affiliates of the registrant (based upon the closing sale price on the New York Stock Exchange) on July 1, 2011 was $759,586,247.

As of February 14, 2012, there were 20,412,182 common shares, no par value, outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the proxy statement for the annual meeting of shareholders to be held on May 2, 2012 are incorporated by reference into Part III.

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MATERION CORPORATION

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Year Ended December 31, 2011

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Forward-looking Statements

Portions of the narrative set forth in this document that are not statements of historical or current facts are forward-looking statements. Our actual future performance may materially differ from that contemplated by the forward-looking statements as a result of a variety of factors. These factors include, in addition to those mentioned elsewhere herein:

The global economy;

The condition of the markets which we serve, whether defined geographically or by segment, with the major market segments being: consumer electronics, industrial components and commercial aerospace, defense and science, energy, medical, automotive electronics, telecommunications infrastructure and appliance;

Changes in product mix and the financial condition of customers;

Actual sales, operating rates and margins for 2012;

Our success in developing and introducing new products and new product ramp-up rates;

Our success in passing through the costs of raw materials to customers or otherwise mitigating fluctuating prices for those materials, including the impact of fluctuating prices on inventory values;

Our success in integrating acquired businesses, including EIS Optics Limited;

Our success in implementing our strategic plans and the timely and successful completion and start-up of any capital projects, including the new primary beryllium facility in Elmore, Ohio;

The availability of adequate lines of credit and the associated interest rates;

The impact of the results of acquisitions on our ability to achieve fully the strategic and financial objectives related to these acquisitions;

Other financial factors, including the cost and availability of raw materials (both base and precious metals), physical inventory valuations, metal financing fees, tax rates, exchange rates, pension costs and required cash contributions and other employee benefit costs, energy costs, regulatory compliance costs, the cost and availability of insurance, and the impact of the Company s stock price on the cost of incentive compensation plans;

The uncertainties related to the impact of war, terrorist activities and acts of God;

Changes in government regulatory requirements and the enactment of new legislation that impacts our obligations and operations;

The conclusion of pending litigation matters in accordance with our expectation that there will be no material adverse effects;

The timing and ability to achieve further efficiencies and synergies resulting from our name change and product line alignment under the Materion name and Materion brand; and

The risk factors set forth elsewhere in Item 1A of this Form 10-K.

Item 1. BUSINESS

Materion Corporation, through its wholly owned subsidiaries, is an integrated producer of high performance advanced engineered materials used in a variety of electrical, electronic, thermal and structural applications. Our products are sold into numerous markets, including consumer electronics, industrial components and commercial aerospace, defense and science, energy, medical, automotive electronics, telecommunications infrastructure and appliance. As of December 31, 2011, we had 3,015 employees.

In the first quarter 2011, we changed the name of our Company to Materion Corporation. The names of all of our active subsidiaries were changed at that time and each subsidiary has Materion as part of its name. The legal and ownership structure of our subsidiaries remains unchanged.

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This name change did not alter our senior management structure or how the chief decision maker evaluates the performance of our businesses. We continue to have the same four reportable segments as we had previously with no change in their make up, although the names of those segments have changed. Advanced Material Technologies and Services has been revised to Advanced Material Technologies, Specialty Engineered Alloys is now known as Performance Alloys, Beryllium and Beryllium Composites has been shortened to Beryllium and Composites, and Engineered Material Systems has been changed to Technical Materials.

All Other includes our parent company expenses, other corporate charges and the operating results of Materion Services Inc., a wholly owned subsidiary that provides administrative and financial oversight services to our other businesses on a cost-plus basis. Corporate employees not included in a reportable segment totaled 100 as of December 31, 2011.

We use our Investor Relations web site, http://materion.com/, as a channel for routine distribution of important information, including news releases, analyst presentations, and financial information. We post filings as soon as reasonably practicable after they are electronically filed with, or furnished to, the SEC, including our annual, quarterly, and current reports on Forms 10-K, 10-Q, and 8-K; our proxy statements; and any amendments to those reports or statements. All such postings and filings are available on our Investor Relations web site free of charge. In addition, this web site allows investors and other interested persons to sign up to automatically receive e-mail alerts when we post news releases and financial information on our web site. The SEC also maintains a web site, www.sec.gov, that contains reports, proxy and information statements, and other information regarding issuers who file electronically with the SEC. The content on any web site referred to in this Annual Report on Form 10-K is not incorporated by reference into this Form 10-K unless expressly noted.

ADVANCED MATERIAL TECHNOLOGIES

Sales for this segment were $1,051.8 million, or 69% of total sales, in 2011; $879.0 million, or 67% of total sales, in 2010 and $460.8 million, or 64% of total sales, in 2009. As of December 31, 2011, Advanced Material Technologies had 1,566 employees.

Advanced Material Technologies manufactures precious, non-precious and specialty metal products, including vapor deposition targets, frame lid assemblies, clad and precious metal preforms, high temperature braze materials, ultra-fine wire, advanced chemicals, optics, performance coatings and microelectronic packages. These products are used in wireless, semiconductor, photonic, hybrid and other microelectronic applications within the consumer electronics and telecommunications infrastructure markets. Other key markets for these products include medical, defense and science, energy and industrial components. Advanced Material Technologies also has metal cleaning operations and in-house refineries that allow for the reclaim of precious metals from internally generated or customers scrap.

Advanced Material Technologies products are sold directly from its facilities throughout the U.S., Asia and Europe, as well as through direct sales offices and independent sales representatives throughout the world. Principal competition includes companies such as Sumitomo Metals, Heraeus Inc., Praxair, Inc., Honeywell International Inc., Solar Applied Materials Technology Corp., Tanaka Holding Co., Ltd., Johnson Matthey plc and a number of smaller regional and national suppliers.

Advanced Material Technologies Sales and Backlog

The backlog of unshipped orders for Advanced Material Technologies as of December 31, 2011, 2010 and 2009 was $75.5 million, $55.4 million and $51.3 million, respectively. Backlog is generally represented by purchase orders that may be terminated under certain conditions. We expect that substantially all of our backlog of orders for this segment at December 31, 2011 will be filled during 2012.

Sales are made to over 3,200 customers. Government sales accounted for less than 1% of the sales volume in 2011, 2010 and 2009. Sales outside the United States, principally to Europe and Asia, accounted for

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approximately 16% of sales in 2011, 19% of sales in 2010 and 29% of sales in 2009. Other segment reporting and geographic information is contained in Note M to the Consolidated Financial Statements, which can be found in Item 8 of this Form 10-K and which is incorporated herein by reference.

Advanced Material Technologies Research and Development

Active research and development programs seek new product compositions and designs as well as process innovations. Expenditures for research and development for Advanced Material Technologies amounted to $6.7 million in 2011, $4.0 million in 2010 and $3.2 million in 2009. A staff of 51 scientists, engineers and technicians was employed in this effort as of year-end 2011.

PERFORMANCE ALLOYS

Sales for this segment were $335.3 million, or 22% of total sales, in 2011; $293.8 million, or 23% of total sales, in 2010 and $172.5 million, or 24% of total sales, in 2009. As of December 31, 2011, Performance Alloys had 913 employees.

Performance Alloys manufactures and sells three main product families: strip products, bulk products and beryllium hydroxide. Strip products, the larger of the product families, include thin gauge precision strip and thin diameter rod and wire. These copper and nickel beryllium alloys provide a combination of high conductivity, high reliability and formability for use as connectors, contacts, switches, relays and shielding. Major markets for strip products include consumer electronics, telecommunications infrastructure, automotive electronics, appliance and medical. Performance Alloys primary direct competitor in strip form beryllium alloys is NGK Insulators, Ltd. of Nagoya, Japan, with subsidiaries in the United States and Europe. Performance Alloys also competes with alloy systems manufactured by Global Brass and Copper, Inc., Wieland Electric, Inc., Stolberger Metallwerke GmbH, Nippon Mining, PMX Industries, Inc. and also with other generally less expensive materials, including phosphor bronze, stainless steel and other specialty copper and nickel alloys, which are produced by a variety of companies around the world.

Bulk products are copper and nickel-based alloys manufactured in plate, rod, bar, tube and other customized forms that, depending upon the application, may provide superior strength, corrosion or wear resistance, thermal conductivity or lubricity. While the majority of bulk products contain beryllium, a growing portion of bulk products sales is from non-beryllium-containing alloys as a result of product diversification efforts. Applications for bulk products include oil and gas drilling components, bearings, bushings, welding rods, plastic mold tooling, and undersea telecommunications housing equipment. In the area of bulk products, in addition to NGK Insulators, Ltd., Performance Alloys competes with several smaller regional producers such as International Beryllium Corp., Ningxia Orient Tantalum in China and LeBronze Industriel in Europe.

Beryllium hydroxide is produced at our milling operations in Utah from our bertrandite mine and purchased beryl ore. The hydroxide is used primarily as a raw material input for strip and bulk products and, to a lesser extent, by the Beryllium and Composites segment. External sales of hydroxide from the Utah operations were less than 4% of Performance Alloys total sales in each of the three most recent years. We sell beryllium hydroxide to NGK Insulators, Ltd.

Strip and bulk products are manufactured at facilities in Ohio and Pennsylvania and are distributed internationally through a network of company-owned service centers and outside distributors and agents.

Performance Alloys Sales and Backlog

The backlog of unshipped orders for Performance Alloys as of December 31, 2011, 2010 and 2009 was $99.6 million, $98.9 million and $68.6 million, respectively. Backlog is generally represented by purchase orders that may be terminated under certain conditions. We expect that substantially all the backlog of orders for this segment as of December 31, 2011 will be filled during 2012.

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Sales are made to over 1,600 customers. Performance Alloys had government sales accounting for less than 1% of segment sales in 2011, 2010 and 2009. Sales outside the United States, principally to Europe and Asia, accounted for approximately 51% of sales in 2011, 58% of sales in 2010 and 57% of sales in 2009. Other segment reporting and geographic information is contained in Note M to the Consolidated Financial Statements, which can be found in Item 8 of this Form 10-K and which is incorporated herein by reference.

Performance Alloys Research and Development

Active research and development programs seek new product compositions and designs as well as process innovations. Expenditures for research and development amounted to $2.1 million in 2011, $1.8 million in 2010 and $2.2 million in 2009. A staff of seven scientists, engineers and technicians was employed in this effort as of year-end 2011.

BERYLLIUM AND COMPOSITES

Sales for this segment were $60.6 million, or 4% of total sales, in 2011; $61.9 million, or 5% of total sales, in 2010 and $47.0 million, or 7% of total sales, in 2009. As of December 31, 2011, Beryllium and Composites had 245 employees.

Beryllium and Composites manufactures beryllium-based metals and metal matrix composites in rod, sheet, foil and a variety of customized forms at the Elmore, Ohio and Fremont, California facilities. These materials are used in applications that require high stiffness and/or low density and they tend to be premium-priced due to their unique combination of properties. This segment also manufactures beryllia ceramics produced at the Tucson, Arizona facility. Defense and science is the largest market for Beryllium and Composites, while other markets served include industrial components and commercial aerospace, medical, energy and telecommunications infrastructure. Products are also sold for acoustics and optical scanning applications. A majority of defense sales are made to contractors and subcontractors instead of directly to government entities. In June 2008, we announced that Materion Brush Inc. had entered into an agreement with the Department of Defense to construct a $100 million primary beryllium facility. Construction of this facility, which was designed to produce primary beryllium, the feedstock material used to produce beryllium metal products, was completed in 2011. In the first quarter of 2012, the start-up of the facility was ongoing, but the Company expects the facility to reach capacity levels in excess of 2012 demand levels. Beryllium-containing products are sold throughout the world through a direct sales organization and through company-owned and independent distribution centers. While Beryllium and Composites is the only domestic producer of metallic beryllium, it competes primarily with designs utilizing other materials including metals, metal matrix and organic composites. Electronic components utilizing beryllia are used in the telecommunications infrastructure, medical, industrial components and commercial aerospace, and defense and science markets. These products are distributed through direct sales and independent sales agents. Direct competitors include American Beryllia Inc. and CBL Ceramics Limited.

Beryllium and Composites Sales and Backlog

The backlog of unshipped orders for Beryllium and Composites as of December 31, 2011, 2010 and 2009 was $16.9 million, $26.1 million and $38.1 million, respectively. Backlog is generally represented by purchase orders that may be terminated under certain conditions. We expect that substantially all of our backlog of orders for this segment at December 31, 2011 will be filled during 2012.

Sales are made to over 300 customers. Government sales accounted for less than 1% of Beryllium and Composites sales in 2011, and less than 2% of sales in 2010 and 2009. Sales outside the United States, principally to Europe and Asia, accounted for approximately 28% of sales in 2011, and 22% of sales in 2010 and 2009. Other segment reporting and geographic information is contained in Note M to the Consolidated Financial Statements, which can be found in Item 8 of this Form 10-K and which is incorporated herein by reference.

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Beryllium and Composites Research and Development

Active research and development programs seek new product compositions and designs as well as process innovations. Expenditures for research and development amounted to $2.2 million in 2011, $1.3 million in 2010 and $1.4 million in 2009. A staff of eight scientists, engineers and technicians was employed in this effort as of year-end 2011. Some research and development projects, expenditures for which are not material, were externally sponsored and funded.

TECHNICAL MATERIALS

Sales for this segment were $78.7 million, or 5% of total sales, in 2011; $67.5 million, or 5% of total sales, in 2010 and $34.7 million, or 5% of total sales, in 2009. As of December 31, 2011, Technical Materials had 191 employees.

Technical Materials capabilities include clad inlay and overlay metals, precious and base metal electroplated systems, electron beam welded systems, contour profiled systems and solder-coated metal systems. These specialty strip metal products provide a variety of thermal, electrical or mechanical properties from a surface area or particular section of the material. Our cladding and plating capabilities allow for a precious metal or other base metals to be applied in continuous strip form only where it is needed, reducing the material cost to the customer as well as providing design flexibility and performance. Major applications for these products include connectors, contacts, power lead frames and semiconductors while the largest markets are automotive electronics and consumer electronics. The energy and medical markets offer further growth opportunities. Technical Materials products are manufactured at our Lincoln, Rhode Island facility and sold directly and through its sales representatives. Technical Materials major competitors include Heraeus Inc., AMI Doduco, Inc. and other North American continuous strip plating companies.

Technical Materials Sales and Backlog

The backlog of unshipped orders for Technical Materials as of December 31, 2011, 2010 and 2009 was $16.3 million, $16.3 million and $7.6 million, respectively. Backlog is generally represented by purchase orders that may be terminated under certain conditions. We expect that substantially all of our backlog of orders for this segment at December 31, 2011 will be filled during 2012.

Sales are made to over 200 customers. Technical Materials did not have any sales to the government for 2011, 2010 or 2009. Sales outside the United States, principally to Europe and Asia, accounted for approximately 27% of Technical Materials sales in 2011, 26% of sales in 2010 and 21% of sales in 2009. Other segment reporting and geographic information is contained in Note M to the Consolidated Financial Statements, which can be found in Item 8 of this Form 10-K and which is incorporated herein by reference.

Technical Materials Research and Development

Active research and development programs seek new product compositions and designs as well as process innovations. Expenditures for research and development for Technical Materials were nominal in 2011, 2010 and 2009.

GENERAL

Availability of Raw Materials

The principal raw materials we use are aluminum, beryllium, cobalt, copper, gold, nickel, palladium, platinum, ruthenium, silver and tin. Ore reserve data can be found in Item 7 of this Form 10-K. The availability of these raw materials, as well as other materials used by us, is adequate and generally not dependent on any one supplier.

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Patents and Licenses

We own patents, patent applications and licenses relating to certain of our products and processes. While our rights under the patents and licenses are of some importance to our operations, our business is not materially dependent on any one patent or license or on all of our patents and licenses as a group.

Regulatory Matters

We are subject to a variety of laws that regulate the manufacture, processing, use, handling, storage, transport, treatment, emission, release and disposal of substances and wastes used or generated in manufacturing. For decades we have operated our facilities under applicable standards of inplant and outplant emissions and releases. The inhalation of airborne beryllium particulate may present a health hazard to certain individuals.

Standards for exposure to beryllium are under review by the U.S. Occupational Safety and Health Administration (OSHA) and by other governmental and private standard-setting organizations. One result of these reviews will likely be more stringent worker safety standards. Some organizations, such as the California Occupational Health and Safety Administration and the American Conference of Governmental Industrial Hygienists, have adopted standards that are more stringent than the current standards of OSHA. The development, proposal or adoption of more stringent standards may affect buying decisions by the users of beryllium-containing products. If the standards are made more stringent and/or our customers or other downstream users decide to reduce their use of beryllium-containing products, our results of operations, liquidity and financial condition could be materially adversely affected. The impact of this potential adverse effect would depend on the nature and extent of the changes to the standards, the cost and ability to meet the new standards, the extent of any reduction in customer use and other factors. The magnitude of this potential adverse effect cannot be estimated.

Executive Officers of the Registrant

Name	Age	Positions and Offices
Richard J. Hipple	59	*Chairman of the Board, President and Chief Executive Officer*. In May 2006, Mr. Hipple was named Chairman of the Board and Chief Executive Officer of Materion Corporation. He had served as President since May 2005. He was Chief Operating Officer from May 2005 until May 2006. Mr. Hipple served as President of Performance Alloys from May 2002 until May 2005. He joined the Company in July 2001 as Vice President of Strip Products, Performance Alloys and served in that position until May 2002. Prior to joining Materion, Mr. Hipple was President of LTV Steel Company, a business unit of the LTV Corporation (integrated steel producer and metal fabricator). Prior to running LTV s steel business, Mr. Hipple held numerous leadership positions in engineering, operations, strategic planning, sales and marketing and procurement since 1975 at LTV. Mr. Hipple has served on the Board of Directors of Ferro Corporation since 2007 and as its Lead Director since April 2010.
John D. Grampa	64	*Senior Vice President Finance and Chief Financial Officer*. Mr. Grampa was named Senior Vice President Finance and Chief Financial Officer in December 2006. Prior to that, he had served as Vice President Finance and Chief Financial Officer since November 1999 and as Vice President Finance since October 1998. Prior to that, he had served as Vice President, Finance for the Worldwide Materials Business of Avery Dennison Corporation (producer of pressure sensitive materials, office products, labels and other converted products) since March 1994 and held other various positions at Avery Dennison Corporation from 1984.

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Name	Age	Positions and Offices
Daniel A. Skoch	62	*Senior Vice President Administration*. Mr. Skoch was named Senior Vice President Administration in July 2000. Prior to that time, he had served as Vice President Administration and Human Resources since March 1996. He had served as Vice President Human Resources since July 1991 and prior to that time, he was Corporate Director Personnel.
Gregory R. Chemnitz	54	*Vice President, General Counsel*. Mr. Chemnitz joined Materion Corporation in September 2007 as its Vice President, General Counsel. Prior to that, he had served in various roles in the Law Department at Avery Dennison Corporation beginning in 1992, including most recently, as Assistant General Counsel, Americas, where he had responsibility for the legal affairs of Avery Dennison s business units in North and South America.

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Item 1A. RISK FACTORS

Our business, financial condition, results of operations and cash flows can be affected by a number of factors, including, but not limited to, those set forth below and elsewhere in this Form 10-K, any one of which could cause our actual results to vary materially from recent results or from our anticipated future results. Therefore, an investment in us involves some risks, including the risks described below. The risks discussed below are not the only risks that we may experience. If any of the following risks occur, our business, results of operations or financial condition could be negatively impacted.

Natural disasters, equipment failures, work stoppages, bankruptcies and other unexpected events may lead our customers to curtail production or shut down their operations.

Our customers manufacturing operations are subject to conditions beyond their control, including raw material shortages, natural disasters, interruptions in electrical power or other energy services, equipment failures, bankruptcies, work stoppages due to strikes or lockouts, including those affecting the automotive industry, which is one of our major markets, and other unexpected events. For example, the tsunami that hit Japan in March 2011 caused wide-scale destruction of the Tohoku region and led most manufacturers in the area, most notably those in the automotive and consumer electronics markets, to slow or halt production. Similar events could also affect other suppliers to our customers. Such events could cause our customers to curtail production or to shut down a portion or all of their operations, which could reduce their demand for our products and reduce our sales.

Unexpected events and natural disasters at our mine could increase the cost of operating our business.

A portion of our production costs at our mine are fixed regardless of current operating levels. Our operating levels are subject to conditions beyond our control that may increase the cost of mining for varying lengths of time. These conditions include, among other things, fire, natural disasters, pit wall failures and ore processing changes. Our mining operations also involve the handling and production of potentially explosive materials. It is possible that an explosion could result in death and injuries to employees and others and material property damage to third parties and us. Any explosion could expose us to adverse publicity or liability for damages and materially adversely affect our operations. Any of these events could increase our cost of operations.

We have a limited number of manufacturing facilities, and damage to those facilities could interrupt our operations, increase our costs of doing business and impair our ability to deliver our products on a timely basis.

Some of our facilities are interdependent. For instance, our manufacturing facility in Elmore, Ohio relies on our mining operation for its supply of beryllium hydroxide used in production of most of its beryllium-containing materials. Additionally, our Reading, Pennsylvania; Fremont, California and Tucson, Arizona manufacturing facilities are dependent on materials produced by our Elmore, Ohio manufacturing facility and our Wheatfield, New York manufacturing facility is dependent on our Buffalo, New York manufacturing facility. See Item 2 of this Form 10-K. The destruction or closure of any of our manufacturing facilities or our mine for a significant period of time as a result of fire, explosion, act of war or terrorism or other natural disaster or unexpected event may interrupt our manufacturing capabilities, increase our capital expenditures and our costs of doing business and impair our ability to deliver our products on a timely basis. In such an event, we may need to resort to an alternative source of manufacturing or to delay production, which could increase our costs of doing business. Our property damage and business interruption insurance may not cover all of our potential losses and may not continue to be available to us on acceptable terms, if at all.

Equipment failures and other unexpected events at our facilities may lead to manufacturing curtailments or shutdowns.

The manufacturing processes that take place in our mining operation, as well as in our manufacturing facilities, depend on critical pieces of equipment. This equipment may, on occasion, be out of service because of unanticipated failure, and some equipment is not readily available or replaceable. In addition to equipment

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failures, our facilities are also subject to the risk of loss due to unanticipated events such as fires, explosions or other disasters. Material plant shutdowns or reductions in operations could harm our ability to fulfill our customers demands, which could harm our sales and cause our customers to find other suppliers. Further, remediation of any interruption in production capability may require us to make large capital expenditures, which may have a negative effect on our profitability and cash flows. Our business interruption insurance may not cover all of the lost revenues associated with interruptions in our manufacturing capabilities.

Future terrorist attacks and other acts of violence or war may directly harm our operations.

Future terrorist attacks or other acts of violence or war may directly impact our facilities. For example, our Elmore, Ohio facility is located near, and derives power from, a nuclear power plant, which could be a target for a terrorist attack. In addition, future terrorist attacks, related armed conflicts or prolonged or increased tensions in the Middle East or other regions of the world could cause consumer confidence and spending to decrease, decreasing demand for consumer goods that contain our products. Further, when the United States armed forces are involved in active hostilities or large-scale deployments, defense spending tends to focus more on meeting the physical needs of the troops, and planned expenditures on weapons and other systems incorporating our products may be reduced or deferred. Any of these occurrences could also increase volatility in the United States and worldwide financial markets, which could negatively impact our sales.

Many of our manufacturing facilities are dependent on single source energy suppliers, and interruption in energy services may cause manufacturing curtailments or shutdowns.

Many of our manufacturing facilities depend on one source for electric power and for natural gas. For example, Utah Power is the sole supplier of electric power to the processing facility for our mining operations in Utah. A significant interruption in service from our energy suppliers due to equipment failures, terrorism or any other cause may result in substantial losses that are not fully covered by our business interruption insurance. Any substantial unmitigated interruption of our operations due to these conditions could harm our ability to meet our customers demands and reduce our sales.

If the price of electrical power, fuel or other energy sources increases, our operating expenses could increase significantly.

We have numerous milling and manufacturing facilities and a mining operation, which depend on electrical power, fuel or other energy sources. See Item 2 of this Form 10-K. Our operating expenses are sensitive to changes in electricity prices and fuel prices, including natural gas prices. Prices for electricity and natural gas may increase and can fluctuate widely with availability and demand levels from other users. During periods of peak usage, supplies of energy may be curtailed, and we may not be able to purchase energy at historical market rates. While we have some long-term contracts with energy suppliers, we are exposed to fluctuations in energy costs that can affect our production costs. Although we enter into forward-fixed price supply contracts for natural gas and electricity for use in our operations, those contracts are of limited duration and do not cover all of our fuel or electricity needs. Price increases in fuel and electricity costs, such as those increases which may occur from climate change legislation or other environmental mandates, may increase our cost of operations.

The availability and prices of some raw materials we use in our manufacturing operations fluctuate, and increases in raw material costs can adversely affect our operating results and our financial condition.

We manufacture advanced engineered materials using various precious and non-precious metals, including aluminum, beryllium, cobalt, copper, gold, nickel, palladium, platinum, ruthenium, silver and tin. The availability of, and prices for, these raw materials are subject to volatility and are influenced by worldwide economic conditions, speculative action, world supply and demand balances, inventory levels, availability of substitute metals, the U.S. dollar exchange rate, production costs of United States and foreign competitors, anticipated or perceived shortages and other factors. Precious metal prices, including prices for gold and silver,

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have increased significantly in recent years. These higher prices can cause adjustments to our inventory carrying values, whether a result of quantity discrepancies, normal manufacturing losses, differences in scrap rates, theft or other factors, to have a greater impact on our profitability and cash flows. Also, the price of our products has increased in tandem with the rising metal prices, as a result of pass through, which could deter customers from purchasing our products and adversely affect our sales.

Further, we maintain some precious metals on a consigned inventory basis. The owners of the precious metals charge a fee that fluctuates based on the market price of those metals and other factors. A significant increase in the market price of precious metals or the consignment fee could increase our financing costs, which could increase our operating costs.

We are dependent on the successful scheduled start-up of our new primary beryllium facility for our future supply of pure beryllium.

We have partnered with the Department of Defense to share in the cost of a new beryllium plant for primary beryllium feedstock. We may experience quality and/or production issues in the start-up of this new facility. Any prolonged delays of pure beryllium production from the new plant could negatively impact our business.

The project is behind the original planned completion date. Construction is now complete, and we are successfully in low-rate initial production, but any delay in further transitioning the operation to run at required production levels could negatively impact our business as would unexpected quality problems in qualifying the new beryllium feedstock in our beryllium metal product lines.

The availability of competitive substitute materials for beryllium-containing products may reduce our customers demand for these products and reduce our sales.

In certain product applications, we compete with manufacturers of non-beryllium-containing products, including organic composites, metal alloys or composites, titanium and aluminum. Our customers may choose to use substitutes for beryllium-containing products in their products for a variety of reasons, including, among other things, the lower costs of those substitutes, the health and safety concerns relating to these products and the risk of litigation relating to beryllium-containing products. If our customers use substitutes for beryllium-containing products in their products, the demand for our beryllium-containing products may decrease, which could reduce our sales.

The markets for our products are experiencing rapid changes in technology.

We operate in markets characterized by rapidly changing technology and evolving customer specifications and industry standards. New products may quickly render an existing product obsolete and unmarketable. For example, for many years thermal and mechanical performance have been at the forefront of device packaging for wireless communications infrastructure devices. In recent years, a tremendous effort has been put into developing simpler packaging solutions composed of copper and other similar components. Our growth and future results of operations depend in part upon our ability to enhance existing products and introduce newly developed products on a timely basis that conform to prevailing and evolving industry standards, meet or exceed technological advances in the marketplace, meet changing customer specifications, achieve market acceptance and respond to our competitors products.

The process of developing new products can be technologically challenging and requires the accurate anticipation of technological and market trends. We may not be able to introduce new products successfully or do so on a timely basis. If we fail to develop new products that are appealing to our customers or fail to develop products on time and within budgeted amounts, we may be unable to recover our research and development costs, which could adversely affect our margins and profitability.

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Our products are deployed in complex applications and may have errors or defects that we find only after deployment.

Our products are highly complex, designed to be deployed in complicated applications and may contain undetected defects, errors or failures. Although our products are generally tested during manufacturing, prior to deployment, they can only be fully tested when deployed in specific applications. For example, we sell beryllium-copper alloy strip products in a coil form to some customers, who then stamp the alloy for its specific purpose. On occasion, it is not until such customer stamps the alloy that a defect in the alloy is detected. Consequently, our customers may discover errors after the products have been deployed. The occurrence of any defects, errors, or failures could result in installation delays, product returns, termination of contracts with our customers, diversion of our resources, increased service and warranty costs and other losses to our customers, end users or to us. Any of these occurrences could also result in the loss of, or delay in, market acceptance of our products and could damage our reputation, which could reduce our sales.

Our lengthy and variable sales and development cycle makes it difficult for us to predict if and when a new product will be sold to customers.

Our sales and development cycle, which is the period from the generation of a sales lead or new product idea through the development of the product and the recording of sales, may typically take up to two or three years, making it very difficult to forecast sales and results of operations. Our inability to accurately predict the timing and magnitude of sales of our products, especially newly introduced products, could affect our ability to meet our customers product delivery requirements or cause our results of operations to suffer if we incur expenses in a particular period that do not translate into sales during that period, or at all. In addition, these failures would make it difficult to plan future capital expenditure needs and could cause us to fail to meet our cash flow requirements.

Our business could be adversely impacted if we fail to adequately address security issues.

We have taken measures to protect the integrity of our technology infrastructure and the privacy of confidential information. However, our technology infrastructure is potentially vulnerable to physical or electronic break-ins, viruses or similar problems. If a person or entity circumvents our security measures, they could jeopardize the security of confidential information stored on our systems, misappropriate proprietary information or cause interruptions in our operations. We may be required to make substantial additional investments and efforts to protect against or remedy security breaches. Security breaches that result in access to confidential information could damage our reputation and expose us to a risk of loss or liability.

A portion of our revenue is derived from the sale of defense-related products through various contracts and subcontracts. These contracts may be suspended or canceled, which could have an adverse impact on our revenues.

In 2011, 11% of our revenue was derived from sales to customers in the defense and science market. A portion of these customers operate under contracts with the U.S. Government, which are vulnerable to termination at any time, for convenience or default. Some of the reasons for cancellation include, but are not limited to, budgetary constraints or re-appropriation of government funds, timing of contract awards, violations of legal or regulatory requirements, and changes in political agenda. If cancellations were to occur, it would result in a reduction in our revenue. For example, various projects, including the F-22 fighter aircraft, have been canceled, which had, and will have, a negative impact on our revenue. In addition, any decreases in the defense budget that may be enacted could have an adverse impact on some of our operations.

The global economic crisis that began in 2008 had, and any additional negative or uncertain worldwide economic conditions may have, a negative impact on our financial performance.

The global economic crisis adversely affected the global economy. Some customers experienced difficulty in obtaining adequate financing due to the disruption in the credit markets, which has impacted our sales. Our

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exposure to bad debt losses may also increase if customers are unable to pay for products previously ordered. This recession has also caused higher unemployment rates globally, which could have an adverse impact on demand for consumer electronics, which comprised 38% of our sales in 2011. Any additional negative or uncertain financial and macroeconomic conditions may have a significant adverse impact on our sales, profitability and results of operations. For example, if the current economic crisis in Europe escalates, it could trigger a global economic downturn similar to the one experienced in 2008 and 2009. This could have a negative impact on our sales to Europe, which accounted for approximately 10% of our sales in 2011.

The businesses of many of our customers are subject to significant fluctuations as a result of the cyclical nature of their industries and their sensitivity to general economic conditions, which could adversely affect their demand for our products and reduce our sales and profitability.

A substantial number of our customers are in the consumer electronics, telecommunications infrastructure, defense and science, industrial components and commercial aerospace, automotive electronics and appliance industries. Each of these industries is cyclical in nature, influenced by a combination of factors which could have a negative impact on our business, including, among other things, periods of economic growth or recession, strength or weakness of the U.S. dollar, the strength of the consumer electronics, automotive electronics and computer industries and the rate of construction of telecommunications infrastructure equipment and government spending on defense.

Also, in times when growth rates in our markets slow down, there may be temporary inventory adjustments by our customers that may negatively affect our business.

Because we experience seasonal fluctuations in our sales, our quarterly results will fluctuate, and our annual performance will be affected by the fluctuations.

We expect seasonal patterns to continue, which may cause our quarterly results to fluctuate. For example, the Christmas season generates increased demand from our customers that manufacture consumer products. If our revenue during any quarter were to fall below the expectations of investors or securities analysts, our share price could decline, perhaps significantly. Unfavorable economic conditions, lower than normal levels of demand and other occurrences in any of the other quarters could also harm our results of operations. For example, toward the end of 2010, customers were building inventory in anticipation of increased demand, whereas in the same period of 2011 demand decreased because our customers had excess inventory.

We conduct our sales and distribution operations on a worldwide basis and are subject to the risks associated with doing business outside the United States.

We sell to customers outside of the United States from our United States and international operations. We have been and are continuing to expand our geographic reach in Europe and Asia. Shipments to customers outside of the United States accounted for approximately 25% of our sales in 2011, 28% in 2010 and 35% in 2009. We anticipate that international shipments will account for a significant portion of our sales for the foreseeable future. Revenue from international operations (principally Europe and Asia) amounted to approximately 14% of our sales in 2011, 17% in 2010 and 24% in 2009. There are a number of risks associated with international business activities, including:

- burdens to comply with multiple and potentially conflicting foreign laws and regulations, including export requirements, tariffs and other barriers, environmental health and safety requirements and unexpected changes in any of these factors;
- difficulty in obtaining export licenses from the United States Government;
- political and economic instability and disruptions, including terrorist attacks;
- disadvantages of competing against companies from countries that are not subject to U.S. laws and regulations, including the Foreign Corrupt Practices Act (FCPA);

potentially adverse tax consequences due to overlapping or differing tax structures; and

fluctuations in currency exchange rates.

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Any of these risks could have an adverse effect on our international operations by reducing the demand for our products or reducing the prices at which we can sell our products, which could result in an adverse effect on our business, financial position, results of operations or cash flows.

In addition, we could be adversely affected by violations of the FCPA and similar worldwide anti-bribery laws. The FCPA and similar anti-bribery laws in other jurisdictions generally prohibit companies and their intermediaries from making improper payments to non-U.S. officials for the purpose of obtaining or retaining business. Our policies mandate compliance with these anti-bribery laws. We operate in many parts of the world that have experienced governmental corruption to some degree and, in certain circumstances, strict compliance with anti-bribery laws may conflict with local customs and practices. We cannot assure you that our internal controls and procedures always will protect us from the reckless or criminal acts committed by our employees or agents. If we are found to be liable for FCPA violations, we could suffer from criminal or civil penalties or other sanctions, which could have a material adverse effect on our business.

We are subject to fluctuations in currency exchange rates, which may negatively affect our financial performance.

A significant portion of our sales is conducted in international markets and priced in currencies other than the U.S. dollar. Revenues from customers outside of the United States (principally Europe and Asia) amounted to 25% of sales in 2011, 28% in 2010 and 35% in 2009. A significant part of these international sales are priced in currencies other than the U.S. dollar. Significant fluctuations in currency values relative to the U.S. dollar may negatively affect our financial performance. In the past, fluctuations in currency exchange rates, particularly for the euro and the yen, have impacted our sales, margins and profitability. The fair value of our net asset relating to outstanding foreign currency contracts was $1.4 million at December 31, 2011, indicating that the average hedge rates were favorable compared to the actual year-end market exchange rates. While we may hedge our currency transactions to mitigate the impact of currency price volatility on our earnings, hedging activities may not be successful. For example, hedging activities may not cover the Company s complete exposure which could have an unfavorable impact on our results of operations.

We may not be able to complete our acquisition strategy or successfully integrate acquired businesses.

We have been active over the last several years in pursuing niche acquisitions. For example, during 2011 we completed the acquisition of EIS Optics Limited. We intend to continue to consider further growth opportunities through the acquisition of assets or companies and routinely review acquisition opportunities. We cannot predict whether we will be successful in pursuing any acquisition opportunities or what the consequences of any acquisition would be. Future acquisitions may involve the expenditure of significant funds and management time. Depending upon the nature, size and timing of future acquisitions, we may be required to raise additional financing, which may not be available to us on acceptable terms. Further, we may not be able to successfully integrate any acquired business with our existing businesses or recognize any expected advantages from any completed acquisition.

In addition, there may be liabilities that we fail, or are unable, to discover in the course of performing due diligence investigations on the assets or companies we have already acquired or may acquire in the future. We cannot assure that rights to indemnification by the sellers of these assets or companies to us, even if obtained, will be enforceable, collectible or sufficient in amount, scope or duration to fully offset the possible liabilities associated with the business or property acquired. Any such liabilities, individually or in the aggregate, could have a materially adverse effect on our business, financial condition and results of operations.

The terms of our indebtedness may restrict our operations, including our ability to pursue our growth and acquisition strategies.

The terms of our credit facilities contain a number of restrictive covenants, including restrictions in our ability to, among other things, borrow and make investments, acquire other businesses and consign additional

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precious metals. These covenants could adversely affect our business by limiting our ability to plan for or react to market conditions or to meet our capital needs, as well as adversely affect our ability to pursue our growth, acquisition strategies and other strategic initiatives.

Our failure to comply with the covenants contained in the terms of our indebtedness could result in an event of default, which could materially and adversely affect our operating results and our financial condition.

The terms of our credit facilities require us to comply with various covenants, including financial covenants. If the global economic downturn returns, it could have a material adverse impact on our earnings and cash flow, which could adversely affect our ability to comply with our financial covenants and could limit our borrowing capacity. Our ability to comply with these covenants depends, in part, on factors over which we may have no control. A breach of any of these covenants could result in an event of default under one or more of the agreements governing our indebtedness which, if not cured or waived, could give the holders of the defaulted indebtedness the right to terminate commitments to lend and cause all amounts outstanding with respect to the indebtedness to be due and payable immediately. Acceleration of any of our indebtedness could result in cross defaults under our other debt instruments. Our assets and cash flow may be insufficient to fully repay borrowings under all of our outstanding debt instruments if some or all of these instruments are accelerated upon an event of default, in which case we may be required to seek legal protection from our creditors.

A major portion of our bank debt consists of variable-rate obligations, which subjects us to interest rate fluctuations.

Our credit facilities are secured by substantially all of our assets (other than non-mining real property and certain other assets). Our working capital line of credit includes variable-rate obligations, which expose us to interest rate risks. If interest rates increase, our debt service obligations on our variable-rate indebtedness would increase even if the amount borrowed remained the same, resulting in a decrease in our net income. We have developed a hedging program to manage the risks associated with interest rate fluctuations, but our program may not effectively eliminate all of the financial exposure associated with interest rate fluctuations. Additional information regarding our market risks is contained in Item 7A of this Form 10-K.

We may be unable to access the financial markets on favorable terms.

The inability to raise capital on favorable terms, particularly during times of uncertainty in the financial markets, could impact our ability to sustain and grow our business and would increase our capital costs. In particular, the substantial volatility in world capital markets due to the global economic crisis has had a significant negative impact on the global financial markets.

We rely on access to financial markets as a significant source of liquidity for capital requirements not satisfied by cash on hand or operating cash flow. Our access to the financial markets could be adversely impacted by various factors, including:

- changes in credit markets that reduce available credit or the ability to renew existing credit facilities on acceptable terms;
- a deterioration of our credit;
- a deterioration in the financial condition of the banks with which we do business;
- extreme volatility in our markets that increases margin or credit requirements; and
- the collateral pledge of substantially all of our assets in connection with our existing indebtedness, which limits our flexibility in raising additional capital.

These factors have adversely impacted our access to the financial markets from time to time. Negative or uncertain global economic conditions may make it difficult for us to access the credit market and to obtain financing or refinancing, as the case may be, to the extent necessary, on satisfactory terms or at all.

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A lower interest rate environment coupled with less than expected investment performance may require us to increase our pension liability and expense, which may require us to fund a portion of our pension obligations and divert funds from other potential uses.

We provide defined benefit pension plans to eligible employees. Our pension expense and our required contributions to our pension plans are directly affected by the value of plan assets, the projected rate of return on plan assets, the actual rate of return on plan assets and the actuarial assumptions we use to measure our defined benefit pension plan obligations, including the rate at which future obligations are discounted to a present value, or the discount rate. As of January 1, 2012, for pension accounting purposes, we assumed a 7.75% rate of return on pension assets.

Lower investment performance of our pension plan assets resulting from a decline in the stock market could significantly increase the deficit position of our plans. Should the pension asset return fall below our expectations, it is likely that future pension expenses would increase. The actual return on our plan assets for the year ended December 31, 2011 was a loss of approximately 4%.

We establish the discount rate used to determine the present value of the projected and accumulated benefit obligation at the end of each year based upon the available market rates for high quality, fixed income investments. An increase in the discount rate would reduce the future pension expense and, conversely, a lower discount rate would raise the future pension expense.

Based on current guidelines, assumptions and estimates, including stock market prices and interest rates, we anticipate that we will be required to make a cash contribution of approximately $11.2 million to our pension plan in 2012. If our current assumptions and estimates are not correct, a contribution in 2012 and beyond may be greater than our current or future projections.

We cannot predict whether changing market or economic conditions, regulatory changes or other factors will further increase our pension expenses or funding obligations, diverting funds we would otherwise apply to other uses.

Our expenditures for post-retirement health benefits could be materially higher than we have predicted if our underlying assumptions prove to be incorrect.

We also provide post-retirement health benefits to eligible employees. Our retiree health expense is directly affected by the assumptions we use to measure our retiree health plan obligations, including the assumed rate at which health care costs will increase and the discount rate used to calculate future obligations. For retiree health accounting purposes, we maintained the assumed rate at which health care costs will increase for the next year at 8% for both December 31, 2011 and December 31, 2010. In addition, we have assumed that this health care cost increase trend rate will decline to 5% by 2019.

Assumed health care cost trend rates have a significant effect on the amounts reported for the health care plans. A one percentage point increase in assumed health care cost trend rates would have increased the post-employment benefit obligation by $0.8 million at December 31, 2011.

We cannot predict whether changing market or economic conditions, regulatory changes or other factors will further increase our retiree health care expenses or obligations, diverting funds we would otherwise apply to other uses.

Utilizing precious metal in the manufacturing process creates challenges in physical inventory valuations that may impact earnings.

We manufacture precious, non-precious and specialty metal products and also have metal cleaning operations and in-house refineries that allow for the reclaim of precious metals from internally generated or customer scrap. We refine that scrap through our internal operations and externally through outside vendors.

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When taking periodic physical inventories, we reconcile the actual precious metals to what was estimated prior to the physical inventory. Those estimates are based on assays or samples of precious metals taken during the refining process. If those estimates are inaccurate, we may have an inventory long (more physical precious metal than what we had estimated) or short (less physical precious metal than what we had estimated). These fluctuations could have a material impact on our financial statements and may impact earnings. For example, we reported a net inventory valuation loss of $3.6 million in the fourth quarter 2011 as a result of the reconciliation of the amount of metal on hand with amounts financed. Higher precious metal prices may magnify the value of any inventory long or short.

Our holding company structure causes us to rely on funds from our subsidiaries.

We are a holding company and conduct substantially all our operations through our subsidiaries. As a holding company, we are dependent upon dividends or other intercompany transfers of funds from our subsidiaries. The payment of dividends and other payments to us by our subsidiaries may be restricted by, among other things, applicable corporate and other laws and regulations, agreements of the subsidiaries and the terms of our current and future indebtedness.

Our financial results are likely to be negatively impacted by an impairment of goodwill should our shareholder equity exceed our market capitalization for a number of quarters.

A goodwill impairment charge may be triggered by a reduction in actual and projected cash flows, which could be negatively impacted by the market price of our common shares. Our goodwill balance at December 31, 2011 was $84.0 million. Any required non-cash impairment charge could significantly reduce this balance and have a material impact on our reported financial position and results of operations.

Changes in laws or regulations or the manner of their interpretation or enforcement could adversely impact our financial performance and restrict our ability to operate our business or execute our strategies.

New laws or regulations, or changes in existing laws or regulations or the manner of their interpretation or enforcement, could increase our cost of doing business and restrict our ability to operate our business or execute our strategies. This includes, among other things, the possible taxation under U.S. law of certain income from foreign operations, compliance costs and enforcement under the Dodd-Frank Wall Street Reform and Consumer Protection Act, and costs associated with complying with the Patient Protection and Affordable Care Act of 2010 and the regulations promulgated thereunder.

We are exposed to lawsuits in the normal course of business, which could harm our business.

During the ordinary conduct of our business, we may become involved in certain legal proceedings, including those involving product liability claims, third-party lawsuits relating to exposure to beryllium and claims against us of infringement of intellectual property rights of third parties. Due to the uncertainties of litigation, we can give no assurance that we will prevail at the conclusion of future claims. Certain of these matters involve types of claims that, if they result in an adverse ruling to us, could give rise to substantial liability which could have a material adverse effect on our business, operating results or financial condition.

We are presently uninsured for beryllium-related claims where the claimants first exposure to beryllium occurred on or after January 1, 2008, and we have not undertaken to estimate the impact of such claims, which have yet to be asserted. In addition, some jurisdictions preclude insurance coverage for punitive damage awards. Accordingly, our profitability could be adversely affected if any current or future claimants obtain judgments for any uninsured compensatory or punitive damages. Further, an unfavorable outcome or settlement of a pending beryllium case or adverse media coverage could encourage the commencement of additional similar litigation.

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Health issues, litigation and government regulations relating to our beryllium operations could significantly reduce demand for our products, limit our ability to operate and adversely affect our profitability.

If exposed to respirable beryllium fumes, dusts or powder, some individuals may demonstrate an allergic reaction to beryllium and may later develop a chronic lung disease known as chronic beryllium disease, or CBD. Some people who are diagnosed with CBD do not develop clinical symptoms at all. In others, the disease can lead to scarring and damage of lung tissue, causing clinical symptoms that include shortness of breath, wheezing and coughing. Severe cases of CBD can cause disability or death.

Further, some scientists claim there is evidence of an association between beryllium exposure and lung cancer, and certain standard-setting organizations have classified beryllium and beryllium compounds as human carcinogens.

The health risks relating to exposure to beryllium have been, and will continue to be, a significant issue confronting the beryllium-containing products industry. The health risks associated with beryllium have resulted in product liability claims, employee and third-party lawsuits and increased levels of scrutiny by federal, state, foreign and international regulatory authorities. This scrutiny includes regulatory decisions relating to the approval or prohibition of the use of beryllium-containing materials for various uses. Concerns over CBD and other potential adverse health effects relating to beryllium, as well as concerns regarding potential liability from the use of beryllium, may discourage our customers use of our beryllium-containing products and significantly reduce demand for our products. In addition, adverse media coverage relating to our beryllium-containing products could damage our reputation or cause a decrease in demand for beryllium-containing products, which could adversely affect our profitability.

Our bertrandite ore mining and beryllium-related manufacturing operations and some of our customers businesses are subject to extensive health and safety regulations that impose, and will continue to impose, significant costs and liabilities, and future regulation could increase those costs and liabilities or effectively prohibit production or use of beryllium-containing products.

Our customers and we are subject to laws regulating worker exposure to beryllium. Standards for exposure to beryllium are under review by OSHA, the Department of Energy and by other governmental and private standard-setting organizations. One result of these reviews will likely be more stringent worker safety standards. Some organizations, such as the California Occupational Health and Safety Administration and the American Conference of Governmental Industrial Hygienists, have adopted standards that are more stringent than the current standards of OSHA. The development, proposal or adoption of more stringent standards may affect buying decisions by the users of beryllium-containing products. If the standards are made more stringent and/or our customers or other downstream users decide to reduce their use of beryllium-containing products, our results of operations, liquidity and financial condition could be materially adversely affected. The impact of this potential adverse effect would depend on the nature and extent of the changes to the standards, the cost and ability to meet the new standards, the extent of any reduction in customer use and other factors. The magnitude of this potential adverse effect cannot be estimated.

Our bertrandite ore mining and manufacturing operations are subject to extensive environmental regulations that impose, and will continue to impose, significant costs and liabilities on us, and future regulation could increase these costs and liabilities or prevent production of beryllium-containing products.

We are subject to a variety of governmental regulations relating to the environment, including those relating to our handling of hazardous materials and air and wastewater emissions. Some environmental laws impose substantial penalties for non-compliance. Others, such as the federal Comprehensive Environmental Response, Compensation, and Liability Act, or CERCLA, impose strict, retroactive and joint and several liability upon entities responsible for releases of hazardous substances. Bertrandite ore mining is also subject to extensive governmental regulation on matters such as permitting and licensing requirements, plant and wildlife protection, reclamation and restoration of mining properties, the discharge of materials into the environment and the effects that mining has on groundwater quality and availability. Future requirements could impose on us significant

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additional costs or obligations with respect to our extraction, milling and processing of ore. If we fail to comply with present and future environmental laws and regulations, we could be subject to liabilities or our operations could be interrupted. In addition, future environmental laws and regulations could restrict our ability to expand our facilities or extract our bertrandite ore deposits. These environmental laws and regulations could also require us to acquire costly equipment, obtain additional financial assurance, or incur other significant expenses in connection with our business, which would increase our costs of production.

Item 1B. UNRESOLVED STAFF COMMENTS

None.

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Item 2. PROPERTIES

We operate manufacturing plants, service and other facilities throughout the world. During 2011, we made effective use of our productive capacities at our principal facilities. We believe that the quality and production capacity of our facilities is sufficient to maintain our competitive position for the foreseeable future. Information as of December 31, 2011, with respect to our significant facilities that are owned or leased, and the respective segments in which they are included, is set forth below:

Location	Owned or Leased	Approximate Number of Square Feet
Corporate and Administrative Offices		
Mayfield Heights, Ohio (2)(3)(5)	Leased	53,800
Manufacturing Facilities		
Albuquerque, New Mexico (1)	Owned/Leased	13,000/80,200
Bloomfield, Connecticut (1)	Leased	23,400
Brewster, New York (1)	Leased	75,000
Buellton, California (1)	Leased	35,000
Buffalo, New York (1)	Owned	97,000
Delta, Utah (2)	Owned	86,000
Elmore, Ohio (2)(3)	Owned/Leased	681,000/191,000
Fremont, California (3)	Leased	16,800
Limerick, Ireland (1)	Leased	18,000
Lincoln, Rhode Island (4)	Owned/Leased	130,000/11,000
Lorain, Ohio (2)	Owned	55,000
Louny, Czech Republic (1)	Leased	19,800
Milwaukee, Wisconsin (1)	Owned/Leased	99,000/7,300
Newburyport, Massachusetts (1)	Owned	30,000
Reading, Pennsylvania (2)	Owned	123,000
Santa Clara, California (1)	Leased	5,800
Shanghai, China (1)	Leased	101,400
Singapore (1)	Leased	30,000
Subic Bay, Philippines (1)	Leased	5,000
Suzhou, China (1)	Leased	22,400
Taipei, Taiwan (1)	Leased	11,500
Tucson, Arizona (3)	Owned	53,000
Tyngsboro, Massachusetts (1)	Leased	38,000
Westford, Massachusetts (1)	Leased	75,000
Wheatfield, New York (1)	Owned	35,000
Windsor, Connecticut (1)	Leased	34,700
Service and Distribution Centers		
Elmhurst, Illinois (2)	Leased	28,500
Fukaya, Japan (2)(3)(4)	Owned	35,500
Reading, England (1)(2)(3)(4)	Leased	9,700
Singapore (2)(3)(4)	Leased	2,500
Stuttgart, Germany (2)(4)	Leased	24,800
Tokyo, Japan (1)(2)(3)(4)	Leased	7,200
Warren, Michigan (2)	Leased	34,500

(1) Advanced Material Technologies
(2) Performance Alloys
(3) Beryllium and Composites
(4) Technical Materials
(5) All Other

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In addition to the above, the Company holds certain mineral rights on 7,500 acres in Juab County, Utah from which the beryllium-bearing ore, bertrandite, is mined by the open pit method. A portion of these mineral rights are held under lease. Ore reserve data can be found in Item 7 of this Form 10-K.

Item 3. LEGAL PROCEEDINGS

Our subsidiaries and our holding company are subject, from time to time, to a variety of civil and administrative proceedings arising out of our normal operations, including, without limitation, product liability claims, health, safety and environmental claims and employment-related actions. Among such proceedings are the cases described below.

Beryllium Claims

As of December 31, 2011, our subsidiary, Materion Brush Inc., was not a defendant in any proceedings brought by plaintiffs alleging that they had contracted, or had been placed at risk of contracting, beryllium sensitization or chronic beryllium disease or other lung conditions as a result of exposure to beryllium. Plaintiffs in beryllium cases sought recovery under negligence and various other legal theories and sought compensatory and punitive damages, in many cases of an unspecified sum. Spouses of some plaintiffs claimed loss of consortium.

As of December 31, 2010, there were two beryllium cases (involving six plaintiffs) and as of December 31, 2011, there were no pending beryllium cases. During 2011:

one case (involving one plaintiff) was voluntarily dismissed by the plaintiff; and

one case (involving five plaintiffs) was settled by three plaintiffs, and two spouses dismissed their consortium claims.

The Company has some insurance coverage, subject to an annual deductible.

Item 4. MINE SAFETY DISCLOSURES

Information concerning mine safety violations or other regulatory matters required by Section 1503(a) of the Dodd-Frank Wall Street Reform and Consumer Protection Act and Item 104 of Regulation S-K (17 CFR 229.104) is included in Exhibit 95 to this Form 10-K.

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PART II

Item 5. MARKET FOR THE REGISTRANT S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Market Information and Dividends

The Company s common shares are listed on the New York Stock Exchange under the symbol MTRN . As of February 14, 2012, there were 1,315 shareholders of record. The table below is a summary of the range of market prices with respect to common shares during each quarter of fiscal years 2011 and 2010. We did not pay any dividends in 2011 or 2010. We have no current intention to declare dividends on our common shares in the near term. Our current policy is to retain all funds and earnings for use in the operation and expansion of our business.

	Stock Price Range	
Fiscal Quarters	**High**	**Low**
2011		
First	**$ 44.94**	**$ 33.99**
Second	**44.00**	**33.02**
Third	**42.05**	**21.11**
Fourth	**30.15**	**19.53**
2010		
First	$ 22.95	$ 15.80
Second	30.33	18.75
Third	29.23	18.24
Fourth	40.11	27.62

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Performance Graph

The following graph sets forth the cumulative shareholder return on our common shares as compared to the cumulative total return of the S&P SmallCap 600 Index and the Russell 2000 Index as Materion Corporation is a component of these indices.

	2006	2007	2008	2009	2010	2011
Materion Corporation	$ 100	$ 110	$ 38	$ 55	$ 114	$ 72
S&P SmallCap 600	$ 100	$ 100	$ 69	$ 86	$ 109	$ 110
Russell 2000	$ 100	$ 98	$ 65	$ 83	$ 105	$ 105

The above graph assumes that the value of our common shares and each index was $100 on December 31, 2006 and that all dividends, if paid, were reinvested.

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Item 6. SELECTED FINANCIAL DATA
Materion Corporation and Subsidiaries

(Thousands except per share amounts)	2011	2010	2009	2008	2007
For the year					
Net sales	**$ 1,526,730**	$ 1,302,314	$ 715,186	$ 909,711	$ 955,709
Cost of sales	**1,311,409**	1,079,666	623,764	757,836	759,037
Gross margin	**215,321**	222,648	91,422	151,875	196,672
Operating profit (loss)	**57,078**	73,633	(19,485)	28,071	84,465
Interest expense - net	**2,812**	2,665	1,299	1,995	1,760
Income (loss) before income taxes	**54,266**	70,968	(20,784)	26,076	82,705
Income taxes (benefit)	**14,287**	24,541	(8,429)	7,719	29,420
Net income (loss)	**39,979**	46,427	(12,355)	18,357	53,285
Earnings per share of common stock:					
Basic	**1.96**	2.29	(0.61)	0.90	2.62
Diluted	**1.93**	2.25	(0.61)	0.89	2.59
Depreciation and amortization	**44,194**	35,932	32,369	34,204	24,296
Capital expenditures	**28,187**	42,314	44,173	35,515	26,429
Mine development expenditures	**560**	11,348	808	421	7,121
Year-end position					
Working capital	**231,230**	208,365	140,482	189,899	216,253
Ratio of current assets to current liabilities	**2.7 to 1**	2.4 to 1	2.0 to 1	2.8 to 1	2.9 to 1
Property and equipment:					
At cost	**$ 753,326**	$ 719,953	$ 665,361	$ 635,266	$ 583,961
Cost less depreciation and impairment	**263,813**	265,868	227,766	207,254	186,175
Total assets	**772,103**	735,410	621,953	581,897	550,551
Long-term liabilities	**184,143**	157,571	131,630	116,524	69,140
Long-term debt	**40,463**	38,305	8,305	10,605	10,005
Shareholders equity	**405,982**	384,356	339,859	347,097	353,714
Weighted-average number of shares of stock outstanding:					
Basic	**20,365**	20,282	20,191	20,335	20,320
Diluted	**20,754**	20,590	20,191	20,543	20,612

Capital expenditures shown above include amounts spent under government contracts for which reimbursements were received from the government in the amounts of $5.4 million in 2011, $21.9 million in 2010, $28.2 million in 2009, $8.0 million in 2008 and $3.5 million in 2007.

See Notes to Consolidated Financial Statements.

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Item 7. MANAGEMENT S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

OVERVIEW

We are an integrated producer of high performance advanced engineered materials used in a variety of electrical, electronic, thermal and structural applications. Our products are sold into numerous markets, including consumer electronics, industrial components and commercial aerospace, defense and science, energy, medical, automotive electronics, telecommunications infrastructure and appliance.

Sales were $1.5 billion in 2011, a 17% increase over 2010 and a record high. The sales growth was mainly due to higher metal pass-through prices, improved pricing in portions of our business and stronger demand from certain markets, including industrial components and commercial aerospace, energy, automotive electronics and medical. However, demand from the consumer electronics market, which was strong in the first half of 2011, weakened in the second half of the year while defense sales were relatively flat and our overall sales and order entry rate slowed down in the fourth quarter of the year.

Gross margin of $215.3 million in 2011 was $7.3 million lower than in 2010 as the benefits from the higher sales volume were more than offset by the ongoing costs associated with the start-up of our new beryllium facility, inventory valuation differences and other manufacturing issues.

We generated an operating profit of $57.1 million in 2011 compared to an operating profit of $73.6 million in 2010. In addition to the lower gross margin, operating profit in 2011 was adversely affected by higher expenses, including an increase in consignment fees largely due to higher metal market prices and an increase in research and development expenses caused by higher activity levels.

Legal, administrative and marketing expenses also increased in 2011 due to the successful completion of the rebranding of our company under the Materion name. This program was designed to improve the coordination and effectiveness of our marketing efforts and improve our profitability over the long term.

We incurred additional expenses in 2011 as a result of our acquisition of all of the outstanding stock of EIS Optics Limited (EIS) for $23.9 million in cash in the fourth quarter 2011. EIS produces optical filters and related materials at its manufacturing operations in China. The acquisition expanded the market breadth of our precision optics product line and was consistent with our overall strategy to acquire niche operations for our advanced material business. As part of that strategy, we had previously acquired Barr Associates, Inc. (Barr) in the fourth quarter 2009 followed closely by our acquisition of Academy Corporation (Academy) in the first quarter 2010.

Our effective tax rate was lower in 2011 than in 2010 due to differences in a number of credits and adjustments, which offset a portion of the impact of the decreased operating profit on net income. Diluted earnings per share were $1.93 in 2011 and $2.25 in 2010.

Cash flow from operations was a strong $56.8 million in 2011, an improvement from the cash flow from operations of $31.0 million generated in 2010. This cash flow was sufficient to fund capital expenditures, the acquisition of EIS and a net reduction in debt during the year. The debt-to-debt-plus-equity ratio was 17% at year-end 2011 compared to 18% at year-end 2010. Various debt and metal consignment agreements were renegotiated during 2011 resulting in expanded capacity and more flexible terms.

With the favorable resolution of two chronic beryllium disease lawsuits in the first quarter 2011, there were no beryllium disease claims pending against us as of year-end 2011.

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RESULTS OF OPERATIONS

(Millions except per share amounts)	2011	2010	2009
Net sales	$ 1,526.7	$ 1,302.3	$ 715.2
Operating profit (loss)	57.1	73.6	(19.5)
Income (loss) before income taxes	54.3	71.0	(20.8)
Net income (loss)	40.0	46.4	(12.4)
Diluted earnings per share	1.93	2.25	(0.61)

Sales of $1.5 billion were $224.4 million, or 17%, higher than sales of $1.3 billion in 2010. Order entry rates started 2011 off fairly strong but weakened in the second half of the year and in the fourth quarter in particular. The order entry rate was 15% lower in the second half of 2011 than in the first half of the year. The total order entry level in 2011, while higher than the order entry in 2010, was approximately 3% lower than sales in 2011. Sales in 2010 were $587.1 million, or 82%, higher than sales of $715.2 million in 2009. Demand from the majority of our key markets improved in 2010 over 2009 and overall demand remained strong throughout 2010 as order entry levels exceeded sales in each quarter of 2010.

Consumer electronics is our largest market and accounted for 38% of our total sales in 2011. While sales to this market grew approximately 10% in 2011 over 2010, this growth was mainly due to higher metal pass-through prices. Excluding the metal price difference, consumer electronics sales declined as sales softened in the second half of 2011 due to downstream inventory reductions and other factors. Consumer electronics sales increased significantly in 2010 over 2009 as a result of an increase in consumer spending due to the improved economic conditions as well as the development of new applications that utilize our materials, including smart phones and LEDs.

Defense and science market sales, which were 11% of our total sales in 2011, were relatively unchanged in 2011 as compared to 2010. Our traditional beryllium-based defense business softened in the second half of the year due to government spending delays and push-outs. Demand for precision optics for defense and science applications also slowed down in 2011. This softness was offset by mild growth in defense applications from other portions of the business. Defense and science sales grew in 2010 over 2009 as a result of improved demand for beryllium-based applications as well as inclusion of a full year of Barr s sales.

Sales to the *industrial components and commercial aerospace market* were 11% of our total sales in 2011 and contributed to the growth in sales in each of the last two years. Sales of x-ray windows for industrial applications have grown over the last two years. Commercial aerospace sales also have improved as have sales of materials for heavy equipment and other industrial applications.

Energy market sales, which accounted for approximately 8% of our total sales in 2011, grew at a double-digit rate in 2011 over 2010 largely due to strengthening demand for our traditional oil and gas materials. Materials for solar energy, fuel cells and other alternative energy applications contributed to the growth in 2011 as did architectural glass applications.

Automotive electronics sales also grew at a double-digit rate in 2011 over 2010 after nearly doubling in 2010 over 2009. Demand in the domestic and European markets has remained solid over the past two years. Automotive electronics sales were approximately 5% of total sales in both 2011 and 2010.

Sales to the *medical market* improved in 2011 over 2010 after being relatively unchanged in 2010 from 2009. In 2010, we temporarily lost sales to a key medical application customer as a result of lower manufacturing yields. Process improvements were implemented and shipments to the customer resumed in 2011. Market and product development efforts also led to improved sales to other customers in the medical market in 2011. Medical market sales were 5% of our total sales in 2011.

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The acquisition of EIS in the fourth quarter 2011 had a minor impact on our sales in 2011, while the acquisitions of Barr and Academy accounted for 40% of the sales growth in 2010 over 2009. A large portion of Academy s sales is a precious metal pass-through.

Sales are affected by metal prices as changes in precious metal and a portion of the changes in base metal prices, primarily copper, are passed on to our customers. Metal prices have been quite volatile over the last three years, with various metals reaching near-term or all-time record highs during this time period. The average copper prices for 2011 and 2010 were higher than the respective prior year. Gold and other precious metal prices were also higher on average in 2011 and 2010 than the immediate prior year, although prices softened in the fourth quarter 2011. The net change in metal prices resulted in an estimated $195.6 million increase in sales in 2011 over 2010 and an estimated $103.0 million increase in sales in 2010 over 2009.

Domestic sales were 23% higher in 2011 over 2010 while domestic sales in 2010 were slightly more than double the 2009 level. Domestic sales include the majority of the impact of the higher metal price pass-through between periods. The growth in 2010 over 2009 was also due to the addition of Barr and Academy. International sales, which are included in each of our reportable segments, increased 4% in 2011 from 2010 after improving 48% in 2010 over 2009.

Gross margin was $215.3 million and 14% of sales in 2011 compared to $222.6 million and 17% of sales in 2010. In 2009, gross margin was $91.4 million and 13% of sales.

Differences in the volumes sold by the four segments between 2011 and 2010 resulted in a net increase of $9.2 million in gross margin in 2011. The change in product mix, however, was unfavorable partially due to the lower sales of higher margin-generating traditional beryllium products for defense applications and strip products to the consumer electronics market in 2011 compared to 2010. Improved pricing in portions of our business provided a margin benefit in 2011.

We continued working on the installation and start-up of our new beryllium facility during 2011 at the Elmore, Ohio plant site. We incurred additional operating and material costs and generated manufacturing inefficiencies as a result of the delayed start-up of the facility totaling an estimated $5.3 million in 2011.

The gross margin in 2011 was also reduced as a result of net unfavorable inventory valuation adjustments recorded in the fourth quarter 2011 within the Advanced Material Technologies segment of $3.6 million.

Higher scrap rates on certain nickel-based products reduced margins by approximately $3.1 million in 2011 as compared to 2010. Progress was made on improving yields and reducing scrap on these products during the fourth quarter 2011.

We recorded a $4.4 million benefit to gross margin in 2010 as a result of the depletion of a last-in, first-out (LIFO) inventory layer. There was no corresponding benefit recorded in 2011 or 2009.

We estimate that the incremental margin generated by the higher sales volumes, including the sales from Barr and Academy, accounted for approximately 76% of the gross margin improvement in 2010 over 2009. Manufacturing efficiencies, in part due to the increased production levels, and cost control efforts also contributed to the margin growth in 2010. Factory labor, other direct manufacturing costs and manufacturing overhead costs did not increase proportionately with the increase in sales in 2010. The overall change in product mix was favorable between 2010 and 2009, while pricing improvements were made in portions of our business. Yield losses and other inventory valuation adjustments at certain operations had a minor negative impact on overall margins in 2010.

We implemented various cost-saving initiatives beginning in the fourth quarter 2008 and during 2009 in response to the weakening order entry rate at that time. These initiatives included a reduction in work force,

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reduced wage and compensation levels, elimination of overtime (and a reduction in regular work hours in some cases), reduced discretionary spending and the cancellation or deferral of various projects and initiatives. These efforts helped to offset the negative margin and profit impact of the lower sales volume in 2009.

With the improved sales volumes subsequent to 2009, wage levels were restored and various resources, including manpower and services, were added back as needed to support the current and projected volumes. However, the total employment level, excluding the impact of the acquisitions, at year-end 2011 and 2010 was still lower than the third quarter 2008 employment level (which was just prior to when the global economic crisis began to significantly impact our business).

The annual expense on the domestic defined benefit pension plan was $8.0 million in 2011, $5.8 million in 2010 and $3.2 million in 2009 (which included a one-time curtailment gain due to the reduction in the workforce in that year). The increase in the pension expense in 2011 over 2010 was due to a change in the discount rate, the performance of the plan assets and other factors and affected cost of sales, selling, general and administrative expenses and, to a lesser extent, research and development expenses. See Critical Accounting Policies .

Selling, general and administrative (SG&A) expenses totaled $131.4 million (9% of sales) in 2011, $126.5 million (10% of sales) in 2010 and $89.8 million (13% of sales) in 2009.

Legal, administrative and marketing expenses associated with the change of our name to Materion Corporation in the first quarter 2011 totaled $3.9 million in 2011. Costs associated with this program totaled $0.9 million in 2010.

The incentive compensation expense on plans that pay in cash was $7.0 million lower in 2011 than 2010 and $15.2 million higher in 2010 than in 2009. The changes in the annual expense between years were caused primarily by the performance of the individual operations relative to their plans objectives. Stock-based compensation expense, including the expense for stock appreciation rights, restricted stock and performance restricted shares, was $5.0 million in 2011, $4.1 million in 2010 and $3.5 million in 2009. The comparison of stock-based compensation expense between years may be affected by changes in plan design, the number of grants in a given year, actual performance relative to the plans objectives, movement in our stock price, forfeitures, vesting schedules and other factors.

Acquisition-related expenses for legal, accounting and due diligence services associated with the EIS, Academy and Barr transactions totaled $1.8 million in 2011, $0.1 million in 2010 and $0.7 million in 2009. As a result of a change in accounting regulations effective January 1, 2009, acquisition-related expenses must be charged against income as incurred. Previously, these expenses would have been capitalized as part of the cost of the acquisitions.

Expenses incurred by EIS subsequent to its acquisition totaled $1.4 million and contributed to the increase in SG&A expenses in 2011. Approximately 35% of the increase in SG&A expenses in 2010 over 2009 was due to the expenses incurred by Barr and Academy subsequent to their acquisition.

Severance and related costs associated with headcount reductions totaled approximately $0.3 million in 2011, $1.1 million in 2010 and $2.1 million in 2009.

Commissions and various other sales-related expenses were higher in 2011 than in 2010. With the significantly improved sales volumes in 2010 over 2009, a portion of the previously reduced selling and administrative resources were added back during 2010 to support the current and projected growth in the business.

Corporate information technology expenses were $0.7 million higher in 2011 than in 2010 due to an increase in the number of projects and to support the growth in the organization. Corporate environmental, health

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and safety expenses increased $0.7 million in 2011 over 2010 due to various studies undertaken. Other corporate administrative expenses, including legal compliance costs and the costs of initiatives designed to improve efficiencies and profitability over the long term, were higher in 2011 than in 2010. Other corporate expenses were also higher in 2010 than in 2009.

Research and development (R&D) expenses were $11.1 million in 2011, $7.1 million in 2010 and $6.8 million in 2009. While R&D expenses increased $4.0 million in 2011, the expense was less than 1% of sales in each of the last three years. The higher expense in 2011 was due to an increase in activity levels and various special projects. R&D efforts are focused on developing new products and applications as well as continuing improvements in our existing products.

Derivative ineffectiveness expense was $0.6 million in 2010 and $4.9 million in 2009. There was no derivative ineffectiveness recorded in 2011. We secured a copper derivative embedded in a debt obligation in 2009 that served as an economic hedge to changes in the value of our copper inventories. However, the derivative did not qualify as a hedge for accounting purposes and changes in its fair value were recorded against income as ineffectiveness expense. The derivative was in a loss position of $4.9 million as of year-end 2009 as a result of an increase in the market price of copper since the derivative s inception. Forward contracts were secured in 2010 to hedge against further unfavorable changes in the embedded derivative s fair value. The $0.6 million of expense in 2010 was the net unfavorable change in the fair value of these instruments in 2010. The embedded derivative and forward contracts matured during 2010.

Other-net expense was $15.8 million in 2011, $14.8 million in 2010 and $9.5 million in 2009. See Note N to the Consolidated Financial Statements for the details of the major components of other-net expense for each of the three years. The major differences in other-net expense between the years include the following:

The metal consignment fee increased $3.3 million in 2011 over 2010 and $3.2 million in 2010 over 2009 as a result of higher metal prices, increased quantities of metal on hand and the inclusion of Academy s requirements under the consignment lines beginning in 2010.

The Barr purchase agreement included an earn out feature that would require us to make additional payments to the prior owners of Barr based upon Barr s performance against identified benchmarks over the 2010 to 2013 period. The present value of the earn out was estimated to be $1.9 million at the time of the acquisition and was recorded in other long-term liabilities on the Consolidated Balance Sheet as of December 31, 2009. No payments were required to be made in either 2011 or 2010 based upon Barr s actual performance relative to the individual benchmarks for those two years. We determined that the fair value of this liability, based upon the current facts and circumstances and updated projections, should be reduced to zero as of December 31, 2011. We had previously reduced the fair value of the liability to $1.1 million as of December 31, 2010 based upon a review of the facts and circumstances at that time. The $1.1 million benefit from the reduction to the liability in the fourth quarter 2011 and the $0.8 million benefit from the liability reduction taken in the fourth quarter 2010 were recorded as income in those respective periods in accordance with accounting guidelines.

Other-net in 2011 includes a $1.3 million benefit from the favorable resolution of a lawsuit that we had filed against a utility provider for raising our billing rates in violation of our contract. In the fourth quarter 2011, the court ruled in our favor and we received $1.3 million in full satisfaction of our claim.

Foreign currency exchange and translation losses totaled $2.8 million in 2011, $0.8 million in 2010 and $0.7 million in 2009. These losses result from movements in the value of the U.S. dollar versus other currencies, primarily the euro and yen, and the related impact on certain foreign currency denominated assets, liabilities and transactions and the maturity of foreign currency hedge contracts.

We donated our former headquarters building and the associated land to a non-profit organization, which resulted in a write-off of the carrying value of $0.5 million to other-net expense in 2010. The majority of this unfavorable impact on income before income taxes was offset by a favorable income tax adjustment in that year.

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Operating profit was $57.1 million in 2011, a decline of $16.5 million from the operating profit of $73.6 million generated in 2010. The decline resulted from the margin benefit from changes in the sales volume being more than offset by the additional plant start-up costs, other margin issues, higher SG&A expenses, an increase in metal consignment fees and other factors.

Operating profit in 2010 was a $93.1 million improvement over the $19.5 million operating loss in 2009. This improvement was due to the higher margin generated by the increased sales volumes, the favorable impact of the acquisitions and other factors offset in part by an increase in incentive compensation, metal consignment fees, amortization and other expenses.

Interest expense net was $2.8 million in 2011, $2.7 million in 2010 and $1.3 million in 2009. The average outstanding debt levels were similar in 2011 and 2010, while the average effective borrowing rate was slightly higher in 2011 than in 2010, particularly in the second half of 2011. The difference in interest capitalized in association with capital projects between periods was negligible.

The average outstanding debt levels were higher throughout 2010 than 2009 primarily as a result of the Barr and Academy acquisitions and the increase in working capital. Capital lease balances were higher in 2010 than 2009 as well. The impact of the higher debt and capital lease levels on interest expense was partially offset by a lower effective borrowing rate in 2010 than 2009.

Income (loss) before income taxes and ***income tax expense (benefit)*** for each of the past three years were as follows:

(Dollars in millions)	2011	2010	2009
Income (loss) before income taxes	$ 54.3	$ 71.0	$ (20.8)
Income tax expense (benefit)	14.3	24.5	(8.4)
Effective tax (benefit) rate	26.3%	34.6%	(40.6)%

The effects of percentage depletion (a tax benefit resulting from our mining operations), foreign source income and deductions, the production deduction, discrete events and other items were major causes of the differences between the effective and statutory rates in each of the three years. The effect of executive compensation was also a cause for the difference between the effective and statutory rates in 2011 and 2010, while the research and experimentation credit provided a benefit in 2011.

The tax expense in 2011 included net favorable discrete items of $2.0 million due to a combination of a reduction to the tax reserves as a result of the lapse of the statute of limitations, adjustments to the 2010 tax returns that were finalized in the third quarter 2011 and other items.

The tax expense in 2010 included $1.5 million for the reduction of a deferred tax asset as a result of the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act. Beginning in 2013, we will no longer be able to claim an income tax deduction for prescription drug benefits provided to our retirees and reimbursed under the Medicare Part D retiree drug subsidy program. While this tax increase does not take effect until 2013, accounting standards require that the carrying value of a deferred tax asset be adjusted in the period in which legislation changing the applicable tax law is enacted.

The 2010 tax expense also included the unfavorable impact of a net $0.6 million increase in the tax reserves that was recorded in accordance with accounting guidelines. In 2009, the tax benefit was increased by a net $0.7 million reduction in the tax reserves.

See Note P to the Consolidated Financial Statements for a reconciliation of the statutory and effective tax rates.

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Net income was $40.0 million, or $1.93 per share diluted, in 2011 versus $46.4 million, or $2.25 per share diluted, in 2010. In 2009, the net loss was $12.4 million, or $0.61 per share diluted.

Segment Disclosures

In the first quarter 2011, we changed the name of our company from Brush Engineered Materials Inc. to Materion Corporation. The names of all of our active subsidiaries changed as well and each subsidiary now has Materion as part of its name. The legal and ownership structure of our subsidiaries remained unchanged.

This name change did not alter our senior management structure or how the chief operating decision maker evaluates the performance of our businesses. We continue to have the same four reportable segments as we had previously with no change in their make up, although the names of those segments have changed. Advanced Material Technologies and Services has been revised to Advanced Material Technologies, Specialty Engineered Alloys is now known as Performance Alloys, Beryllium and Beryllium Composites has been shortened to Beryllium and Composites, and Engineered Material Systems has been changed to Technical Materials.

Results by segment are shown in Note M to the Consolidated Financial Statements. The All Other column in Note M includes our parent company expenses, other corporate charges and the operating results of Materion Services Inc., a wholly owned subsidiary that provides administrative and financial oversight services to our other businesses on a cost-plus basis.

The All Other column shows an operating loss of $10.1 million in 2011, $8.3 million in 2010 and $9.4 million in 2009. The primary difference between the 2011 and 2010 results was due to the costs associated with the company name change, due diligence and acquisition costs, various corporate initiatives and other factors offset in part by lower incentive compensation and an increase in costs charged out to the business units.

The loss in All Other was lower in 2010 than in 2009 as an increase in corporate spending and higher incentive compensation expense were more than offset by an increase in charges out to the business units and the difference in derivative ineffectiveness between periods.

Advanced Material Technologies

(Millions)	2011	2010	2009
Net sales	$ 1,051.8	$ 879.0	$ 460.8
Operating profit	33.5	39.5	22.6

Advanced Material Technologies manufactures precious, non-precious and specialty metal products, including vapor deposition targets, frame lid assemblies, clad and precious metal preforms, high temperature braze materials, ultra-fine wire, advanced chemicals, optics, performance coatings and microelectronic packages. These products are used in wireless, semiconductor, photonic, hybrid and other microelectronic applications within the consumer electronics and telecommunications infrastructure markets. Other key markets for these products include medical, defense and science, energy and industrial components. Advanced Material Technologies also has metal cleaning operations and in-house refineries that allow for the reclaim of precious metals from internally generated or customers scrap. This segment has domestic facilities in New York, Connecticut, Wisconsin, New Mexico, Massachusetts and California and international facilities in Asia and Europe.

Sales from Advanced Material Technologies were $1.1 billion in 2011, an improvement of $172.8 million, or 20%, over sales of $879.0 million in 2010. Sales in 2010 were $418.2 million, or 91%, higher than sales of $460.8 million in 2009. The sales growth in both years was due to a combination of higher precious metal prices, improved demand from certain markets and product and market development efforts. The acquisitions of Barr and Academy accounted for approximately 56% of the sales growth in 2010 over 2009 while the EIS acquisition had a minor impact on the 2011 sales growth.

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We adjust our selling prices daily to reflect the current cost of the precious and various non-precious metals sold. While a change in the cost of the metal is generally a pass-through to the customer, we generate a margin on our fabrication efforts irrespective of the type of metal used in a given application. On average, the applicable metal prices were higher in 2011 and 2010 than the respective prior years. We estimate that the higher metal price pass-through increased sales by $180.5 million in 2011 over 2010. While the metal price impact was greater than the total sales increase, underlying volumes processed grew in 2011 due to differences in product mix, customer supplied metal and other factors. Higher metal prices accounted for an estimated $90.9 million of the increase in sales in 2010 over 2009.

Sales of vapor deposition targets, lids, wire and other related precious and non-precious metal products for microelectronic applications grew significantly during 2011 over 2010, but the majority of this growth was due to the pass-through of higher metal prices. Sales of these materials to the consumer electronics market for LED, wireless and other handheld device applications, while higher in 2011 than in 2010, slowed down in the second half of 2011 as demand was stagnant. Strong demand for these applications was a key driver in the growth of Advanced Material Technologies sales in 2010 over 2009.

Refining revenue grew in 2011 and 2010 over the immediate prior year in part due to the expansion of our operations, the acquisition of Academy and increased marketing efforts. Refining revenue is also partially a function of the volume of precious metal products sold and the available quantity of metal in the market to be reclaimed.

Sales of advanced chemicals for LED, optics, security, photovoltaic and other applications from the Wisconsin operations grew approximately 5% in 2011 over 2010 after growing 34% in 2010 over 2009. The majority of this growth was due to the expanded use of LED technologies and the development of new applications. However, the growth rate slowed down in the second half of 2011 due to downstream inventory corrections and other factors. Advanced chemical sales for architectural glass applications within the energy market, which are produced through Academy s New Mexico operations, grew at a double-digit rate in 2011 over 2010.

Sales of large area coatings, primarily precision precious metal coated polymer films, improved approximately 50% in 2011 over 2010 after adjusting for the estimated metal price difference. Sales of these products declined approximately 17% in 2010 from 2009. These products are sold primarily into the medical market. Lower manufacturing yields and the inability to hold tolerances resulted in missed sales to a key customer and the loss of a portion of the business to our competitor in 2010. New processes were developed and qualified with the customer and shipment levels improved during 2011. The sales growth in 2011 was also due to product development and share gains with other customers. Large area coatings continued its development work on solar energy and other potential new applications during 2011.

Precision optics sales were slightly higher in 2011 than in 2010 mainly as a result of the acquisition of EIS in the fourth quarter 2011. Optics sales from Barr for the defense and science market declined in 2011 from 2010 due to changes in government spending patterns and budget cutbacks. Sales of precision optics to the medical and other markets improved slightly in 2011 over 2010. Precision optics sales in 2010 were higher than 2009 due to the inclusion of a full year of Barr s results.

Sales of electronic packages, one of this segment s smaller product lines, declined approximately 20% in 2011 from 2010 mainly due to changes in technology (which were anticipated coming into 2011) within the telecommunications infrastructure market. Sales of electronic packages had grown 42% in 2010 over 2009.

Sales for data storage applications, primarily magnetic head materials, had increased in 2010 over 2009 but softened in 2011 back to a similar level as 2009.

Order entry for the Advanced Material Technologies segment was approximately 1% lower than sales in 2011. In 2010, order entry exceeded sales by approximately 4%.

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Gross margins on Advanced Material Technologies sales were $112.2 million (11% of sales) in 2011, $113.3 million (13% of sales) in 2010 and $68.1 million (15% of sales) in 2009.

The net change in volume and product mix shift provided a benefit to gross margin in 2011. This was evident in the increased sales to the medical market and sales of various advanced chemical products, which typically generate higher margins. These benefits were more than offset by higher manufacturing overhead costs, including the costs totaling $1.2 million incurred by EIS, and other factors, which included a net unfavorable inventory valuation adjustment of $3.6 million that was recorded in the fourth quarter 2011 as a result of the reconciliation of the amount of metal on hand with amounts financed. As a result of this inventory loss, we implemented additional control and reconciliation procedures in the first quarter 2012.

The gross margin as a percent of sales was lower in 2011 than in 2010 in part due to the significant increase in the metal price pass-through in sales.

The main cause for the $45.2 million increase in gross margin in 2010 over 2009 was the margin benefit from the higher sales volume from the existing operations as well as from the two acquisitions. This margin benefit was partially offset by the incremental manufacturing overhead costs incurred by Barr and Academy totaling $11.4 million and the increased manufacturing overhead costs incurred by the existing operations of $0.6 million.

The 2010 margin was adversely affected by the decline in the higher margin medical market sales. Approximately 18% of Academy s sales in 2010 were silver investment bars that generate very low margins. These negative mix effects were generally offset by efficiencies and improvements in other areas. Gross margin as a percent of sales declined in 2010 from 2009 largely due to the higher precious metal price pass-through in sales in 2010 and the addition of Academy s sales, which have a very high metal content.

SG&A, R&D and other-net expenses for this segment totaled $78.8 million (7% of sales) in 2011, $73.8 million (8% of sales) in 2010 and $45.5 million (10% of sales) in 2009.

Precious metal consignment fees were $3.2 million higher in 2011 than 2010 and $2.1 million higher in 2010 than 2009 due to the additional quantities of metal on hand (due to the production requirements and the inclusion of Academy s requirements under those lines beginning in 2010) and higher metal prices. The rate charged by the financial institutions was higher in 2011 than in 2010 as well.

Amortization expense was $0.3 million lower in 2011 than in 2010 and $2.3 million higher in 2010 than in 2009. The increase in 2010 was largely due to the acquisitions of Academy and Barr.

Incentive compensation expense was $1.7 million lower in 2011 than in 2010 and $3.9 million higher in 2010 than 2009 due to the difference in performance relative to the plans objectives.

Corporate charges were $2.1 million higher in 2011 than in 2010 and $4.7 million higher in 2010 than 2009. R&D costs increased in each of the last two years in order to support the growth in the business. Various sales-related expenses increased in 2010 to support the higher volumes.

The expenses incurred by EIS subsequent to its acquisition accounted for $1.4 million of the increase in expenses in 2011, while expenses incurred by Academy and Barr accounted for approximately 56% of the increase in expenses in 2010 over 2009.

Operating profit from Advanced Material Technologies was $33.5 million in 2011, a decline of $6.0 million from the operating profit of $39.5 million generated in 2010. The margin benefits from the changes in volumes and mix were more than offset by the fourth quarter inventory valuation adjustment, higher overhead costs and the increase in consignment fees and other expenses.

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The operating profit in 2010 was a $16.9 million improvement over the operating profit of $22.6 million in 2009. This improvement was due to the margin benefit from the higher sales volumes and other factors offset in part by higher expenses. The Barr and Academy acquisitions contributed to the improved profit in this segment in 2010. Operating profit was 3% of sales in 2011, 4% of sales in 2010 and 5% of sales in 2009.

Performance Alloys

(Millions)	2011	2010	2009
Net sales	$ 335.3	$ 293.8	$ 172.5
Operating profit (loss)	27.2	27.2	(32.3)

Performance Alloys manufactures and sells three main product families:

Strip products, the largest of the product families, include thin gauge precision strip and thin diameter rod and wire. These copper and nickel alloys provide a combination of high conductivity, high reliability and formability for use as connectors, contacts, switches, relays and shielding. Major markets for strip products include consumer electronics, telecommunications infrastructure, automotive electronics, appliance and medical;

Bulk products are copper and nickel-based alloys manufactured in plate, rod, bar, tube and other customized forms that, depending upon the application, may provide superior strength, corrosion or wear resistance, thermal conductivity or lubricity. While the majority of bulk products contain beryllium, a growing portion of bulk products sales is from non-beryllium-containing alloys as a result of product diversification efforts. Applications for bulk products include oil and gas drilling components, bearings, bushings, welding rods, plastic mold tooling, and undersea telecommunications housing equipment; and,

Beryllium hydroxide is produced at our milling operations in Utah from our bertrandite mine and purchased beryl ore. The hydroxide is used primarily as a raw material input for strip and bulk products and, to a lesser extent, by the Beryllium and Composites segment.

Strip and bulk products are manufactured at facilities in Ohio and Pennsylvania and are distributed internationally through a network of company-owned service centers and outside distributors and agents.

Sales from Performance Alloys grew 14% from $293.8 million in 2010 to $335.3 million in 2011. Sales in 2010 were $121.3 million, or 70%, higher than sales of $172.5 million in 2009. The sales growth in both years was due to improved demand from key markets (particularly in 2010), higher metal pass-through prices and other price increases.

The order entry rate was 11% lower than sales in 2011 as order entry levels started the year strong but then slowed down in the second half of the year. The slow down in the second half of the year was primarily for strip products. This slow down was mainly due to lower demand from the consumer electronics market, Performance Alloys largest market. Sales to this market declined approximately 13% in 2011 from 2010, with the entire fall-off occurring in the second half of the year. Consumer electronics sales had grown in 2010 over 2009 largely due to the use of our materials in smart phones, PDAs and other hand held devices. Sales of strip products to the appliance market, a smaller market that is primarily in Europe, were also lower in 2011 than in 2010 after growing approximately 50% in 2010 over 2009.

Sales to a number of Performance Alloys other key markets, however, have grown in each of the two most recent years. Automotive electronics sales improved over 20% in 2011 from 2010 due to solid demand in the U.S. and Europe after growing in 2010 over 2009 as sales in the first half of 2009 were weak. Sales to the energy market grew approximately 30% in 2011 over 2010 largely due to the continued strong demand for oil and gas applications. Energy market sales grew in 2010 partially as an aftermath of the Gulf oil disaster in that year as

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customers turned to our products due to their high performance characteristics. Sales to the industrial components and commercial aerospace market improved in 2010 and 2011 driven by increased demand for non-beryllium-containing alloys for heavy equipment and other applications, higher build rates for commercial aircraft that utilize our materials and other factors. Sales to the telecommunications infrastructure market increased approximately 45% in 2011 over 2010 largely as a result of higher bulk product shipments for undersea telecommunications housings.

Strip product volumes shipped declined 7% in 2011 from 2010. Volumes had increased in the first half of the year but then slowed down in the second half of the year. Strip volumes in 2010 grew 56% over the low levels in 2009. Bulk product volumes grew 6% in 2011 over 2010 after growing 70% in 2010 over 2009. Total volumes were slightly lower in 2011 than in 2010.

Average selling prices for strip and bulk products were higher in 2011 than 2010 and higher in 2010 than in 2009.

Copper prices were also higher on average in 2011 and 2010 over the respective prior year and the increased copper price pass-through accounted for an estimated $15.1 million of the sales growth in 2011 and $12.1 million of the sales growth in 2010.

Sales of hydroxide have grown in each of the last two years but remain relatively small at less than 4% of sales in each of the past three years.

The gross margin earned on Performance Alloys sales totaled $74.6 million in 2011 compared to $74.2 million in 2010. Gross margin was 22% of sales in 2011 and 25% of sales in 2010. Gross margin was $9.0 million and only 5% of sales in 2009 largely due to the impact of the global economic crisis during that year.

The higher selling prices, changes in foreign exchange rates and other factors contributed to improved margins, but this benefit was largely offset by an unfavorable change in product mix, higher conversion cost in our extraction mill, additional manufacturing costs on nickel products, differences due to the depletion of a LIFO layer in 2010 and higher overhead costs.

The weaker product mix in 2011 was due to a 20% decline in shipments of higher beryllium-containing strip products compared to 2010. These products generally generate higher margins.

The higher conversion costs at the Utah extraction mill were primarily chemicals and other commodities used for converting the bertrandite ore into beryllium hydroxide.

Lower yields and higher scrap rates resulted in additional rework on certain nickel-containing products in 2011. These operating issues did not affect sales, but raised manufacturing costs and reduced gross margin by approximately $3.1 million in 2011. The majority of the higher costs were incurred in the first nine months of the year as process improvements have been made.

The depletion of a LIFO inventory layer resulted in a net benefit to gross margin of $4.4 million in 2010. This benefit did not repeat in 2011 as no significant LIFO layers were depleted nor was there a comparable benefit in 2009.

The higher sales volume was the largest cause of the improved gross margin in 2010, accounting for an estimated $31.2 million of the increase. Production volumes were also higher in 2010 than in 2009, which, combined with other factors, led to improved manufacturing efficiencies and higher machine utilization rates. Factory labor and other direct manufacturing costs, while higher in 2010 than in 2009, did not increase proportionately with the volume increase, allowing us to leverage our production efforts. Higher selling prices for bulk and strip products also contributed to the margin increase in 2010 over 2009 as did a favorable change in the product mix. Manufacturing overhead costs increased $2.7 million in 2010 over 2009 largely due to increases in maintenance and supply expenses offsetting a decline in utility expenses.

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Total SG&A, R&D and other-net expenses were $47.4 million in 2011, a slight increase over the expense total of $47.0 million in 2010. These expenses totaled $41.3 million in 2009. These expenses were 14% of sales in 2011, 16% of sales in 2010 and 24% of sales in 2009.

R&D expenses increased a modest amount in 2011 over 2010 due to higher activity levels, while foreign currency exchange losses and corporate charges were also higher in 2011 than in 2010. These increases were largely offset by a reduction in the incentive compensation expense, due to differences in the performance levels against the plan targets between years, and the favorable resolution of the lawsuit filed against a utility provider over billing rates. Selling and administrative expenses were relatively unchanged in 2011 from 2010. SG&A, R&D and other-net expenses in 2011 were slightly higher in both the domestic and international portions of the segment.

The increased expense in 2010 on a dollar basis was due to higher incentive compensation (which resulted from the significantly improved operating results), higher commissions (due to the increased sales) and higher corporate costs. These increases were offset in part by a net decline in all of the other expenses incurred by this segment as various cost-reduction efforts implemented during the 2009 downturn remained in place throughout 2010. Closing of the distribution center operation in the United Kingdom in the fourth quarter 2009 also resulted in cost savings in 2010.

Performance Alloys generated an operating profit of $27.2 million in 2011, unchanged from the operating profit generated in 2010 as the margin benefit from the higher sales was offset by the impact of the increased manufacturing cost of nickel products, the non-recurring LIFO inventory benefit recorded in 2010 and other factors. The operating profit in 2010 was an improvement of $59.5 million over the operating loss of $32.3 million in 2009. The increase in operating profit in 2010 was due to the margin generated by the higher sales, manufacturing improvements and improved pricing partially offset by changes in expenses. Operating profit was 8% of sales in 2011 and 9% of sales in 2010.

Beryllium and Composites

(Millions)	2011	2010	2009
Net sales	$ 60.6	$ 61.9	$ 47.0
Operating profit (loss)	(0.8)	10.0	2.1

Beryllium and Composites manufactures beryllium-based metals and metal matrix composites in rod, sheet, foil and a variety of customized forms at its facilities in Ohio and California. These materials are used in applications that require high stiffness and/or low density and they tend to be premium-priced due to their unique combination of properties. This segment also manufactures beryllia ceramics produced at its Arizona facility. Defense and science is the largest market for Beryllium and Composites, while other markets served include industrial components and commercial aerospace, medical, energy and telecommunications infrastructure. Products are also sold for acoustics and optical scanning applications.

Sales from Beryllium and Composites were $60.6 million in 2011, 2% lower than sales of $61.9 million in 2010, while sales in 2010 were an improvement of $14.9 million, or 32%, over sales of $47.0 million in 2009.

Sales to the defense and science market, which account for about half of this segment s sales, declined approximately 8% in 2011 from 2010 due to government funding delays and project push-outs. The majority of the improvement in Beryllium and Composites sales in 2010 over 2009 was due to higher shipments to the defense and science market.

Industrial components and commercial aerospace market sales grew in 2011 and 2010 over the respective prior year as sales of x-ray window assemblies for industrial applications have grown at a double-digit rate in each of the last two years. A portion of the growth in this market in 2010 was due to the development of new

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applications for AlBeMet®, a metal matrix composite, in semiconductor manufacturing and inspection equipment. However, sales for this application softened in the third and fourth quarters of 2011 due to weakening conditions in the capital equipment markets. Sales of ceramic laser tubes for industrial applications also softened in 2011 partially due to the flooding in Thailand and its impact on our customers operations.

Sales of beryllium speaker domes for acoustic diaphragm assemblies grew modestly in 2011 and 2010 but remained relatively minor. This is a niche application that may present potential growth opportunities for our materials. Sales for energy and other miscellaneous applications grew by minor amounts in 2011 over 2010 as well.

Sales to the medical market, which represent less than 10% of this segment s sales, declined approximately 10% in 2011 from 2010 after growing in 2010 over 2009. Beryllia ceramic sales for applications within the telecommunications infrastructure market also softened in 2011 after growing in 2010.

Beryllium and Composites generated a gross margin of $12.1 million (20% of sales) in 2011 and $21.5 million (35% of sales) in 2010 as gross margin was $9.4 million lower in 2011 compared to 2010. Gross margin was $11.1 million (24% of sales) in 2009.

Gross margin was reduced by an estimated $5.3 million in 2011 due to additional costs and inefficiencies associated with the delay in the start-up of the new beryllium facility at the Elmore plant site. While the major pieces of equipment have been installed, we incurred additional costs for supplies, maintenance and other items in order to enable the simultaneous operation of all of the equipment at full production volumes. This cost also included additional amounts spent to purchase beryllium at higher prices in order to fill sales orders since the facility did not generate production level quantities of material as planned. Improvements were ongoing in the first quarter 2012 and we expect the facility to be operational in the first half of 2012.

The change in product mix was unfavorable in 2011 as compared to 2010 as defense sales, which typically generate higher margins, were lower. Higher operating costs, particularly in the fourth quarter 2011, reduced margins compared to 2010 and largely offset the benefit from the yield improvements made on welded products. The lower sales volume in 2011 had a minor impact on the decline in margins in 2011 from 2010. Lower production levels at the Arizona facility also negatively impacted gross margin in 2011. Manufacturing overhead costs were $2.7 million higher in 2011 than in 2010 partially due to the additional ongoing overhead costs for the new facility in Elmore. Overhead costs also increased at the Fremont, California facility, primarily salaries and fringe benefits, in order to support the higher business levels there.

The gross margin improved by an estimated $7.9 million in 2010 over 2009 as a result of the higher sales volume. The change in product mix was favorable in 2010 as compared to 2009, while manufacturing overhead costs were also lower in 2010 than in 2009 as we were able to leverage the existing cost base. The difference in input materials, use of vendor scrap and reclamation efforts provided an estimated $0.3 million net benefit in 2010. These margin benefits were partially offset by lower manufacturing yields on welded products that reduced margins by an estimated $1.2 million in 2010. New processes were implemented and yields on these products improved in the second half of 2010.

SG&A, R&D and other-net expenses totaled $12.9 million (21% of sales) in 2011, $11.5 million (19% of sales) in 2010 and $9.0 million (19% of sales) in 2009. R&D expenses were 75% higher in 2011 than 2010 due to increased activity and various projects. Selling costs increased in 2011 over 2010 as did corporate charges while incentive compensation expense was lower. Differences in other non-operating items contributed to the higher expense level in 2011.

The main drivers for the increased expense level in 2010 were higher incentive compensation, due to the improved profitability, and higher corporate charges. Various sales and marketing support expenses, including commissions and travel, also increased in 2010 over 2009.

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Beryllium and Composites generated an operating loss of $0.8 million in 2011 compared to an operating profit of $10.0 million in 2010. This $10.8 million decline in profitability was due to a reduction in gross margin caused by inefficiencies and additional costs resulting from the delay in the start-up of the new beryllium facility, additional overhead costs and other factors, and higher SG&A expenses.

Operating profit in 2010 was an improvement of $7.9 million over the operating profit of $2.1 million generated in 2009. This improvement was due to the margin benefit from the higher sales and other factors offset in part by an increase in expenses. Operating profit was 16% of sales in 2010 and 5% of sales in 2009.

Technical Materials

(Millions)	2011	2010	2009
Net sales	$ 78.7	$ 67.5	$ 34.7
Operating profit (loss)	7.3	5.3	(2.5)

Technical Materials capabilities include clad inlay and overlay metals, precious and base metal electroplated systems, electron beam welded systems, contour profiled systems and solder-coated metal systems. These specialty strip metal products provide a variety of thermal, electrical or mechanical properties from a surface area or particular section of the material. Our cladding and plating capabilities allow for a precious metal or other base metals to be applied in continuous strip form only where it is needed, reducing the material cost to the customer as well as providing design flexibility and performance. Major applications for these products include connectors, contacts, power lead frames and semiconductors while the largest markets are automotive electronics and consumer electronics. The energy and medical markets offer further growth opportunities. Technical Materials products are manufactured at our Rhode Island facility.

Sales from Technical Materials of $78.7 million in 2011 were 17% higher than sales of $67.5 million in 2010. Sales in 2010 were nearly double the sales of $34.7 million in 2009. Sales of inlay and selective plating products showed the most growth in 2011 over 2010, while sales of all major product lines were higher in 2010 than in 2009.

Sales to the automotive electronics and the consumer electronics market improved in 2011 and 2010 over the respective prior year. Automotive electronics sales grew 22% in 2011 over 2010 after more than doubling in 2010 over 2009. Consumer electronics sales were 8% higher in 2011 than 2010 and approximately 80% higher in 2010 than in 2009. A portion of the growth in consumer electronics sales in 2011 was due to an 11% increase in shipments of disk drive arm materials despite shipment levels being disrupted in the fourth quarter 2011 by flooding in Thailand that affected the downstream supply chain. Sales of disk drive arm materials grew 64% in 2010 over 2009.

Sales for solar energy, fuel cells and other alternative energy applications showed solid growth in 2011 and 2010 due to product and market development activities. Sales to the medical market also grew in each of the last two years.

The growth in sales in 2011 was partially due to higher prices and changes in product mix.

Order entry for Technical Materials was approximately 6% lower than sales in 2011 as the order entry rate slowed down during the third quarter of the year. Order entry exceeded sales by approximately 6% in 2010.

Gross margin on sales from Technical Materials was $16.6 million (21% of sales) in 2011 compared to $14.5 million (22% of sales) in 2010. Gross margin was $3.5 million and 10% of sales in 2009.

The higher sales volume was the main cause for the $2.1 million increase in gross margin in 2011 over 2010. Manufacturing overhead costs increased due to higher utility costs, maintenance and other items, but this increase was largely offset by lower inventory provision adjustments.

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The $11.0 million increase in gross margin in 2010 over 2009 was largely due to the $32.8 million growth in sales, while the associated higher production volumes helped generate improved manufacturing efficiencies as well. Factory labor and other direct manufacturing costs were added back in 2010 only as needed to meet the production schedule. Manufacturing overhead costs were $0.8 million higher in 2010 than in 2009.

Various capital expenditures and other improvements implemented in recent years have resulted in a more flexible deployment of the work force that has generated operating efficiencies. While employment levels increased during 2011 and 2010, the total employment within Technical Materials was 6% lower at year-end 2011 than it was as of the end of the third quarter 2008, which was when the global economic downturn began.

SG&A, R&D and other-net expenses totaled $9.4 million in 2011, $9.2 million in 2010 and $6.0 million in 2009. These expenses were 12% of sales in 2011, 14% of sales in 2010 and 17% of sales in 2009. The slight increase in the dollar amount of these expenses in 2011 over 2010 was caused primarily by higher commissions, due to the higher level of sales, and increases in fringe benefits costs and corporate charges offset in part by lower bad debt expense.

Higher selling and marketing costs, including manpower, commissions and travel expenses, were the main cause of the increase in 2010 over 2009. Incentive compensation costs and corporate charges were $1.0 million higher in 2010 than in 2009. Other net-expenses, including the metal consignment fee and other miscellaneous items, contributed to the higher expense level in 2010 as well.

Technical Materials generated an operating profit of $7.3 million in 2011, an improvement of $2.0 million over the $5.3 million of profit generated in 2010. In 2009, this segment had an operating loss of $2.5 million. Operating profit was 9% of sales in 2011 and 8% of sales in 2010.

International Sales and Operations

We operate in worldwide markets and our international customer base continues to expand geographically due to the development of various foreign nations economies and the relocation of U.S. businesses overseas. Our international operations are designed to provide a cost-effective method of capturing the growing overseas demand for our products over the long term.

In Asia, we have strategically located our facilities in Japan, Singapore, China, Korea, Taiwan and the Philippines. In 2011, we expanded our Asian manufacturing base with the acquisition of EIS. Our European facilities are in Germany, the United Kingdom, Ireland and the Czech Republic. These operations provide a combination of manufacturing, finishing operations, local sales support and distribution services. We also augment our sales and distribution efforts with an established network of independent distributors and agents throughout the world.

The following table summarizes total international sales by region for the last three years:

(Dollars in millions)	2011	2010	2009
Asia	$ 203.9	$ 216.3	$ 163.9
Europe	147.6	127.5	73.5
Rest of world	31.5	25.3	11.8
Total	$ 383.0	$ 369.1	$ 249.2
Percent of total sales	25%	28%	35%

International sales include sales from international operations and direct exports from our U.S. operations. The international sales in the above chart are included in the individual segment sales previously discussed.

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Total international sales improved approximately 4% in 2011 over 2010. Sales to Europe improved in 2011 in part due to stronger automotive electronics sales, while sales to Asia softened partially due to the weaker sales to the consumer electronics market in the second half of the year. The lower Asian sales were net of the benefit from the addition of EIS in the fourth quarter. International sales grew $119.9 million in 2010 over 2009 as demand improved from the majority of our key markets and from all regions. Sales to Asia increased 32%, while European sales improved 73% in 2010 over 2009.

Consumer electronics, automotive electronics, appliance and telecommunications infrastructure are the larger international markets for our products. Our market share is smaller in overseas markets than it is domestically, but international markets, and Asia in particular, may present greater long-term growth opportunities.

Sales from the European and certain Asian operations are denominated in their local currencies. Exports from the U.S. and the balance of the sales from the Asian operations are typically denominated in U.S. dollars. Local competition generally limits our ability to adjust selling prices upwards to compensate for short-term unfavorable exchange rate movements.

We have a hedge program with the objective of minimizing the impact of fluctuating currency values on our consolidated operating profit. See Critical Accounting Policies below.

Legal Proceedings

One of our subsidiaries, Materion Brush Inc., is a defendant from time to time in proceedings in various state and federal courts brought by plaintiffs alleging that they have contracted chronic beryllium disease or other lung conditions as a result of exposure to beryllium. Plaintiffs in beryllium cases generally seek recovery under negligence and various other legal theories and seek compensatory and punitive damages, in many cases of an unspecified sum. Spouses, if any, often claim loss of consortium.

The following table summarizes the associated activity with beryllium cases.

	December 31,		
	2011	2010	2009
Total cases pending	0	2	4
Total plaintiffs (including spouses)	0	6	8
Number of claims (plaintiffs) filed during period ended	0(0)	1(1)	0(2)
Number of claims (plaintiffs) settled during period ended	1(3)	2(2)	3(16)
Aggregate cost of settlements during period ended (dollars in thousands)	$ 43	$ 20	$ 850
Number of claims (plaintiffs) otherwise dismissed	1(3)	1(1)	2(14)

Settlement payment and dismissal for a single case may not occur in the same period.

Additional beryllium claims may arise. Management believes that we have substantial defenses in these types of cases and intends to contest the suits vigorously should they arise. Employee cases, in which plaintiffs have a high burden of proof, have historically involved relatively small losses to us. Third-party plaintiffs (typically employees of customers or contractors) face a lower burden of proof than do employees or former employees, but these cases are generally covered by varying levels of insurance.

Although it is not possible to predict the outcome of any litigation, we provide for costs related to these matters when a loss is probable and the amount is reasonably estimable. Litigation is subject to many uncertainties, and it is possible that some of these actions could be decided unfavorably in amounts exceeding our reserves. An unfavorable outcome or settlement of a beryllium case or adverse media coverage could encourage the commencement of additional similar litigation. We are unable to estimate our potential exposure to unasserted claims.

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Based upon currently known facts and our experience with beryllium cases and assuming collectibility of insurance, we do not believe that resolution of future beryllium proceedings will have a material adverse effect on our financial condition or cash flow. However, our results of operations could be materially affected by unfavorable results in one or more of these cases.

The settlement payments of $43,000 made in 2011 and $20,000 made in 2010 were not reimbursed by insurance since our total applicable costs were less than the annual deductible in both years.

Regulatory Matters. Standards for exposure to beryllium are under review by the United States Occupational Safety and Health Administration (OSHA) and by other governmental and private standard-setting organizations. One result of these reviews will likely be more stringent worker safety standards. Some organizations, such as the California Occupational Health and Safety Administration and the American Conference of Governmental Industrial Hygienists, have adopted standards that are more stringent than the current standards of OSHA. The development, proposal or adoption of more stringent standards may affect the buying decisions by the users of beryllium-containing products. If the standards are made more stringent and/or our customers or other downstream users decide to reduce their use of beryllium-containing products, our results of operations, liquidity and financial condition could be materially adversely affected. The impact of this potential adverse effect would depend on the nature and extent of the changes to the standards, the cost and ability to meet the new standards, the extent of any reduction in customer use and other factors. The magnitude of this potential adverse effect cannot be estimated.

FINANCIAL POSITION

Net cash provided from operations was $56.8 million in 2011 as net income, the effects of depreciation and deferred taxes and a reduction in accounts receivable more than offset the net increase in other working capital items. Cash used in operations totaled $11.7 million through the first three quarters of 2011 as a result of increases in receivables and inventory, contributions to the domestic pension plan, payment of the 2010 incentive compensation and changes in other items. In the fourth quarter 2011, however, a decline in receivables, coupled with other improvements, resulted in cash flow from operations of $68.5 million in that period.

In 2010, cash provided from operations totaled $31.0 million as net income and the effects of depreciation, deferred taxes and other items more than offset increases in working capital, primarily accounts receivable and inventory. The majority of the working capital build in 2010 occurred in the first half of the year as sales levels ramped up from the low levels in 2009.

In 2009, we generated cash flow from operations of $41.6 million as reductions in accounts receivable and inventory, the effects of depreciation and other items more than offset the net loss for the year.

As previously noted, changes in the cost of precious and base metals are essentially passed on to customers. Therefore, while sudden movements in the price of metals can cause a temporary imbalance in our cash receipts and payments in either direction, once prices stabilize our cash flow tends to stabilize as well.

Working Capital

Cash totaled $12.3 million as of December 31, 2011, a decline of $3.8 million from the cash balance of $16.1 million as of year-end 2010. The excess cash, coupled with the cash provided from operations, were used to finance the acquisition of EIS, capital expenditures, a reduction in debt and the repurchase of shares.

Cash increased $3.8 million in 2010 over 2009 as the cash flow from operations, the increase in debt and proceeds from the exercise of stock options exceeded the cost to acquire Academy and the capital expenditure funding requirements in 2010.

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Accounts receivable of $117.8 million at year-end 2011 was $21.6 million, or 16%, lower than the accounts receivable balance of $139.4 million as of year-end 2010. The decline was due to a combination of changes in the sales volume, as sales in the fourth quarter 2011 were 6% lower than sales in the fourth quarter 2010, and an improvement in the average collection period from approximately 36 days at year-end 2010 to 32 days at year-end 2011. The receivable balance increased during the first three quarters of 2011 due to the higher sales volumes and then declined significantly in the fourth quarter 2011.

The accounts receivable balance as of year-end 2010 was a $55.4 million, or 66%, increase over the receivable balance of $84.0 million as of year-end 2009. The main driver for the increased receivable balance was the higher level of sales. Sales in the fourth quarter 2010 were $140.8 million, or 65%, higher than sales in the fourth quarter 2009. The days sales outstanding, a measure of how quickly receivables are collected, slowed by less than one day and had a minor impact on the increase in receivables in 2010.

The expense for accounts written off to bad debts and changes in the allowance for doubtful accounts was only $0.1 million in 2011 and $0.3 million in 2010. We have procedures in place to closely monitor our accounts receivable aging and to follow-up on past due accounts. We evaluate the credit position of new customers in advance of the initial sale and we evaluate our existing customers credit positions on an ongoing basis. We will revise credit terms offered to our customers as conditions warrant in order to minimize our exposures. Credit terms may vary by country based upon local customary practice and competition. Billings for precious metals tend to have tighter payment terms than billings for other products. Advance billings are used from time to time to help reduce credit exposures and speed up the collection of cash.

Other receivables totaled $4.6 million as of December 31, 2011 and $4.0 million as of December 31, 2010. The majority of the amounts due at both year ends were for reimbursement for equipment purchased under a government contract. These billings are typically paid by the government on a current basis.

Inventories were $187.2 million as of year-end 2011, an increase of $32.7 million, or 21%, over the inventory balance of $154.5 million as of year-end 2010 as the inventory turnover ratio, a measure of how efficiently inventory is utilized, slowed down. Inventories increased $24.4 million, or 19%, during 2010 as inventories had been drawn down significantly in 2009 due to the global economic impact on our business that year.

Inventories at our Utah extraction mill and mine increased $10.3 million in 2011 over 2010 due to the cyclical nature of our mining operations and the planned timing of extracting ore and the deployment of our mining resources. In 2010, Utah s inventories declined $5.9 million as a portion of our resources were devoted to constructing a new pit during the majority of that year.

A significant portion of the increase in total inventories in both years was in Performance Alloys. Inventory pounds on hand were 15% higher at year-end 2011 than year-end 2010 after growing 33% during 2010 over year-end 2009. This growth in pounds on hand was less than the growth in pounds shipped over the two-year period.

Advanced Material Technologies inventories grew approximately 11% in 2011 after growing approximately 8% in 2010 over 2009. A large portion of this segment s precious metal requirements are maintained on a consigned basis. The acquisition of EIS added $2.0 million to the year-end 2011 inventory, while the acquisition of Academy in 2010 added $0.8 million to the year-end 2010 inventory.

Technical Materials inventory declined 17% in 2011 despite the higher level of sales due to improved efficiencies. Inventories within Technical Materials had increased approximately 32% in 2010 in order to support the increased business levels in that year.

Inventories within Beryllium and Composites increased in 2011 in part due to the timing of external purchases of input material due to the start-up issues with the new facility. Inventories had also increased in 2010 due to the higher sales volume and the timing of purchases of input materials in that year as well.

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Raw material prices, particularly prices for precious metals and copper, were volatile during 2011 and the overall average prices were higher in 2011 than in 2010. The impact of changing prices on our inventory value is minimized by the use of the LIFO costing method within our domestic operations. The LIFO method results in the current cost being charged to the income statement and the older costs being used to value the inventory on hand. See Critical Accounting Policies below. In addition, a portion of our metal requirements are maintained under off-balance sheet consignment arrangements. The metal is not purchased out of consignment until it is shipped to the customer.

Intangible assets were $34.6 million at year-end 2011 compared to $36.8 million at year-end 2010. Intangible assets increased approximately $4.4 million during 2011 for deferred financing costs associated with new debt agreements and for the intangible assets acquired with EIS, while amortization expense was $6.6 million.

We acquired intangible assets totaling $4.8 million during 2010, including $3.2 million acquired with Academy. Amortization expense was $6.9 million in 2010. See Note E to the Consolidated Financial Statements.

Accrued salaries and wages of $29.4 million as of year-end 2011 were $4.6 million lower than the $34.0 million balance as of year-end 2010. Accrued salaries and wages increased $17.7 million in 2010 over the year-end 2009 balance. The differences in the balances between years were due to changes in the incentive compensation accruals, manpower levels, including the impact of the acquisitions, and other related factors.

Other Long-term Liabilities

Other long-term liabilities totaled $16.5 million as of December 31, 2011, a decrease of $1.4 million from the $17.9 million balance as of December 31, 2010. The decline was due to the reversal of the earn out liability associated with the Barr acquisition as previously discussed, normal amortization of capital lease balances and other items.

Other long-term liabilities increased $8.3 million during 2010. The predominant cause for this increase was the recording of the long-term portion of a 160-month, $10.2 million capital lease for the building associated with the new beryllium facility being constructed at the Elmore plant site. This increase was partially offset by a $0.8 million reduction in the estimated fair value of the earn out liability for the potential payments to be made to the sellers of Barr.

Retirement and Post-employment Benefits

The long-term retirement and post-employment benefit obligation was $105.1 million as of December 31, 2011 compared to $82.5 million at December 31, 2010.

We have a defined benefit pension plan that covers the majority of our domestic employees. The liability for this plan, which is included in the above totals, was $63.7 million at year-end 2011 and $44.1 million as of year-end 2010. The plan had a projected benefit obligation of $199.2 million at year-end 2011, an increase from the projected benefit obligation of $171.2 million at year-end 2010 largely due to the current year expense and actuarial losses, including a reduction in the discount rate. The market value of the plan assets was $135.5 million at year-end 2011 compared to $127.1 million at year-end 2010. This $8.4 million increase for the year resulted from contributions of $21.3 million less benefit payments and expenses of $7.9 million and investment losses of $5.0 million.

A portion of our domestic retirees and current employees are eligible to participate in a retiree medical benefit plan. The liability for this unfunded plan was $33.2 million as of December 31, 2011, with $30.4 million classified as long term and $2.8 million classified as short term, and $32.4 million as of December 31, 2010, with $29.5 million classified as long term and $2.9 million classified as short term. The plan expense was $1.8 million in 2011 and $2.0 million in 2010.

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Our subsidiary in Germany has an unfunded retirement plan for its employees, while our subsidiary in England has a funded retirement plan.

See Note I to the Consolidated Financial Statements for additional details on our retirement obligations.

Depreciation and Amortization

Depreciation, amortization and depletion expense was $43.6 million in 2011, $35.4 million in 2010 and $31.9 million in 2009. The increase in 2011 over 2010 was largely due to higher mine amortization that resulted from mining ore from the new pit opened late in 2010. The majority of the increase in 2010 over 2009 was due to the acquisitions of Barr and Academy and the additional depreciation and amortization on the assets acquired.

Capital Expenditures

A summary of capital expenditures over the 2009 to 2011 timeframe is as follows:

(Millions)	2011	2010	2009
Capital expenditures	$ 28.2	$ 42.4	$ 44.2
Mine development	0.6	11.3	0.8
Subtotal	28.8	53.7	45.0
Reimbursement for spending under government contract	5.4	21.9	28.2
Net spending	$ 23.4	$ 31.8	$ 16.8

We have a Title III contract with the U.S. Department of Defense (DoD) for the design and development of a new facility for the production of primary beryllium. As previously noted, the equipment has been installed but work remains to bring it fully up on line and to operate at the designed and necessary levels of production. The total cost of this multi-year project is estimated to be $100.0 million, with the DoD providing approximately 73% of the funding. The final cost of the project and the DoD s share will be determined based upon the satisfactory completion of the final construction items, resolution of any start-up issues and other factors. Spending on this project totaled $5.1 million in 2011 compared to $28.0 million in 2010 and was included within the capital expenditure line in the above table.

Reimbursements from the DoD are recorded as unearned income, a liability on the Consolidated Balance Sheet. See Critical Accounting Policies below for further discussion. The spending and reimbursement received from the government may differ in a given year due to the normal lag between when the spending occurs and the government issues the reimbursement.

Since 2000, all of our metallic beryllium requirements have been supplied from materials purchased from the National Defense Stockpile and international vendors. Successful completion of this project will allow for the creation of the only domestic facility capable of producing primary beryllium.

Advanced Material Technologies capital spending was $8.0 million in 2011 compared to $5.2 million in 2010 and $4.5 million in 2009. Spending in 2011 included an expansion to the refining and shield kit cleaning operations equipment at the Buffalo, New York facility, the initial phase of an expansion to the Singapore operations, new ventilation and safety equipment at the New Mexico operations and a number of smaller projects throughout the segment.

Capital spending by Performance Alloys, including mine development costs, totaled $10.6 million in 2011, $17.1 million in 2010 and $3.8 million in 2009. Major projects in 2011 included a new dross reclamation system, upgrades to the casting operations and new rod, bar and tube processing equipment. Spending in 2011 also included $1.5 million for the purchase of a building at the Elmore, Ohio facility that was previously held under an operating lease. Mine development costs were higher in 2010 due to the completion of a major new pit. We began extracting ore from this pit in the fourth quarter 2010. Performance Alloys capital spending increased in 2010 over 2009 due to the improved profitability and cash flow in 2010.

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In addition to the new beryllium plant, capital spending within the Beryllium and Composites segment included spending on new machine shop equipment and other miscellaneous projects.

Technical Materials capital spending included upgrades to the electron beam welding equipment, modifications to other manufacturing equipment and various infrastructure projects.

We also continued work on software upgrades and implementations at various facilities during the 2009 to 2011 timeframe.

Capacity expansion projects, including the new beryllium facility, accounted for approximately 36% of the capital spending in 2011, while new technology projects accounted for approximately 19% of the 2011 spending. The balance of the capital spending in 2011 was on maintenance capital projects and mine development.

Acquisitions

In addition to the above capital expenditures, we acquired the following businesses in the 2009 to 2011 time frame:

(Dollars in millions)	Year	Cost	Acquired Goodwill
EIS Optics Limited	2011	$ 23.9	$ 11.1
Academy Corporation	2010	21.0	5.4
Barr Associates, Inc.	2009	55.2	31.7

The EIS goodwill and opening balance sheet valuations were preliminary as of year-end 2011 as we were still assessing deferred taxes, the final adjustments to the purchase price in accordance with the terms of the purchase agreement and other items. The Academy acquisition cost is shown net of $1.7 million we received back from the sellers in 2010 subsequent to the purchase as a result of the resolution of valuation adjustments in accordance with the purchase agreement. Each of these three acquisitions was financed with a combination of cash on hand and borrowings under the revolving credit agreement. The value of the assigned goodwill from each transaction was determined with the assistance of independent valuation experts. See Note B to the Consolidated Financial Statements.

Debt

Outstanding debt totaled $81.4 million as of year-end 2011, a decline of $4.7 million from the total debt of $86.1 million outstanding as of December 31, 2010. Debt increased $26.2 million during the first three quarters of 2011 in order to fund, in part, the higher levels of working capital, the contributions to the domestic defined benefit pension plan and capital expenditures. However, during the fourth quarter 2011, despite the acquisition of EIS, debt declined $30.9 million largely due to a reduction in accounts receivable during that period. Short-term debt totaled $40.9 million as of year-end 2011, while long-term debt was $40.5 million.

The outstanding debt at year-end 2010 was $21.6 million higher than the balance of $64.5 million as of December 31, 2009. The majority of this increase occurred in the first quarter 2010 as a result of funding a portion of the acquisition of Academy and an increase in working capital. Short-term debt totaled $47.8 million while long-term debt totaled $38.3 million as of year-end 2010.

In the third quarter 2011, we negotiated a new five-year $325.0 million revolving credit agreement to replace the former $240.0 million revolving credit agreement that was scheduled to mature in the fourth quarter 2012. The new agreement provides for a committed revolving credit facility and is comprised of sub-facilities for revolving loans, swing line loans, letters of credit and foreign currency denominated borrowings. In addition to the higher borrowing capacity, various provisions relating to allowable unsecured debt, acquisitions and other items were revised in the new agreement to provide increased flexibility. The key financial covenants in the new agreement, including a leverage ratio and fixed charge coverage ratio, are similar to those contained in the former agreement.

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In the second quarter 2011, we entered into a new $8.0 million debt agreement with the Toledo-Lucas County Port Authority and the Dayton-Montgomery County Port Authority to fund capital expenditures at our Ohio facilities. Proceeds totaling $3.2 million were used during 2011, with the balance of the proceeds being held in escrow to be drawn down as the applicable capital expenditures are incurred. The agreement calls for monthly installment payments and a $1.1 million balloon payment upon maturity in ten years.

We were in compliance with all of our debt covenants as of December 31, 2011.

Shareholders Equity

Shareholders equity was $406.0 million as of year-end 2011, an increase of $21.6 million over the balance of $384.4 million as of year-end 2010. Equity also increased $44.5 million in 2010. Comprehensive income, which includes net income, changes in the cumulative translation adjustment, changes in the fair value of derivatives and adjustments to the carrying value of the pension and other post-employment benefit liabilities that are charged directly to equity, was $19.4 million in 2011 and $41.5 million in 2010.

We received $0.7 million from the exercise of approximately 53,000 options in 2011 and $2.6 million from the exercise of approximately 154,000 options in 2010.

We repurchased approximately 132,000 shares of our common stock at a cost of $3.8 million in 2011 under a share buyback program initially approved by the Board of Directors in 2008. The primary purpose of the buyback program is to offset a portion of the dilution caused by stock compensation plans. We repurchased 150,000 shares of our common stock at a cost of $3.5 million in 2010 under this program.

Equity was also affected by stock-based compensation expense, the tax benefits on stock compensation realization and other factors in both 2011 and 2010.

Off-balance Sheet Obligations

We maintain the majority of the precious metals we use in production on a consignment basis in order to reduce our exposure to metal price movements and to reduce our working capital investment. In 2010, we began consigning a portion of our copper requirements as well. See Item 7A of this Form 10-K. The notional value of the off-balance sheet inventory was $244.0 million as of year-end 2011 and $211.8 million as of year-end 2010. This increase was caused by a combination of higher metal prices and higher quantities of metal on hand.

We were in compliance with all of the covenants contained in the consignment agreements as of December 31, 2011.

Contractual Obligations

A summary of payments to be made under long-term debt agreements, operating leases, significant capital leases, pension plan contributions and material purchase commitments by year is as follows:

(Millions)	2012	2013	2014	2015	2016	There-after	Total
Long-term debt	$ 0.5	$ 0.6	$ 0.6	$ 0.7	$ 34.0	$ 4.6	$ 41.0
Non-cancelable lease payments	7.2	6.0	4.3	3.7	3.4	14.1	38.7
Capital lease payments	1.2	1.1	1.1	1.1	1.0	6.8	12.3
Pension plan contribution	11.2						11.2
Purchase commitments	4.5						4.5
Total	$ 24.6	$ 7.7	$ 6.0	$ 5.5	$ 38.4	$ 25.5	$ 107.7

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The long-term debt repayment in 2016 includes $25.0 million borrowed under the revolving credit agreement as of year-end 2011. While this agreement matures in 2016, we anticipate that we will renegotiate a new agreement prior to the maturity date as we have done previously. However, we cannot guarantee that a replacement facility will have similar terms as the existing facility. See Note F to the Consolidated Financial Statements for additional debt information.

The non-cancelable lease payments represent payments under operating leases with initial lease terms in excess of one year as of December 31, 2011. The capital lease payments include the building for the new beryllium facility at the Elmore site and other material capital leases. See Note G to the Consolidated Financial Statements for further leasing details.

The pension plan contribution of $11.2 million in the above table represents our best estimate of the required 2012 contribution to the domestic defined benefit plan as of early 2012. Contributions to the plan are designed to comply with ERISA guidelines, which change from time to time, and are based upon the plan s funded ratio, which is affected by actuarial assumptions, investment performance, benefit payouts, plan expenses, amendments and other factors. Therefore, it is not practical to estimate contributions to the plan beyond one year. Contributions in excess of $11.2 million may be made to the plan in 2012.

The purchase commitments of $4.5 million are for capital equipment to be acquired in 2012 based on orders placed with vendors as of December 31, 2011.

Liquidity

We believe that cash flow from operations plus the available borrowing capacity and the current cash balance are adequate to support operating requirements, capital expenditures, projected pension plan contributions, environmental remediation projects and strategic acquisitions.

The cumulative cash flow provided from operations totaled $129.5 million in 2009 through 2011, while capital expenditures, net of amounts reimbursed by the government, totaled $72.0 million. The cash flow from operations includes contributions to the domestic pension plan of $53.1 million during this three-year period.

A summary of key data relative to our liquidity, including the outstanding debt, cash balances, available borrowing capacity and the debt-to-debt-plus-equity ratio, as of the end of each of the last three years is as follows:

	December 31,		
(Dollars in millions)	**2011**	**2010**	**2009**
Total outstanding debt	$ 81.4	$ 86.1	$ 64.5
Cash	12.3	16.1	12.3
Debt net of cash	$ 69.1	$ 70.0	$ 52.2
Available borrowing capacity	$ 274.9	$ 173.0	$ 46.3
Debt-to-debt-plus-equity ratio	17%	18%	16%

Debt net of cash is a non-GAAP measure. We are providing this information because we believe it is more indicative of our overall financial position. It is also a measure our management uses to assess financing and other decisions.

Debt net of cash increased $16.9 million over the two-year period from December 31, 2009 to December 31, 2011. During this time frame, we acquired Academy for $21.0 million and EIS for $23.9 million and we repurchased $7.3 million of our common stock. The increase in debt net of cash was less than these outlays due to the cash flow from operations exceeding capital spending.

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Our available borrowing capacity has increased over the last two years as a result of our improved operating performance and the renegotiated credit agreement. The available borrowing capacity in the table above represents the additional amounts that could be borrowed under the revolving credit agreement and other secured lines existing as of December 31 of each year depicted. The applicable debt covenants have been taken into account when determining the available borrowing capacity, including the covenant that restricts the borrowing capacity to a multiple of the twelve-month trailing earnings before interest, income taxes, depreciation and amortization and other adjustments.

The renegotiated revolving credit agreement provides a stable borrowing platform for the next five years with an expanded borrowing capacity and more favorable terms than the prior agreement.

The new debt agreement that funds capital expenditures in Ohio also provided an additional source of capital in 2011.

As of early in the first quarter 2012, we do not know of any future or pending changes that will cause us to be in non-compliance with any of our debt covenants in the near term.

As a result of the decline in debt and an increase in equity in 2011, the debt-to-debt-plus-equity ratio, a measure of balance sheet leverage, improved from 18% at year-end 2010 to 17% at year-end 2011. We believe that our cash flow from operations can support this level of leverage over the long term.

The working capital ratio, which compares current assets excluding cash to current liabilities excluding debt, was 3.6 to 1.0 as of year-end 2011 compared to 3.4 to 1.0 as of year-end 2010.

Portions of our business utilize off-balance sheet consignment arrangements to finance their metal requirements. While the increasing metal prices over the last two years have put pressure on the consignment line limitations from time to time, we negotiated an increase to the available capacity under these arrangements during 2011. The available and unused capacity under the metal financing lines totaled approximately $119.6 million as of December 31, 2011.

Cash on hand does not affect the covenants or the borrowing capacity under our debt agreements. Portions of the cash balances may be invested in high quality, highly liquid investments with maturities of three months or less.

In July 2010, our Board of Directors re-authorized the Company to purchase up to 700,000 shares of our common stock, which represent approximately 3% of our outstanding shares. The primary purpose of this program is to offset the dilution created through shares issued under stock-based compensation plans. Any stock repurchases will be made from time to time for cash in the open market or otherwise, including without limitation, in privately negotiated transactions and round lot or block transactions on the New York Stock Exchange, and may be made pursuant to accelerated share repurchases or Rule 10b5-1 plans. The repurchase program may be suspended or discontinued at any time.

ENVIRONMENTAL

We have an active environmental compliance program. We estimate the probable cost of identified environmental remediation projects and establish reserves accordingly. The environmental remediation reserve balance was $5.3 million at December 31, 2011 and $5.2 million at December 31, 2010. Payments against the reserve totaled $0.2 million in 2011 and $0.7 million in 2010. See Note J to the Consolidated Financial Statements.

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ORE RESERVES

We have proven and probable reserves of beryllium-bearing bertrandite ore in Juab County, Utah. Proven reserves are the measured quantities of ore commercially recoverable through the open-pit method. Probable reserves are the estimated quantities of ore known to exist but have been computed from inspection sites that are farther apart than those used to measure proven reserves. Although the inspection sites are fewer, assurance levels are sufficient to assume ore continuity. Ore dilution of approximately seven percent occurs during the mining process. The ore is processed at our extraction facility in Utah. Approximately 87% of the beryllium in ore is recovered in the extraction process.

We use computer models to estimate ore reserves, which are subject to economic and physical evaluation. The requirement that reserves pass an economic test causes open-pit mineable ore to be found in both proven and probable geologic settings. Proven reserves have decreased slightly in each of the last four years, while probable reserves have remained unchanged over the same time period. Based upon average production levels in recent years and our near-term production forecasts, proven reserves would last over seventy-five years. The following table summarizes our proven and probable reserves and the quantity of ore processed over the last five years. Ore reserves classified as possible are excluded from the table.

	2011	2010	2009	2008	2007
Proven bertrandite ore reserves at year end (thousands of dry tons)	6,341	6,404	6,425	6,454	6,531
Grade % beryllium	0.265%	0.266%	0.266%	0.266%	0.266%
Probable bertrandite ore reserves at year end (thousands of dry tons)	3,519	3,519	3,519	3,519	3,519
Grade % beryllium	0.232%	0.232%	0.232%	0.232%	0.232%
Bertrandite ore processed (thousands of dry tons, diluted)	70	56	39	64	52
Grade % beryllium, diluted	0.381%	0.336%	0.330%	0.321%	0.321%

We own approximately 95% of the proven reserves, with the remaining reserves leased. We augment our proven reserves of bertrandite ore through the purchase of imported beryl ore from time to time. This ore, which is approximately 4% beryllium, is also processed at the Utah facility.

CRITICAL ACCOUNTING POLICIES

The preparation of financial statements requires the inherent use of estimates and management s judgment in establishing those estimates. The following are the most significant accounting policies we use that rely upon management s judgment.

Accrued Liabilities. We have various accruals on our balance sheet that are based in part upon management s judgment, including accruals for litigation, environmental remediation and workers compensation costs. We establish accrual balances at the best estimate determined by a review of the available facts and trends by management and independent advisors and specialists as appropriate. Absent a best estimate, the accrual is established at the low end of the estimated reasonable range in accordance with accounting guidelines. Litigation and environmental accruals are established only for identified and/or asserted claims; future claims, therefore, could give rise to increases to the accruals. The accruals are adjusted as facts and circumstances change. The accruals may also be adjusted for changes in our strategies or regulatory requirements. Since these accruals are estimates, the ultimate resolution may be greater or less than the established accrual balance for a variety of reasons, including court decisions, additional discovery, inflation levels, cost control efforts and resolution of similar cases. Changes to the accruals would then result in an additional charge or credit to income in the period when the change was made. See Note J to the Consolidated Financial Statements.

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Legal claims may be subject to partial or complete insurance recovery. The accrued liability is recorded at the gross amount of the estimated cost and the insurance recoverable, if any, is recorded as an asset and is not netted against the liability. The accrued legal liability includes the estimated indemnity cost only, if any, to resolve the claim through a settlement or court verdict. The legal defense costs are not included in the accrual and are expensed in the period incurred, with the level of expense in a given year affected by the number and types of claims we are actively defending.

Non-employee claims for beryllium disease made prior to 2022 where any of the alleged exposure period is prior to year-end 2007 are covered by insurance. The insurance covers defense costs and indemnity payments (resulting from settlements or court verdicts) and is subject to a $1.0 million annual deductible. In 2011, defense and indemnity costs were less than the deductible.

Pensions. We have a defined benefit pension plan that covers a large portion of our current and former domestic employees. Carrying values of the associated pension assets and liabilities are determined on an actuarial basis using numerous actuarial and financial assumptions. Differences between the assumptions and current period actual results are typically deferred into the net pension asset or liability value and amortized against future income under established guidelines. The deferral process generally reduces the volatility of the recognized net pension asset or liability and current period income or expense. Unrealized gains or losses are recorded in other comprehensive income (OCI), a component of shareholders equity.

Management annually reviews key pension plan assumptions, including the expected return on plan assets, the discount rate and the average wage rate increase, against actual results, trends, Company strategies, the current and projected investment environment and industry standards and makes adjustments accordingly. The actuaries adjust certain assumptions to reflect changes in demographics and other factors, including mortality rates and employee turnover, annually as warranted. These adjustments may then lead to a higher or lower expense in future periods.

We establish the discount rate used to determine the present value of the projected and accumulated benefit obligation at the end of each year based upon the available market rates for high quality, fixed income investments whose maturities match the plan s projected cash flows. An increase to the discount rate would reduce the present value of the projected benefit obligation and future pension expense and, conversely, a lower discount rate would raise the benefit obligation and future pension expense. We elected to use a discount rate of 4.75% as of December 31, 2011 and 5.50% as of December 31, 2010.

Our pension plan investment strategies are governed by a policy adopted by the Board of Directors. Management uses a group of outside investment analysts and brokerage firms to implement these strategies. The future return on pension assets is dependent upon the plan s asset allocation, which changes from time to time, and the performance of the underlying investments. As a result of our review of various factors, we reduced the expected rate of return on plan assets assumption to 7.75% as of December 31, 2011 from an assumption of 8.00% as of December 31, 2010. The plan investments generated a loss of approximately 3.7% in 2011 after generating gains of 13.4% in 2010 and 16.7% in 2009. The expected rate of return assumption relates to the long term and given changes in risk assumptions, projections of future returns by type of investment and other factors, we believe that a 7.75% return over the long term is a reasonable assumption. Should the assets earn an average return less than 7.75% over time, in all likelihood the future pension expense would increase. Investment earnings in excess of 7.75% would tend to reduce the future expense.

The impact on the pension expense of a change in discount rate or expected rate of return assumption can vary from year to year depending upon the undiscounted liability level, the current discount rate, the asset balance, other changes to the plan and other factors. If the December 31, 2011 discount rate were reduced by 25 basis points (0.25%) and all other pension assumptions remained constant, then the 2012 projected pension expense would increase by approximately $0.7 million. If the expected rate of return assumption was reduced by 25 basis points and all other pension assumptions remained constant, the 2012 projected pension expense would increase by approximately $0.4 million.

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Based upon current assumptions, guidelines and estimates, we project the required cash contribution to be made to the plan will be $11.2 million in 2012. Additional contributions may be made during 2012 based upon a number of factors, including the performance of the plan investments, the plan s actual funded ratio, the discount rate environment, the Company s operating performance, the availability of excess cash and borrowing rates under available credit lines.

The pension liability is recalculated at the measurement date (December 31 of each year) and any adjustments to this account and OCI will be recorded at that time accordingly. See Note I to the Consolidated Financial Statements for additional details on our pension and other retirement plans.

LIFO Inventory. The prices of certain major raw materials that we use, including copper, nickel, gold, silver and other precious metals, fluctuate during a given year. Overall prices on average were higher in 2011 than in 2010.

Where possible, such changes in material costs are generally reflected in selling price adjustments, particularly with precious metals and copper. The prices of labor and other factors of production, including supplies and utilities, generally increase with inflation. Portions of these cost increases may be offset by manufacturing improvements and other efficiencies. From time to time, we will revise our billing practices to include an energy surcharge in attempts to recover a portion of our higher energy costs from our customers. However, market factors, alternative materials and competitive pricing may limit our ability to offset all cost increases with higher prices.

We use the LIFO method for costing the majority of our domestic inventories. Under the LIFO method, inflationary cost increases are charged against the current period cost of goods sold in order to more closely match the cost with the associated revenue. The carrying value of the inventory is based upon older costs and, as a result, the LIFO cost of the inventory on the balance sheet is typically, but not always, lower than it would be under most alternative costing methods. The LIFO cost may also be lower than the current replacement cost of the inventory. The LIFO inventory value tends to be less volatile during years of fluctuating costs than the inventory value would be using other costing methods.

The LIFO impact on the income statement in any given year is dependent upon the inflation rate effect on raw material purchases and manufacturing conversion costs, the level of purchases in a given year and changes in the inventory mix and quantities. Assuming no change in the quantity or mix of inventory from the December 31, 2011 level, a 100 basis point change in the annual inflation rate would cause a change of approximately $0.7 million in the LIFO inventory value.

Deferred Tax Assets. We record deferred tax assets and liabilities based upon the temporary difference between the financial reporting and tax bases of assets and liabilities. We review the expiration dates of the deferrals against projected income levels to determine if the deferral will or can be realized. If it is determined that it is more likely than not that a deferral will not be realized, a valuation allowance would be established for that item. Certain deferrals do not have an expiration date. We will also evaluate deferred tax assets for impairment due to cumulative operating losses and record a valuation allowance as warranted. A valuation allowance may increase tax expense and reduce net income in the period it is recorded. If a valuation allowance is no longer required, it will reduce tax expense and increase net income in the period that it is reversed.

We had valuation allowances of $3.9 million associated with state and foreign deferred tax assets as of year-end 2011 primarily for net operating loss carryforwards.

See Note P to the Consolidated Financial Statements for additional deferred tax details.

Unearned revenue. Billings to customers in advance of the shipment of the goods are initially recorded as unearned revenue, which is a liability on the balance sheet. This liability is subsequently reversed when the revenue is recognized. Revenue and the related cost of sales and gross margin are only recognized for these

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transactions when the goods are shipped, title passes to the customer and all other revenue recognition criteria are satisfied. The related inventory also remains on our balance sheet until these revenue recognition criteria are met. Advanced billings are typically made in association with products with long manufacturing times and/or products paid with funds from a customer s contract with the government. Billings in advance of the shipments allow us to collect cash earlier than billing at the time of the shipment and, therefore, the collected cash can be used to help finance the underlying inventory. The unearned revenue balance was $3.0 million as of year-end 2011.

Long-term unearned income. Expenditures for capital equipment to be reimbursed under government contracts are initially recorded in construction in progress. Reimbursements for those expenditures are recorded in unearned income, a liability on the balance sheet. The total cost of the assets to be constructed includes costs reimbursed by the government as well as costs borne by us. When the assets are placed in service and capitalized, this total cost will be depreciated over the useful life of the assets. The unearned income liability will be reduced and credited to income ratably with the annual depreciation expense. This benefit in effect will reduce the net expense charged to the income statement to an amount equal to the depreciation on the portion of the cost of the assets borne by us.

Capital expenditures subject to reimbursement from the government under the life of the current DoD project and the related unearned income balance totaled $62.5 million as of December 31, 2011. We anticipate that the associated equipment will be placed in service during 2012.

Derivatives. We may use derivative financial instruments to hedge our foreign currency, commodity and precious metal price and interest rate exposures. We apply hedge accounting when an effective hedge relationship can be documented and maintained. The effective portion of the change in a cash flow hedge s fair value is recorded in OCI until the underlying hedged item matures. If a hedge does not qualify as effective, changes in its fair value are recorded against income in the current period. If a derivative is deemed to be a hedge of the fair value of a balance sheet item, the change in the derivative s value will be recorded in income and will offset the change in the fair value of the hedged item to the extent that the hedge is effective.

We secure derivatives with the intention of hedging existing or forecasted transactions only and do not engage in speculative trading or holding derivatives for investment purposes. Our annual budget, quarterly forecasts, monthly estimates and other analyses serve as the basis for determining forecasted transactions. The use of derivatives is governed by policies established by the Board of Directors. These policies provide guidance on the allowable types of hedge contracts, the allowable duration of the contracts and other related matters. Hedge contracts are approved by senior financial managers at our corporate office. The level of derivatives outstanding at a particular point in time may be limited by the availability of credit from financial institutions.

Our practice has been to secure hedge contracts denominated in the same manner as the underlying exposure; for example, a yen exposure will only be hedged with a yen contract and not with a surrogate currency. We also typically secure contracts through financial institutions that are already part of our bank group.

See Note H to the Consolidated Financial Statements and Item 7A of this Form 10-K.

OUTLOOK

While sales set a record in 2011, the order entry rate slowed down in the fourth quarter 2011 largely due to softer demand from the consumer electronics market. However, we believe that a portion of this softness may have been due to downstream inventory corrections as the decline in our order pattern was greater than the change in spending by the end-use consumers and that our order level will improve as our customers will need to replenish their inventories in 2012. Because of the performance characteristics of our materials, we are well-positioned in the consumer electronics market and we serve a number of applications, including smart phones, various other handheld devices and LEDs, that have solid long-term growth potential.

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Demand levels from various other markets remained solid in early 2012, including the oil and gas and architectural glass sectors of the energy market, portions of our industrial markets and the automotive market. Our sales to the medical market improved in 2011 and we are anticipating that improvement to continue in 2012. New product development added to our sales in 2011 and we anticipate that this will continue in various markets, including solar and other alternative energy applications. A full year of EIS s results should have a minor positive impact on our sales in 2012.

Defense and science sales and orders have weakened due to pressures on government spending levels and it is difficult to project what future government budgets will entail. We believe that the softness within our traditional beryllium-based defense