MATERION Corp
Form 10-K
February 25, 2016

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

Form 10-K

(Mark One)

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

For the Fiscal Year Ended December 31, 2015

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 ý

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 ý

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 ý 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 ý 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. ý

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 ý

The aggregate market value of common shares, no par value, held by non-affiliates of the registrant (based upon the closing sale price on the New York Stock Exchange) on July 3, 2015 was $692,971,291.

As of February 18, 2016, there were 20,006,999 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 4, 2016 are incorporated by reference into Part III.

MATERION CORPORATION
Index to Annual Report
On Form 10-K for
Year Ended December 31, 2015

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:

Actual net sales, operating rates, and margins for 2016;

Our ability to strengthen our internal control over financial reporting and disclosure controls and procedures;

The global economy;

The impact of any U.S. Federal Government shutdowns and sequestrations;

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

Changes in product mix and the financial condition of customers;

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 identifying acquisition candidates and in acquiring and integrating such businesses;

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

Our success in implementing our strategic plans and the timely and successful completion and start-up of any capital projects;

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

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 our 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 success of the realignment of our businesses; and

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

Item 1. BUSINESS

Materion Corporation (our, we, or the Company), 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 end markets, including consumer electronics, industrial components, medical, automotive electronics, defense, telecommunications infrastructure, energy, commercial aerospace, and science. As of December 31, 2015, we had approximately 2,450 employees.

Our businesses are organized under three reportable segments: Performance Alloys and Composites, Advanced Materials, and Other. The Precision Coatings group, which includes the Precision Optics and Large Area Coatings businesses, is included in the Other segment. The Other reportable segment also includes unallocated corporate costs.

The cost of gold, silver, platinum, palladium, and copper can be quite volatile. The Company's pricing policy is to directly pass the cost of these metals on to the customer in order to mitigate the impact of metal price volatility on the results from operations. Trends and comparisons of net sales are affected by movements in the market prices of these metals, but changes in net sales due to metal price movements may not directly impact our profitability.

Internally, management reviews net sales on a value-added basis. Value-added sales is a non-GAAP measure that removes the impact of pass-through metal costs from net sales. Value-added sales allows management to assess the impact of differences in net sales between periods, segments, or markets and analyze the resulting margins and profitability without the distortion of the movements in the pass-through metal values. The dollar amount of gross margin and operating profit is not affected by the value-added sales calculation. The Company sells other metals and materials that are not considered direct pass-throughs, and these costs are not deducted from net sales when calculating value-added sales.

Beginning with the first quarter of 2013, the Company reported value-added sales and margins externally. By presenting information on net sales and value-added sales, it is the Company's intention to allow users of its financial statements to review net sales with and without the impact of the pass-through metals. Refer to Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operations" for a reconciliation of net sales to value-added sales.

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. In addition, this web site allows investors and other interested persons to sign up to automatically receive e-mail alerts when we post press 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 Form 10-K is not incorporated by reference into this Form 10-K unless expressly noted.

PERFORMANCE ALLOYS AND COMPOSITES

The Performance Alloys and Composites segment is comprised of the following operating units:

Performance Metals produces strip and bulk form alloy products, beryllium-based metals, beryllium and aluminum metal matrix composites, in rod, sheet, foil, and a variety of customized forms, beryllia ceramics, and bulk metallic glass materials at manufacturing facilities in the United States, Europe, and Asia. The segment also operates the world's largest bertrandite ore mine and refinery in Utah, providing feedstock hydroxide for its beryllium business and external sale.

- 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, shielding, and bearings. Major end markets for strip products include consumer electronics, telecommunications infrastructure, automotive electronics, appliance, and medical. Performance Metals strip product form competes with strip from many companies around the world that produce alloys with similar properties as beryllium and non-beryllium-containing alloys. Key competitors include NGK Insulators, Global Brass and Copper, Inc.; Wieland Electric, Inc.; Aurubis Stolberg GmbH, Diehl Metall Stiftung & Co. KG; Nippon Mining, and PMX Industries, Inc.

- 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' net sales is from non-beryllium-containing alloys as a result of product diversification efforts. Applications for bulk products include oil and gas drilling and production components, bearings, bushings, welding rods, plastic mold tooling, and undersea telecommunications housing equipment. Major end markets for bulk products include industrial components, commercial aerospace, energy, and telecommunications infrastructure. Performance Metals' bulk products compete with companies around the world that produce alloys with similar properties. Key competitors include NGK Insulators, International Beryllium Corp., Ningxia Orient Tantalum Industry Co., Ltd. in China, Ulba Metallurgical JSC of Kazakhstan, Le Bronze Industriel, KME Germany AG & Co. KG; Aurubis AG, MKM Mansfelder Kupfer und Messing GmbH, AMPCO Metal, and Chuetsu Metal Works Ltd. Japan.

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. Additional facilities are located in California, Arizona, and England.

- 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, for beryllium products. Net sales of beryllium hydroxide to NGK Insulators, Ltd. from the Utah operations were approximately 5% of Performance Metals' total net sales in each of the three most recent years.

- Beryllium products manufactures beryllium and aluminum metal matrix composites (MMCs), beryllia ceramics, and bulk metallic glass materials. 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. Defense and science are the largest markets for beryllium products, while other end markets served include industrial components, commercial aerospace, medical, energy, and telecommunications infrastructure. Products are also sold for acoustics, optical scanning, and performance automotive applications. While Performance Metals is the only domestic producer of metallic beryllium, it competes primarily with designs utilizing other materials including metals, MMCs, and organic composites. Our aluminum powder metal MMCs compete with DWA Aluminum Composites and cast MMCs made by Duralcan USA. Electronic components utilizing beryllia and alumina ceramics are used in the industrial components, medical, defense, telecommunications infrastructure, commercial aerospace, and science end markets. Direct competitors include American Beryllia Inc., CBL Ceramics Limited, and CoorsTek, Inc. Manufacturing facilities for beryllium products are located in Ohio, California, Arizona, and England.

Technical Materials produces strip metal products with clad inlay and overlay metals, including precious and base metals electroplated systems, electron beam welded systems, contour profiled systems, and solder-coated metal systems. This operating unit is located in Lincoln, Rhode Island and shares service and distribution centers with Performance Metals in Europe and Asia. 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 metal 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 end markets are automotive electronics and consumer electronics. The energy and medical end markets are smaller but offer further growth opportunities. Technical Materials' products are manufactured at our Lincoln, Rhode Island facility and are sold directly and through its sales representatives. Technical Materials' major competitors include Heraeus Inc., AMI Doduco, Inc., and other North American continuous strip and plating companies.

Performance Alloys and Composites — Sales and Backlog

Net sales for this segment were $394.8 million, or 39% of total net sales, in 2015; $433.3 million, or 38% of total net sales, in 2014; and $422.9 million, or 36% of total net sales, in 2013. Value-added sales were $335.1 million, or 54% of total value-added sales, in 2015; $358.5 million, or 56% of total value-added sales, in 2014; and $339.9 million, or 56% of total value-added sales, in 2013. As of December 31, 2015, Performance Alloys and Composites had approximately 1,330 employees.

Sales were made to approximately 2,000 customers in 2015. Government sales in 2015, 2014, and 2013 accounted for less than 1% of segment sales. Sales outside the United States, principally to Europe and Asia, accounted for approximately 43% of net segment sales in 2015, 46% of net segment sales in 2014, and 45% of net segment sales in 2013. Other segment reporting and geographic information is contained in Note C to the Consolidated Financial

Statements, which can be found in Item 8 of this Form 10-K and which is incorporated herein by reference.
The backlog of unshipped orders for Performance Alloys and Composites as of December 31, 2015, 2014, and 2013 was $98.6 million, $144.2 million, and $178.8 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, 2015 will be filled during 2016.

Performance Alloys 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 $5.9 million in 2015, $6.3 million in 2014, and $5.4 million in 2013. A staff of 10 scientists, engineers, and technicians was employed in this effort as of December 31, 2015.

ADVANCED MATERIALS

Advanced Materials produces advanced chemicals, microelectronics packaging, precious metal, non-precious metal, and specialty metal products, including vapor deposition targets, frame lid assemblies, clad and precious metal pre-forms, high temperature braze materials, and ultra-fine wire. These products are used in semiconductor, wireless, LED, and data storage applications within the consumer electronics, industrial components, and telecommunications infrastructure end markets. Other key end markets for these products include energy, medical, defense, and science. Advanced Materials also has metal recovery operations and in-house refineries that allow for the reclaim of precious metals from internally generated or customers' scrap.

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

The majority of the sales into the consumer electronics end market from this segment are vapor deposition targets, lids, wire, other related precious and non-precious metal products, and advanced chemicals for semiconductors and other microelectronic applications. These materials are used in wireless, LED, handheld devices and other applications, as well as in a number of applications within the defense end market. Since we are an up-front material supplier, changes in our consumer electronics sales levels do not necessarily correspond to changes in the end-use consumer demand in the same period due to down-stream inventory positions, the time to develop and deploy new products, and manufacturing lead times and scheduling. While our product and market development efforts allow us to capture new applications, we may lose existing applications and customers from time to time due to the rapid change in technologies and other factors.

Advanced Materials — Sales and Backlog

Net sales for this segment were $482.3 million, or 47% of total net sales, in 2015; $547.3 million, or 49% of total net sales, in 2014; and $592.0 million, or 51% of total net sales, in 2013. Value-added sales were $182.8 million, or 30% of total value-added sales, in 2015; $181.0 million, or 28% of total value-added sales, in 2014; and $168.6 million, or 28% of total value-added sales, in 2013. As of December 31, 2015, Advanced Materials had approximately 660 employees.

Sales were made to approximately 1,700 customers in 2015. Government sales accounted for less than 1% of the sales volume in 2015, 2014, and 2013. Sales outside the United States, principally to Europe and Asia, accounted for approximately 37% of net segment sales in 2015, 29% of net segment sales in 2014, and 22% of net segment sales in 2013. Other segment reporting and geographic information is contained in Note C to the Consolidated Financial Statements, which can be found in Item 8 of this Form 10-K and which is incorporated herein by reference.

The backlog of unshipped orders for Advanced Materials as of December 31, 2015, 2014, and 2013 was $22.0 million, $17.8 million, and $19.2 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, 2015 will be filled during 2016.

Advanced 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 Advanced Materials amounted to $2.9 million in 2015, $2.6 million in 2014, and $3.3 million in 2013. A staff of 16 scientists, engineers, and technicians was employed in this effort as of December 31, 2015.

OTHER

The Other segment is comprised of the Precision Coatings group and unallocated corporate costs. The Precision Coatings group includes the following operating units:

Precision Optics produces sputter-coated precision thin film coatings and optical filter materials. Based in Westford, Massachusetts, the group has manufacturing facilities in the United States and China.

Large Area Coatings produces sputter-coated and precision thin film materials. Based in Windsor, Connecticut, the business manufactures and distributes coated material primarily for medical testing and diagnosis applications. Precision Coatings products are sold directly from its facilities throughout the United States and Asia, as well as through direct sales offices and independent sales representatives throughout the world. Principal competition includes companies such as JDS Uniphase Corporation and Saint-Gobain S.A. and a number of smaller regional and national suppliers.

Other — Sales and Backlog

Net sales for this segment were $148.2 million, or 14% of total net sales, in 2015; $146.3 million, or 13% of total net sales, in 2014; and $152.0 million, or 13% of total net sales, in 2013. Value-added sales were $99.3 million, or 16% of total value-added sales, in 2015; $97.6 million, or 15% of total value-added sales, in 2014; and $100.6 million, or 17% of total value-added sales, in 2013. As of December 31, 2015, Other had approximately 460 employees.

Sales were made to approximately 340 customers in 2015. Government sales accounted for less than 1% of the sales volume in 2015, 2014, and 2013. Sales outside the United States, principally to Europe and Asia, accounted for approximately 25% of net segment sales in 2015, 27% of net segment sales in 2014, and 24% of net segment sales in 2013. Other segment reporting and geographic information is contained in Note C to the Consolidated Financial Statements, which can be found in Item 8 of this Form 10-K and which is incorporated herein by reference.

The backlog of unshipped orders for Precision Coatings as of December 31, 2015, 2014, and 2013 was $36.4 million, $35.0 million, and $34.4 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, 2015 will be filled during 2016.

Other — 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 Precision Optics and Large Area Coatings amounted to $4.0 million in 2015, $4.0 million in 2014, and $4.7 million in 2013. A staff of eight scientists, engineers, and technicians was employed in this effort as of December 31, 2015.

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 "Management's Discussion and Analysis of Financial Condition and Results of Operations." The availability of these raw materials, as well as other materials used by us, is adequate and generally not dependent on any one supplier.

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 United States Occupational Safety and Health Administration (OSHA) and by other governmental and 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

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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 | 63 | 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 Corporation, 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 the Board of Directors of KeyCorp since 2012. |
| Joseph P. Kelley | 43 | Vice President, Finance and Chief Financial Officer. Mr. Kelley was appointed Vice President, Finance and Chief Financial Officer effective January 2015. He had served as Vice President Finance since October 2013 and as Vice President, Finance for the Advanced Materials Group from December 2011 until October 2013. Prior to joining Materion, Mr. Kelley served as Vice President of Planning and Investor Relations at PolyOne Corporation (specialized polymer materials, services, and solutions) since 2009. Earlier, he had served in progressively responsible financial management positions in North America and Europe with Lincoln Electric Holdings, Inc.; CNH Global NV, Lante Corporation, and PricewaterhouseCoopers LLP. |
| Gregory R. Chemnitz | 58 | 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. |

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.

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, industrial components, medical, automotive electronics, defense, telecommunications infrastructure, energy, commercial aerospace, and science 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 oil and gas industries, the rate of construction of telecommunications infrastructure equipment, and government spending on defense.

Also, in times when growth rates in our markets are lower, 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 quarter could also harm our results of operations. For example, we have experienced customers building inventory in anticipation of increased demand, whereas in other periods, demand decreased because our customers had excess inventory.

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

In 2015, 8% of our value-added sales was derived from sales to customers in the defense end 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. Furthermore, significant reductions to defense spending could occur over the next several years due to government spending cuts, which could have a significant adverse impact on us. For example, high-margin defense application delays and/or push-outs may adversely impact our results of operations, including quarterly earnings.

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 comprised 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.

The availability of competitive substitute materials for beryllium-containing products may reduce our customers' demand for these products and reduce our net 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 beryllium-containing products may decrease, which could reduce our net sales.

Our long 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.

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 U.S. and foreign competitors, anticipated or perceived shortages, and other factors. Precious metal prices, including prices for gold and silver, have fluctuated significantly in recent years. Higher prices can cause adjustments to our inventory carrying values, whether as a result of quantity discrepancies, normal manufacturing losses, differences in scrap rates, theft or other factors, which could have a negative impact on our profitability and cash flows. Also, the price of our products will generally increase in tandem with rising metal prices, as a result of changes in precious metal prices that are passed through to our customers, which could deter them from purchasing our products and adversely affect our net sales.

Further, we maintain some precious metals and copper on a consigned inventory basis. The owners of the precious metals and copper 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.

Utilizing precious metals 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.

When taking periodic physical inventories in our refinery operations, we reconcile the actual precious metals to what was estimated prior to the physical inventory count. 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, our 2013 gross margin was reduced by a net quarterly physical inventory adjustment totaling $2.2 million at our Albuquerque, New Mexico facility within the Advanced Materials segment. Higher precious metal prices may magnify the value of any potential inventory long or short.

Our ability to maintain effective internal control over financial reporting may be insufficient to allow us to accurately report our financial results or prevent fraud, and this could cause our financial statements to become materially misleading and adversely affect the trading price of our common stock.

We are required to maintain effective internal control over financial reporting to provide reasonable assurance with respect to the reliability of financial reporting and the preparation of our consolidated financial statements in accordance with generally accepted accounting principles. Internal control over financial reporting may not prevent or detect misstatements because of its inherent limitations, including the possibility of human error, the circumvention or overriding of controls, or fraud. Therefore, even effective internal controls can provide only reasonable assurance with respect to the preparation and fair presentation of financial statements. If we cannot provide reasonable assurance with respect to our financial statements and effectively prevent fraud, our financial statements could become materially misleading, which could adversely affect the trading price of our common stock. If we are not able to maintain the adequacy of our internal control over financial reporting, including any failure to implement required new or improved controls, or if we experience difficulties in their implementation, our business, financial condition, and operating results could be harmed. Any significant deficiency or material weakness in our internal control over financial reporting could affect investor confidence in the accuracy and completeness of our financial statements. As a result, our ability to obtain any additional financing on favorable terms or at all could be materially and adversely affected. This, in turn, could materially and adversely affect our business, financial condition, and the market value of our securities, and require us to incur additional costs to improve our internal control systems and procedures.

Because we maintain a significant inventory of precious metals, we may experience losses due to employee error and theft.

Because we manufacture products that contain precious metals, we maintain a significant amount of precious metals at certain of our manufacturing facilities. Accordingly, we are subject to the risk of precious metal shortages resulting from employee error and theft. For example, in 2013, the Company filed a claim with its insurance carrier for a theft of approximately $10 million of silver at its Albuquerque, New Mexico refinery, which was settled for $6.8 million in the second quarter of 2014.

While we maintain controls to prevent theft, including physical security measures, if our controls do not operate effectively or are structured ineffectively, our profitability could be adversely affected, including any charges that we might incur as a result of the shortage of our inventory and by costs associated with increased security, preventative measures, and insurance.

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. The destruction or closure of any of our manufacturing facilities or our mine for a significant period of time as a result of harsh weather, 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 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 net 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.

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 one or more of 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 net 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. 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. Additionally, price increases in fuel and electricity costs, such as those increases that may occur from climate change legislation or other environmental mandates, may increase our cost of operations.

Disruptions or volatility in global financial markets could adversely impact our financial performance.

Global economic conditions may cause volatility and disruptions in the capital and credit markets. Should global economic conditions deteriorate or access to credit markets be reduced, customers may experience difficulty in obtaining adequate financing, thereby impacting our net sales. Our exposure to bad debt losses may also increase if customers are unable to pay for products previously ordered. Negative or uncertain financial and macroeconomic conditions may have a significant adverse impact on our sales, profitability, and results of operations. If current global economic conditions deteriorate, it could trigger an economic downturn of the same severity as the one experienced in 2008 and 2009. This could have a negative impact on our sales.

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. Lower investment performance of our pension plan assets resulting from a decline in the stock market could significantly increase the unfunded liability 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, 2015 was a loss of approximately 3.0%. For pension accounting purposes in 2015, we assumed a 7.25% expected rate of return on pension assets.

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. As of December 31, 2015, for pension accounting purposes, we assumed a 4.375% discount rate for our domestic defined benefit plan compared to 4.0% as of December 31, 2014.

Based on current guidelines, assumptions, and estimates, including stock market prices and interest rates, we anticipate that we will make cash contributions of approximately $16.0 million to our pension plan in 2016. If our current assumptions and estimates are not correct, contributions in 2016 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-employment health benefits could be materially higher than we have predicted if our underlying assumptions prove to be incorrect.

We provide post-employment 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 have used a graded assumption schedule to assume the rate at which health care costs will increase. At December 31, 2015 and December 31, 2014, we assumed rates of 7.0%. We have assumed that this health care cost increase trend rate will decline in 0.5% increments to the ultimate trend rate of 5.0% by 2020.

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 $0.3 million at December 31, 2015.

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.

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, 2015 was $86.7 million. Any required non-cash impairment charge could significantly reduce this balance and have a material adverse impact on our reported financial position and results of operations.

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 strategy 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 "Quantitative and Qualitative Disclosures About Market Risk."

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 2008 and 2009 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.

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. In the event of a global economic downturn, 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 that 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.

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 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.

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

We are active in pursuing niche acquisitions. 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, or at all. 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.

Payment of dividends will depend on our future financial condition and performance.

Although our Board of Directors currently intends to continue the payment of regular quarterly cash dividends on shares of our common stock, the timing and amount of future dividends will depend on the Board's assessment of our operations, financial condition, projected liabilities, our compliance with contractual restrictions in our credit agreement, restrictions imposed by applicable laws, and other factors. We cannot guarantee that we will continue to declare dividends at the same or similar rates.

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

A significant portion of our net 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 38% of net sales in 2015, 35% in 2014, and 31% in 2013. 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. For example, during 2015, our competitors' pricing in euros and yen had a competitive advantage due to the strong U.S. dollar. The fair value of our net assets relating to outstanding foreign currency contracts was $0.3 million at December 31, 2015, 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 net euro and yen exposure, which could have an unfavorable impact on our results of operations.

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 net sales.

In addition to the risk of unanticipated warranty or recall expenses, our customer contracts may contain provisions that could cause us to incur penalties, be liable for damages, including liquidated damages, or incur other expenses, if we experience difficulties with respect to the functionality, deployment, operation, and availability of our products and services. In the event of late deliveries, late or improper installations or operations, failure to meet product or performance specifications or other product defects, or interruptions or delays in our managed service offerings, our customer contracts may expose us to penalties, liquidated damages, and other liabilities. In the event we were to incur contractual penalties, such as liquidated damages or other related costs that exceed our expectations, our business, financial condition, and operating results could be materially and adversely affected.

Our business could be adversely impacted if we fail to adequately address information 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, computer 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. Interruptions in our operations could adversely affect our results. Additionally, 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, and any additional investment to remedy or prevent such breaches could harm our financial condition and operating results.

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. Revenue from international operations (principally Europe and Asia) accounted for approximately 38% in 2015, 35% in 2014, and 31% in 2013 of net sales. We anticipate that international shipments will account for a significant portion of our net sales for the foreseeable future. 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 U.S. 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.

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. While 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 will always protect us from the reckless or criminal acts committed by our employees or agents. If we are found to be liable for FCPA violations or other anti-bribery laws, we could suffer from criminal or civil penalties or other sanctions, which could have a material adverse effect on our business.

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.
Although we have insurance which may be applicable in certain circumstances, 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.
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 (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. As of December 31, 2015, we had one CBD case outstanding.
The increased levels of scrutiny by federal, state, foreign, and international regulatory authorities could lead to 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.
We, as well as our customers, 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 U.S. and foreign 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 (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 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.

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. Catastrophic events could also affect other suppliers to our customers, or 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 net 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 or 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.

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

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, 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 net sales.

A security breach of customer, employee, supplier, or company information may have a material adverse effect on our business, financial condition, and results of operations.

In the conduct of our business, we collect, use, transmit, store, and report data on information systems and interact with customers, vendors, and employees. Increased global IT security threats and more sophisticated and targeted computer crime pose a risk to the security of our systems and networks and the confidentiality, availability, and integrity of our data. Despite our security measures, our IT systems and infrastructure may be vulnerable to customer viruses, cyber-attacks, security breaches caused by employee error or malfeasance, or other disruptions. Any such threat could compromise our networks and the information stored there could be accessed, publicly disclosed, lost, or stolen. A security breach of our computer systems could interrupt or damage our operations or harm our reputation, resulting in a loss of sales, operating profits, and assets. In addition, we could be subject to legal claims or proceedings, liability under laws that protect the privacy of personal information and regulatory penalties if confidential information relating to customers, suppliers, employees, or other parties is misappropriated from our computer systems.

Similar security threats exist with respect to the IT systems of our lenders, suppliers, consultants, advisers, and other third parties with whom we conduct business. A security breach of those computer systems could result in the loss, theft, or disclosure of confidential information and could also interrupt or damage our operations, harm our reputation, and subject us to legal claims.

Item 1B. UNRESOLVED STAFF COMMENTS

None.

Item 2. PROPERTIES

We operate manufacturing plants, service and distribution centers, and other facilities throughout the world. During 2015, 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, 2015, 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 [1][2][3] | Leased | 79,130 |
| Manufacturing Facilities | | |
| Albuquerque, New Mexico [2] | Owned/Leased/Subleased | 13,000/28,800/8,500 |
| Bloomfield, Connecticut [3] | Leased | 44,800 |
| Brewster, New York [2] | Leased | 75,000 |
| Buffalo, New York [2] | Owned | 97,000 |
| Delta, Utah [1] | Owned | 100,836 |
| Elmore, Ohio [1] | Owned/Leased | 681,000/191,000 |
| Farnborough, England [1] | Leased | 10,000 |
| Fremont, California [1] | Leased | 40,000 |
| Limerick, Ireland [2] | Leased | 18,000 |
| Lincoln, Rhode Island [1] | Owned/Leased | 130,000/28,000 |
| Lorain, Ohio [1] | Owned | 55,000 |
| Milwaukee, Wisconsin [2] | Owned | 98,750 |
| Reading, Pennsylvania [1] | Owned | 128,863 |
| Santa Clara, California [2] | Leased | 5,800 |
| Shanghai, China [3] | Leased | 101,400 |
| Singapore [2] | Leased | 24,500 |
| Subic Bay, Philippines [2] | Leased | 5,000 |
| Suzhou, China [2] | Leased | 21,743 |
| Taipei, Taiwan [2] | Leased | 10,311 |
| Tucson, Arizona [1] | Owned | 53,000 |
| Tyngsboro, Massachusetts [3] | Leased | 38,000 |
| Westford, Massachusetts [3] | Leased | 78,000 |
| Wheatfield, New York [2] | Owned | 35,000 |
| Windsor, Connecticut [3] | Leased | 34,700 |
| Service and Distribution Centers | | |
| Elmhurst, Illinois [1] | Leased | 28,500 |
| Fukaya, Japan [1] | Owned | 35,500 |
| Singapore [1] | Leased | 2,500 |
| Stuttgart, Germany [1] | Leased | 24,800 |
| Tokyo, Japan [1] | Leased | 7,200 |
| Warren, Michigan [1] | Leased | 34,500 |

(1) Performance Alloys and Composites

(2) Advanced Materials

(3) Other

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 "Management's Discussion and Analysis of Financial Condition and Results of Operations."

## 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 cases alleging that plaintiffs have contracted, or have been placed at risk of contracting, beryllium sensitization or CBD or other lung conditions as a result of exposure to beryllium (beryllium cases). The plaintiffs in beryllium cases seek recovery under negligence and various other legal theories and demand compensatory and often punitive damages, in many cases of an unspecified sum. Spouses of some plaintiffs claim loss of consortium.

### Beryllium Claims

As of December 31, 2015, our subsidiary, Materion Brush Inc., was a defendant in one beryllium case (involving three plaintiffs), as described more fully below. As of December 31, 2014, there was one pending beryllium case (involving three plaintiffs).

The Company is one of five defendants in a case filed on October 4, 2013 in the Superior Court of the State of Arizona, Maricopa County, titled Parmar et al. v. Dolphin, Inc. et al., CV 2013-012980. One plaintiff alleges that he contracted chronic beryllium disease from exposures that resulted from his employment at manufacturing facilities of Karsten Manufacturing Corporation (Karsten) in Arizona, and asserts claims for negligence, strict liability, and fraudulent concealment. His wife claims a loss of consortium. Another plaintiff alleges that he has been diagnosed with beryllium sensitization that resulted from his employment at Karsten, and asserts a claim for medical monitoring. Plaintiffs seek compensatory and punitive damages and/or medical monitoring in unspecified sums.

The Company was one of six defendants in a case filed on April 7, 2015 in the Superior Court of the State of California, Los Angeles County, titled Godoy et al. v. The Argen Corporation et al., BC578085. This was a survival and wrongful death complaint. The complaint alleged that the decedent worked at H. Kramer & Co. in California and alleged that he worked as a dental lab technician at various dental labs in California, and that he suffered from CBD and other injuries as a result of grinding, melting and handling beryllium-containing products. The complaint alleged causes of action for negligence, strict liability - failure to warn, strict liability - design defect, fraudulent concealment, and breach of implied warranties. Plaintiffs sought punitive damages in connection with the strict liability and fraudulent concealment causes of action. The survival action sought all damages sustained by decedent that he would have been entitled to recover had he lived, including punitive damages. The Company filed a demurrer on May 29, 2015. At a hearing on September 29, 2015, the court granted the demurrer, dismissing all claims against the Company, without leave to amend the complaint. On February 3, 2016, the plaintiffs filed a notice of appeal.

The Company has 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.

PART II

Item 5. MARKET FOR 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 15, 2016, there were 936 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 2015 and 2014 and the dividends declared per common share.

| | Stock Price Range | | |
|---|---|---|---|
| Fiscal Quarters | High | Low | Dividends |
| 2015 | | | |
| First | $39.96 | $31.95 | $0.085 |
| Second | 41.85 | 34.17 | 0.090 |
| Third | 36.53 | 28.83 | 0.090 |
| Fourth | 35.21 | 26.02 | 0.090 |
| 2014 | | | |
| First | $35.19 | $25.21 | $0.080 |
| Second | 37.96 | 31.69 | 0.085 |
| Third | 39.38 | 30.88 | 0.085 |
| Fourth | 40.60 | 26.64 | 0.085 |

We began paying dividends in June 2012. We expect to pay cash dividends in the future, subject to the continuing determination by our Board of Directors that paying dividends remains in the best interest of our shareholders. The agreements governing our credit facilities restrict the amount of cash dividends that we can pay. Any determinations by our Board of Directors to pay cash dividends in the future will take into account various factors, including our financial condition, results of operations, current and anticipated cash needs, plans for expansion, and restrictions under the agreements governing our credit facilities, and any agreement governing our future debt. We cannot provide assurance that dividends will be paid in the future or that, if paid, the dividends will be at the same amount or frequency.

On January 14, 2014, we announced that our Board of Directors had authorized the repurchase of up to $50.0 million of our common stock. In 2015, we purchased an aggregate of 212,165 shares at an average price of $33.60 totaling $7.1 million. We did not repurchase any shares of the Company's common stock during the fourth quarter of 2015. As of December 31, 2015, $20.6 million may still be purchased under the program.

Performance Graph

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

| | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|
| Materion Corporation | $100 | $63 | $67 | $82 | $94 | $76 |
| Russell 2000 | 100 | 96 | 111 | 155 | 162 | 155 |
| S&P SmallCap 600 | 100 | 101 | 117 | 166 | 175 | 172 |
| S&P SmallCap 600 - Materials | 100 | 92 | 115 | 156 | 157 | 116 |

The above graph assumes that the value of our common shares and each index was $100 on December 31, 2010 and that all applicable dividends were reinvested.

Item 6. SELECTED FINANCIAL DATA
Materion Corporation and Subsidiaries

| (Thousands except per share data) | 2015 | 2014 | 2013 | 2012 | 2011 |
|---|---|---|---|---|---|
| For the year | | | | | |
| Net sales | $1,025,272 | $1,126,890 | $1,166,882 | $1,273,078 | $1,526,730 |
| Cost of sales | 834,492 | 920,987 | 978,904 | 1,074,295 | 1,311,409 |
| Gross margin | 190,780 | 205,903 | 187,978 | 198,783 | 215,321 |
| Operating profit | 45,268 | 57,588 | 27,608 | 36,189 | 55,390 |
| Interest expense - net | 2,450 | 2,787 | 3,036 | 3,134 | 2,812 |
| Income before income taxes | 42,818 | 54,801 | 24,572 | 33,055 | 52,578 |
| Income taxes | 10,660 | 12,670 | 4,360 | 8,773 | 13,696 |
| Net income | 32,158 | 42,131 | 20,212 | 24,282 | 38,882 |
| Earnings per share of common stock: | | | | | |
| Basic | 1.60 | 2.06 | 0.98 | 1.19 | 1.91 |
| Diluted | 1.58 | 2.02 | 0.97 | 1.17 | 1.88 |
| Dividends per share of common stock | 0.355 | 0.335 | 0.315 | 0.225 | — |
| Depreciation and amortization | 38,471 | 43,516 | 42,328 | 37,695 | 44,194 |
| Capital expenditures | 29,505 | 29,312 | 27,848 | 34,088 | 28,187 |
| Mine development expenditures | 22,585 | 1,247 | 4,776 | 10,573 | 560 |
| Year-end position | | | | | |
| Net current assets | 249,608 | 282,628 | 266,248 | 251,922 | 231,230 |
| Ratio of current assets to current liabilities | 3.6 to 1 | 3.7 to 1 | 3.1 to 1 | 2.7 to 1 | 2.7 to 1 |
| Property, plant, and equipment: | | | | | |
| At cost | $833,834 | $800,671 | $782,879 | $779,785 | $752,726 |
| Cost less depreciation, depletion, and amortization | 263,629 | 247,588 | 261,893 | 272,542 | 263,398 |
| Total assets | 742,640 | 762,338 | 777,945 | 814,917 | 772,103 |
| Long-term liabilities | 157,182 | 173,890 | 153,296 | 203,335 | 184,143 |
| Long-term debt | 4,615 | 23,613 | 29,267 | 44,880 | 40,463 |
| Shareholders’ equity | 482,957 | 459,019 | 464,428 | 416,374 | 407,155 |
| Weighted-average number of shares of common stock outstanding: | | | | | |
| Basic | 20,097 | 20,461 | 20,571 | 20,418 | 20,365 |
| Diluted | 20,402 | 20,852 | 20,943 | 20,740 | 20,797 |

Capital expenditures shown above include amounts spent under government contracts for which reimbursements were received from the government in the amounts of $1.0 million in 2012 and $5.4 million in 2011.

Prior year amounts have been revised to correct an error in stock compensation expense. Refer to Note B to the Consolidated Financial Statements for additional detail.

Refer to Notes to Consolidated Financial Statements.

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 end markets, including consumer electronics, industrial components, medical, automotive electronics, defense, telecommunications infrastructure, energy, commercial aerospace, science, services, and appliance.

RESULTS OF OPERATIONS

| (Thousands except per share data) | 2015 | 2014 | 2013 |
|---|---|---|---|
| Net sales | $1,025,272 | $1,126,890 | $1,166,882 |
| Value-added sales | 617,247 | 637,073 | 609,091 |
| Gross margin | 190,780 | 205,903 | 187,978 |
| Gross margin as a % of Value-added sales | 31 % | 32 % | 31 % |
| Selling, general, and administrative (SG&A) expense | 129,941 | 136,487 | 132,476 |
| SG&A as a % of Value-added sales | 21 % | 21 % | 22 % |
| Research and development expense | 12,796 | 12,850 | 13,432 |
| R&D as a % of Value-added sales | 2 % | 2 % | 2 % |
| Other — net | 2,775 | (1,022 ) | 14,462 |
| Operating profit | 45,268 | 57,588 | 27,608 |
| Interest expense — net | 2,450 | 2,787 | 3,036 |
| Effective tax rate | 24.9 % | 23.1 % | 17.7 % |
| Net income | 32,158 | 42,131 | 20,212 |
| Diluted earnings per share | 1.58 | 2.02 | 0.97 |

Prior year amounts have been revised to correct an error in stock compensation expense. Refer to Note B to the Consolidated Financial Statements for additional detail.

2015 Compared to 2014

Net sales were $1.0 billion in 2015 compared to $1.1 billion in 2014, reflecting a decrease of $0.1 billion, or 9%. The decrease was due primarily to the impact of lower pass-through precious metal and copper prices, the negative impact of foreign exchange rates, and lower sales volume. The costs of gold, silver, platinum, palladium, and copper are typically passed through to customers and, therefore, movements in the prices of these metals will affect net sales, but may not have a proportionate impact on gross margin. The average prices for the metals we purchased in 2015 were lower than 2014. Changes in precious metal and copper prices negatively impacted net sales in 2015 by approximately $53.5 million when compared to 2014. The strengthening of the U.S. dollar, primarily against the euro and yen, had an approximate $14.9 million negative impact on net sales in 2015.

Value-added sales were $617.2 million in 2015, a decrease of 3% as compared to 2014 value-added sales of $637.1 million. Value-added sales is a non-GAAP measure that removes the impact of pass-through metal costs and allows for analysis without the distortion of the movement or volatility in metal prices. Internally, we manage our business on this basis, and a reconciliation of net sales to value-added sales is included herein.

Value-added sales to the consumer electronics end market, our largest end market accounting for approximately 26% of our total value-added sales in 2015, decreased $16.6 million or 9% from 2015 as compared to 2014. This decrease was primarily related to weakness in the projector display market within our Precision Coatings group.

Value-added sales to the energy end market, which accounted for 6% of our total value-added sales in 2015, decreased $16.6 million or 31% in 2015 as compared to 2014. This decrease was primarily related to a decline in exploration in the oil and gas sector of the market within the Performance Alloys and Composites segment and was slightly offset by valued-added sales growth in the solar and alternative energy sector of the market within the Advanced Materials segment.

Defense and industrial component end market sales, which collectively accounted for 23% of our total value-added sales in 2015, increased $22.1 million or 18% in 2015 as compared to 2014. Defense end market sales were higher due to new applications and the timing of government spending and related programs in the Performance Alloys and Composites segment. Industrial component end market sales increased due to higher sales into the plastics and sprinkler segments of the market in the Performance Alloys and Composites segment, coupled with sales increases in the display and optical components segments of the market in the Advanced Materials segment.

Gross margin was $190.8 million in 2015, or a 7% decrease from the $205.9 million gross margin recorded in 2014. Expressed as a percentage of value-added sales, gross margin declined from 32% in 2014 to 31% in 2015. The decrease in gross margin was primarily due to a combination of lower sales volume and the negative impact of foreign exchange. In addition, we recorded $0.7 million of expense in 2015 primarily for headcount reductions in our Precision Coatings group within our Other reportable segment to respond to weakening demand in the projector display segment of the consumer electronics end market.

SG&A expenses totaled $129.9 million in 2015, or a decrease of $6.5 million as compared to 2014. Expressed as a percentage of value-added sales, SG&A expenses were 21% in both 2015 and 2014. Charges related to cost reduction initiatives were more than offset by lower annual incentive compensation expense. We recorded $1.2 million of expense in 2015 for headcount reductions in our Precision Coatings group within our Other reportable segment and the elimination of executive positions. Annual incentive compensation and stock compensation expenses were $8.9 million lower in 2015 as compared to 2014 in conjunction with lower results.

Research and development (R&D) expenses consist primarily of direct personnel costs for pre-production evaluation and testing of new products, prototypes, and applications. R&D expense was relatively flat as a percentage of value-added sales at approximately 2% in both 2015 and 2014.

Other - net totaled $2.8 million of expense in 2015 and $1.0 million of income in 2014. The increase in Other-net in 2015 was primarily due to lower insurance and legal settlement gains in 2015 of $5.6 million related to construction of our beryllium pebble facility as compared to several one-time items in 2014 consisting of a $6.8 million favorable insurance settlement related to a precious metal theft claim, a $4.0 million favorable legal settlement related to construction of our beryllium pebble facility, and a $2.4 million net gain on the sale of used equipment. Other-net also included foreign currency hedge gains of $6.2 million in 2015. Refer to Note D in the Consolidated Financial Statements for the details of the major components of Other-net.

Operating profit was $45.3 million in 2015 compared to $57.6 million in 2014. The decrease is primarily due to lower gross margins of $15.1 million and a $3.8 million unfavorable change in Other-net, partially offset by lower SG&A expenses of $6.5 million.

Interest expense - net was $2.5 million in 2015 and $2.8 million in 2014. The lower expense in 2015 resulted from lower average outstanding debt levels.

Income tax expense for 2015 and 2014 was $10.7 million and $12.7 million, respectively. The effective tax rates for 2015 and 2014 were 24.9% and 23.1%, respectively. The effects of percentage depletion (a tax benefit resulting from our mining operations), foreign rate differential, the production deduction, the R&D tax credit, and other items were major causes of the differences between the effective and statutory rates in 2015 and 2014. Refer to Note G to the Consolidated Financial Statements for a reconciliation of the statutory and effective tax rates.

Net income was $32.2 million, or $1.58 per share diluted, in 2015, compared to $42.1 million, or $2.02 per share diluted, in 2014.

2014 Compared to 2013

Net sales were $1.1 billion in 2014, a decline of $40.0 million, or 3%, from net sales of $1.2 billion in 2013. The net sales comparisons between years were primarily affected by the pass-through of lower metal prices. The costs of gold, silver, platinum, palladium, and copper are typically passed through to customers and, therefore, movements in the prices of these metals will affect net sales, but may not have a proportionate impact on margins. The average prices for the metals we purchased in 2014 were lower than 2013. The net change in metal prices resulted in an estimated $58.7 million decrease in net sales in 2014 from 2013 and accounted for the reduction in net sales for the year.

Value-added sales of $637.1 million in 2014 increased $28.0 million or 5% compared to 2013. The year-over-year improvement in value-added sales was primarily driven by increases in value-added sales to the consumer electronics and medical end markets, partially offset by a decrease in sales to the defense end market.

Value-added sales to the consumer electronics end market, our largest end market accounting for approximately 28% of our total value-added sales in 2014, were 8% higher in 2014 versus 2013. The increase in value-added sales to the consumer electronics end market in 2014 was due to higher shipments for semiconductor, hand-held devices, and other applications.

Value-added sales to the medical end market, which accounted for 12% of total value-added sales in 2014, increased 17% in 2014 as compared to 2013. The increase in medical end market value-added sales was due to higher sales for nuclear medicine applications and higher shipments related to life science and medical research.

Defense end market sales, which accounted for 6% of total value-added sales in 2014, decreased 23% versus 2013. There was a decline in value-added sales largely due to government project delays and spending cuts.

Gross margin was $205.9 million in 2014, or 10% above the $188.0 million gross margin recorded in 2013. Expressed as a percentage of value-added sales, gross margin improved approximately 150 basis points from 31% in 2013 to 32% in 2014. The increased gross margin was a combination of improved leverage on value-added sales volume growth, improved yields at our Buffalo, New York facility, and facility consolidation and savings of approximately $4.9 million in 2014 related to product line rationalization initiatives undertaken late in 2013. In addition, gross margin in 2013 was negatively impacted by a quarterly physical inventory adjustment totaling $2.2 million at our Albuquerque, New Mexico facility.

SG&A expenses totaled $136.5 million in 2014, or an increase of $4.0 million as compared to 2013. SG&A increased in 2014 due to higher cash-based incentive compensation expense versus 2013, partially offset by a decrease in stock-based compensation expense. Stock-based compensation expense, including the expense for stock appreciation rights, restricted stock, and performance restricted shares, was $4.8 million in 2014 and $5.0 million in 2013. 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 plan objectives, movement in our stock price, forfeitures, vesting schedules, and other factors.

Expressed as a percentage of value-added sales, SG&A expenses remained relatively consistent at 21% and 22% in 2014 and 2013, respectively. Despite the higher incentive compensation expense in 2014, we leveraged our existing SG&A structure to handle value-added sales growth and continued to realize benefits of approximately $5.4 million in 2014 from recent rationalization actions in the Advanced Materials segment and Precision Coatings group taken in the fourth quarter of 2013. Corporate costs in 2013 also included legal and investigation expenses associated with the Albuquerque, New Mexico inventory loss and the related insurance claim and totaled $1.3 million.

R&D expenses were $12.9 million in 2014, a 4% decrease from the expense of $13.4 million in 2013. R&D expenses as a percentage of value-added sales remained consistent in 2014 versus 2013 at 2%.

Other - net totaled $1.0 million of income in 2014 and $14.5 million of expense in 2013. Refer to Note D in the Consolidated Financial Statements for the details of the major components of Other-net. The reduction in Other-net in 2014 was primarily due to several one-time items consisting of a $6.8 million favorable insurance settlement related to a precious metal theft claim, a $4.0 million favorable legal settlement related to construction of our beryllium pebble facility, and a $2.4 million net gain on the sale of used equipment. Other-net in 2013 also included $1.4 million of expense related to costs associated with our facility consolidation projects and one-time bank fees of $0.9 million associated with the renewal of metal consignment facilities.

Operating profit was $57.6 million, or 9% of value-added sales, in 2014 compared to $27.6 million, or 5% of value-added sales, in 2013. The higher operating profit in 2014 was due to improved gross margin from our businesses and other one-time gains included in other-net. Operating profit also benefited from lower expense on our domestic defined benefit pension plan and retiree medical plan. The decrease in pension expense from $13.3 million in 2013 to $9.4 million in 2014 was primarily due to changes in the discount rate. We recognized $0.7 million of income related to our retiree medical plan in 2014 as compared to $1.7 million of expense in 2013 due to a modification of the benefit formula for plan participants designed to lower costs for plan participants and us. Refer to Note N to the Consolidated Financial Statements.

Interest expense - net was $2.8 million in 2014 and $3.0 million in 2013. The lower expense in 2014 resulted from lower average outstanding debt levels.

Income tax expense for 2014 and 2013 was $12.7 million and $4.4 million, respectively. The effective tax rates for 2014 and 2013 were 23.1% and 17.7%, respectively. The effects of percentage depletion (a tax benefit resulting from our mining operations), foreign rate differential, the production deduction, the R&D tax credit, and other items were major causes of the differences between the effective and statutory rates in 2014 and 2013.

The R&D credit provided a tax benefit of $0.7 million in 2014 and $1.8 million in 2013. The difference between years is due to the fact that the 2013 benefit includes amounts related to both 2013 and 2012. The federal government did not extend the benefit of the tax credit for 2012 until January 2013. U.S. generally accepted accounting principles require us to record tax expense based upon the laws in effect at the end of the year. The effective tax rate in 2013 includes the benefit for 2013 and 2012.

Tax expense included net favorable discrete items totaling $1.5 million in 2014 and $1.4 million in 2013. Discrete items included reductions to unrecognized tax benefits due to the lapse of the statute of limitations and adjustments to the respective prior-year's tax returns in each year.
Refer to Note G to the Consolidated Financial Statements for a reconciliation of the statutory and effective tax rates.
Net income was $42.1 million, or $2.02 per share diluted, in 2014, compared to $20.2 million, or $0.97 per share diluted, in 2013.

Segment Disclosures

The Company consists of three reportable segments: Performance Alloys and Composites, Advanced Materials, and Other. The Other reportable segment includes the results of our Precision Optics and Large Area Coatings operating segments, which do not meet the quantitative thresholds for separate disclosure and are collectively referred to as our Precision Coatings group. The Other reportable segment also includes unallocated corporate costs. Refer to Note C to the Consolidated Financial Statements for additional business segment information.

Performance Alloys and Composites

| (Thousands) | 2015 | 2014 | 2013 |
|---|---|---|---|
| Net sales | $394,760 | $433,288 | $422,936 |
| Value-added sales | 335,136 | 358,511 | 339,903 |
| Operating profit | 23,560 | 33,290 | 30,737 |

2015 Compared to 2014

Net sales from the Performance Alloys and Composites segment of $394.8 million in 2015 were 9% lower than net sales of $433.3 million in 2014. Value-added sales of $335.1 million in 2015 were 7% lower than value-added sales of $358.5 million in 2014. Value-added sales in the energy end market were $19.2 million lower due to a significant decline in exploration in the oil and gas sector of the market.
Performance Alloys and Composites generated operating profit of $23.6 million, or 7% of value-added sales, in 2015 as compared to $33.3 million, or 9% of value-added sales, in 2014. The decline in operating profit in 2015 as compared to 2014 was due primarily to lower sales volume and the negative impact of foreign exchange rate movements of $9.6 million. This decrease was partially offset by foreign currency hedge gains of $6.2 million recorded in 2015, which partially offset the negative impact of foreign exchange rate movements on net sales and gross margin.

2014 Compared to 2013

Net sales from the Performance Alloys and Composites segment of $433.3 million in 2014 were 2% higher than net sales of $422.9 million in 2013. Net sales were higher due to improved product mix and an increase in sales volume, partially offset by lower copper prices on average in 2014 as compared to 2013, which lowered metal pass-through prices by an estimated $3.1 million.
Value-added sales of $358.5 million in 2014 were 5% higher than value-added sales of $339.9 million million in 2013. The increase in value-added sales was primarily driven by improved product mix and higher value-added sales into the medical and energy end markets, partially offset by lower value-added sales to the defense end market. Shipments of ToughMet® products in 2014 increased 19% as compared to 2013.
Value-added sales to the energy end market, which accounted for 12% of Performance Alloys and Composites total value-added sales in 2014, increased 12% in 2014 as compared to 2013. The increase in energy end market value-added sales was due to higher sales to the oil and gas industry.
Value-added sales to the medical end market, which accounted for 5% of Performance Alloys and Composites total value-added sales in 2014, increased 77% in 2014 as compared to 2013. The increase in medical end market value-added sales was due primarily to higher sales for nuclear medicine applications and the growth of oncology and imaging in emerging markets.
Defense end market sales, which accounted for 6% of total value-added sales in 2014, decreased 22% versus 2013. There was a decline in value-added sales largely due to government project delays and spending cuts.

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Performance Alloys and Composites generated operating profit of $33.3 million, or 9% of value-added sales, in 2014 as compared to $30.7 million, or 9% of value-added sales, in 2013 due to higher sales volume and improvements in manufacturing efficiencies. Production of beryllium pebbles increased 18% in 2014 as compared to 2013.

Advanced Materials

| (Thousands) | 2015 | 2014 | 2013 |
|---|---|---|---|
| Net sales | $482,288 | $547,282 | $591,972 |
| Value-added sales | 182,794 | 181,040 | 168,600 |
| Operating profit | 27,805 | 32,692 | 8,427 |

2015 Compared to 2014

Net sales from the Advanced Materials segment of $482.3 million in 2015 were 12% lower than net sales of $547.3 million in 2014 primarily due to the impact of lower pass-through metal prices of $42.2 million in 2015 as compared to 2014.

Value-added sales of $182.8 million were 1% higher than value-added sales of $181.0 million in 2014, which partially offset lower pass-through metal prices. Value-added sales to the consumer electronics end market, which represents the largest end market segment for Advanced Materials, accounted for 46% of total segment value-added sales in 2015 compared to 48% in 2014. The $3.8 million decrease in consumer electronics end market value-added sales in 2015 was due to lower volume of our products used in hand-held devices. This decrease was more than offset by increased valued-added sales in the industrial components and energy end markets. Value-added sales to the industrial components end market increased $2.9 million, or 16%, in 2015 compared to 2014 due primarily to strong demand in the display and optical component segments of the market. Energy end market value-added sales increased $2.6 million, or 22%, in 2015 as compared to 2014 as a result of stronger demand from the construction and solar segments of the market.

Advanced Materials generated operating profit of $27.8 million, or 15% of value-added sales, in 2015 as compared to $32.7 million, or 18% of value-added sales, in 2014. The decline in operating profit in 2015 as compared to 2014 was due to the recognition in 2014 of a $6.8 million insurance recovery related to a theft claim associated with a precious metal inventory loss at our Albuquerque, New Mexico facility in 2012. Improved value-added sales growth partially offset this impact.

2014 Compared to 2013

Net sales from the Advanced Materials segment of $547.3 million in 2014 were 8% lower than net sales of $592.0 million in 2013. Metal prices on average were lower in 2014 than 2013, and we estimate that lower pass-through metal prices reduced net sales by $51.4 million in 2014.

Value-added sales of $181.0 million were 7% higher than value-added sales of $168.6 million in 2013, which partially offset lower pass-through metal prices. The increase in value-added sales was primarily driven by higher value-added sales to the consumer electronics end market and increased volumes into the semiconductor industry and related precious metal cleaning services.

Value-added sales to the consumer electronics end market, which represents the largest end market segment for Advanced Materials and accounted for 48% of total segment value-added sales in 2014, increased 11% in 2014 as compared to 2013. The increase in consumer electronics end market value-added sales in 2014 as compared to 2013 was due to higher volume of our products used in hand-held devices.

Value-added sales to the services end market, which accounted for 16% of Advanced Materials total value-added sales in 2014, increased 11% in 2014 as compared to 2013. The increase in services end market value-added sales was due in part to higher refine and chamber cleaning volume tied directly to the increased shipments into the semiconductor end market.

Advanced Materials generated operating profit of $32.7 million, or 18% of value-added sales, in 2014 as compared to $8.4 million, or 5% of value-added sales, in 2013 due to higher value-added sales volumes, improvement in manufacturing yields in our precious metal operations, and manufacturing efficiencies resulting from facility consolidation and manufacturing rationalization efforts completed in late 2013. Manufacturing cost savings realized in 2014 related to the 2013 restructuring actions totaled $3.7 million. Operating profit in 2014 included a $6.8 million insurance recovery related to a theft claim associated with a precious metal inventory loss at our Albuquerque, New

Mexico facility in 2012.

Other

| (Thousands) | 2015 | 2014 | 2013 |
| --- | --- | --- | --- |
| Net sales | $148,224 | $146,320 | $151,974 |
| Value-added sales | 99,317 | 97,522 | 100,588 |
| Operating loss | (6,097) | (8,394) | (11,556) |

2015 Compared to 2014

The Other reportable segment in total includes the operating results of the Precision Coatings group and unallocated corporate costs.

Within the Other reportable segment, net sales for the Precision Coatings group were $148.4 million in 2015 as compared to $147.7 million in 2014, and value-added sales were $101.8 million in 2015 versus $102.4 million in 2014. Higher sales in the medical and defense end markets were partially offset by lower sales to the consumer electronics end market. Medical end market sales were up due to an increase in sales of precision precious metal-coated polymer films for blood glucose test strip applications. Defense end market sales were higher due to the timing of government spending and related programs. Lower sales to the consumer electronics end market were due to weakness in the projector display segment of the market.

Within the Other reportable segment, the Precision Coatings group reported an operating profit of $7.5 million, or 7% of value-added sales, in 2015 versus $9.3 million, or 9% of value-added sales, in 2014. The decrease in operating profit was primarily attributed to a $2.6 million gain on the sale of used equipment during 2014. Operating profit in 2015 also included $1.4 million of expense recorded primarily for headcount reductions to respond to weakening demand in the projector display segment of the consumer electronics end market. These decreases were partially offset by favorable product mix and an improvement in manufacturing yields.

The Other reportable segment also contains unallocated corporate costs. Corporate costs of $13.6 million in 2015 decreased $4.1 million as compared to $17.7 million in 2014. As a percent of value-added sales, corporate costs decreased to 2% in 2015 from 3% in 2014. The decrease in corporate costs was due to lower incentive compensation and stock compensation expense, partially offset by higher domestic pension expense and $0.5 million of severance costs associated with cost reduction initiatives.

2014 Compared to 2013

The Other reportable segment in total includes the operating results of the Precision Coatings group and unallocated corporate costs.

Within the Other reportable segment, net sales for the Precision Coatings group were $147.7 million in 2014 as compared to $152.3 million in 2013, and value-added sales were $102.4 million in 2014 versus $104.2 million in 2013. The slight decrease in value-added sales was primarily driven by lower sales to the defense end market, partially offset by higher sales to the consumer electronics and medical end markets. Lower sales to the defense end market were due to a reduction in sales of optics as a result of government spending patterns and cutbacks. Consumer electronics sales were up due to higher sales in projector display product applications. Medical end market sales were up slightly due to an increase in shipments for life science applications.

Within the Other reportable segment, the Precision Coatings group reported an operating profit of $9.3 million, or 9% of value-added sales, in 2014 versus $4.3 million, or 4% of value-added sales, in 2013 based on the aforementioned factors. Operating profit improved due to a reduction in manufacturing costs related to the closure of our Buellton, California facility and headcount reductions at our Westford, Massachusetts and Shanghai, China facilities in an effort to right-size our optic operations.

The Other reportable segment also contains unallocated corporate costs. Corporate costs of $17.7 million in 2014 increased $1.9 million as compared to $15.8 million in 2013. The increase in corporate costs was due primarily to an increase in incentive compensation expense as a result of improved financial performance.

International Sales and Operations

We operate in worldwide markets and our international customer base continues to expand geographically. In Asia, we have strategically located our facilities in Japan, Singapore, China, Korea, Taiwan, and the Philippines, while our European facilities are in Germany, the United Kingdom, and Ireland.
Our international operations provide a combination of manufacturing, finishing operations, local sales support, and distribution services and are designed to provide a cost-effective method of capturing the growing overseas demand for our products

over the long term. 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:

| (Thousands) | 2015 | | 2014 | | 2013 | |
|---|---|---|---|---|---|---|
| Asia | $247,174 | | $238,684 | | $196,040 | |
| Europe | 122,554 | | 136,561 | | 136,614 | |
| Rest of world | 16,108 | | 20,451 | | 23,580 | |
| Total | $385,836 | | $395,696 | | $356,234 | |
| Percent of total net sales | 38 | % | 35 | % | 31 | % |

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.

Total international sales decreased 2% in 2015 from 2014. Higher sales in the consumer electronics and telecommunications infrastructure end markets in Asia were more than offset by the negative impact of foreign exchange rates and lower sales volume in Europe.

Sales from European and certain Asian operations are primarily denominated in 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 short-term impact of fluctuating currency values on our consolidated operating profit. Refer to Note Q to the Consolidated Financial Statements.

Value-Added Sales - Reconciliation of Non-GAAP Measure

A reconciliation of net sales to value-added sales, a non-GAAP measure, for each reportable segment and for the Company in total for 2015, 2014, and 2013 is as follows:

| (Thousands) | 2015 | 2014 | 2013 |
|---|---|---|---|
| Net Sales | | | |
| Performance Alloys and Composites | $394,760 | $433,288 | $422,936 |
| Advanced Materials | 482,288 | 547,282 | 591,972 |
| Other | 148,224 | 146,320 | 151,974 |
| Total | $1,025,272 | $1,126,890 | $1,166,882 |
| | | | |
| Less: pass-through metal costs | | | |
| Performance Alloys and Composites | $59,624 | $74,777 | $83,033 |
| Advanced Materials | 299,494 | 366,242 | 423,372 |
| Other | 48,907 | 48,798 | 51,386 |
| Total | $408,025 | $489,817 | $557,791 |
| | | | |
| Value-added sales | | | |
| Performance Alloys and Composites | $335,136 | $358,511 | $339,903 |
| Advanced Materials | 182,794 | 181,040 | 168,600 |
| Other | 99,317 | 97,522 | 100,588 |
| Total | $617,247 | $637,073 | $609,091 |

The cost of gold, silver, platinum, palladium, and copper can be quite volatile. Our pricing policy is to directly pass the cost of these metals on to the customer in order to mitigate the impact of metal price volatility on our results from operations. Trends and comparisons of net sales are affected by movements in the market prices of these metals, but changes in net sales due to metal price movements may not have a proportionate impact on our profitability.

Internally, management reviews net sales on a value-added basis. Value-added sales are a non-GAAP measure that deducts the value of the pass-through metal costs from net sales. Value-added sales allow management to assess the impact of differences in net sales between periods, segments, or markets, and analyze the resulting margins and profitability without the distortion of movements in pass-through metal costs. The dollar amount of gross margin and operating profit is not affected by the value-added sales calculation. We sell other metals and materials that are not considered direct pass-throughs, and these costs are not deducted from net sales when calculating value-added sales.
Our net sales are also affected by changes in the use of customer-supplied metal. When we manufacture a precious metal product, the customer may purchase metal from us or may elect to provide its own metal, in which case we process the metal on a toll basis and the metal value does not flow through net sales or cost of sales. In either case, we generally earn our margin based upon our fabrication efforts. The relationship of this margin to net sales can change depending upon whether or not the product was made from our metal or the customer's metal. The use of value-added sales removes the potential distortion in the comparison of net sales caused by changes in the level of customer-supplied metal.

By presenting information on net sales and value-added sales, it is our intention to allow users of our financial statements to review our net sales with and without the impact of the pass-through metals.

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 CBD 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.

As of December 31, 2015, there was one beryllium case (involving three plaintiffs). The Company does not expect the resolution of this matter to have a material impact on the consolidated financial statements. Refer to Item 3 "Legal Proceedings."

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.

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 in the future.

Regulatory Matters

Standards for exposure to beryllium are under review by OSHA and by other governmental and private standard-setting organizations. 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

Cash Flow

A summary of cash flows provided from (used in) operating, investing, and financing activities is as follows:

| | Net cash provided from (used in) | | |
|---|---|---|---|
| (Thousands) | 2015 | 2014 | 2013 |
| Net cash provided by operating activities | $90,228 | $60,281 | $75,922 |
| Net cash (used in) investing activities | (52,032) | (27,471) | (32,587) |
| Net cash (used in) financing activities | (26,095) | (40,881) | (36,172) |
| Effects of exchange rate changes | (1,015) | (1,553) | (445) |
| Net change in cash and cash equivalents | $11,086 | $(9,624) | $6,718 |

Net cash provided from operations increased $29.9 million, or 50%, from 2014 primarily due to lower working capital requirements. Lower inventory levels generated $19.4 million of cash, compared to cash used of $30.4 million in 2014, primarily due to working capital reduction initiatives within the Performance Alloys and Composites segment. Reduced accounts receivable generated $14.8 million of cash, compared to cash used of $2.1 million in 2014. Accounts receivable decreased due to lower sales levels, primarily in the fourth quarter of 2015. Our three-month trailing days sales outstanding (DSO) was approximately 44 days at the end of 2015 versus 37 days at the end of 2014. These increases in operating cash flows were offset by lower net income. Also, accounts payable and accrued expenses used $18.0 million of cash, compared to generating cash of $6.2 million in 2014, primarily due to lower incentive compensation accruals.

Cash provided from operating activities decreased $15.6 million, or 21% in 2014 from 2013 primarily due to an increase in inventory levels. Of the total cash used in operations of $30.4 million that resulted in increased inventory levels, approximately $27.1 million of the increase from 2013 related to our Performance Alloys and Composites segment. Inventories increased due primarily to higher inventory quantities related to the continued ramp up of production of the beryllium pebble facility and the timing of production and stocking of inventory in key product lines in anticipation of future sales activity, as well as planned production equipment shutdowns in 2015. Production of beryllium pebbles in 2014 increased 18% as compared to 2013.

Price movements of precious and base metals are essentially passed 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.

Net cash used in investing activities increased $24.6 million from 2014 primarily due to the opening of a new pit to mine proven reserves of beryllium-bearing bertrandite ore in Juab County, Utah. Cash flows used in investing activities in 2014 includes $3.1 million in proceeds from the sale of property, plant, and equipment.

Net cash used in financing activities decreased $14.8 million from 2014 primarily due to lower repurchases of common stock under our share repurchase program. We repurchased 212,165 common shares for $7.1 million in 2015 as compared to the repurchase of 690,339 common shares for $22.3 million in 2014. At December 31, 2015, we had approximately $20.6 million remaining for share repurchases under the $50.0 million share repurchase program approved by the Board of Directors in 2014. See Part II, Item 5. "Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities," for additional information regarding share repurchases.

Dividends per common share increased 6% to $0.355 per share in 2015. Total dividend payments to common shareholders were $7.1 million in 2015, $6.9 million in 2014, and $6.5 million in 2013. In May 2015, the Board of Directors declared an increase in our quarterly dividend from $0.085 to $0.090 per share. We intend to pay a quarterly dividend on an ongoing basis, subject to a continuing strong capital structure and a determination that the dividend remains in the best interest of our shareholders.

Liquidity

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

31, 2015, cash and cash equivalents held by our foreign operations totaled $13.7 million. We do not expect restrictions on repatriation of cash held outside of the United States to have a material effect on our overall liquidity, financial condition, or the results of operations for the foreseeable future.

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 December 31, 2015 and December 31, 2014 is as follows:

| | December 31, | |
|---|---|---|
| (Thousands) | 2015 | 2014 |
| Total outstanding debt | $13,613 | $24,266 |
| Cash | 24,236 | 13,150 |
| Net (cash) debt | (10,623) | 11,116 |
| Available borrowing capacity | $221.8 | $229.4 |
| Debt-to-debt-plus-equity ratio | 3% | 5% |

Net debt 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. We reduced net debt from 2014 and, as a result, the debt-to-debt-plus-equity ratio improved to 3% as of December 31, 2015 from 5% as of December 31, 2014. We believe that based on our typical cash flow generated from operations, we can support a higher leverage ratio in future periods.

The available borrowing capacity in the table above represents the additional amounts that could be borrowed under our revolving credit facility and other secured lines existing as of the end 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 main cause for the decrease in the available borrowing capacity in 2015 as compared to 2014 was the impact of this covenant.

In 2015, we entered into an amendment to our $375.0 million revolving credit agreement (Credit Agreement). The amendment extends the maturity date of the Credit Agreement from 2018 to 2020 and provides more favorable pricing under certain circumstances. In addition, the amendment provides the Company and its subsidiaries with additional capacity to enter into facilities for the consignment, borrowing, or leasing of precious metals and copper, and provides enhanced flexibility to finance acquisitions and other strategic initiatives. The amended agreement includes an increase in the Credit Agreement's expansion option for additional uncommitted lines from $100.0 million to $300.0 million. The Credit Agreement is secured by substantially all of the assets of the Company and its direct subsidiaries, with the exception of non-mining real property and certain other assets. The Credit Agreement allows us to borrow money at a premium over LIBOR or prime rate and at varying maturities. The premium resets quarterly according to the terms and conditions available under the agreement.

The Credit Agreement includes restrictive covenants including incurring restrictions on additional indebtedness, acquisitions, dividends, and stock repurchases. In addition, the Credit Agreement includes covenants subject to a maximum leverage ratio and a minimum fixed charge coverage ratio. We were in compliance with all of our debt covenants as of December 31, 2015 and December 31, 2014. Cash on hand does not affect the covenants or the borrowing capacity under our debt agreements.

Portions of our business utilize off-balance sheet consignment arrangements to finance metal requirements. Expansion of business volumes and/or higher metal prices can put pressure on the consignment line limitations from time to time. As a result we have negotiated increases in the available capacity under existing lines, added additional lines, and extended the maturity dates of existing lines in recent years. The available and unused capacity under the metal financing lines totaled approximately $235.3 million as of December 31, 2015. The availability is determined by Board approved levels and actual line capacity.

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) | 2016 | 2017 | 2018 | 2019 | 2020 | There-after | Total |
|---|---|---|---|---|---|---|---|
| Total debt | $9.0 | $0.7 | $0.8 | $0.8 | $0.9 | $1.4 | $13.6 |
| Interest payments on total debt | 0.3 | 0.2 | 0.2 | 0.1 | 0.1 | — | 0.9 |
| Non-cancelable lease payments | 6.8 | 5.7 | 4.8 | 3.7 | 3.3 | 6.5 | 30.8 |
| Capital lease payments | 1.0 | 1.0 | 1.1 | 1.1 | 1.1 | 2.6 | 7.9 |
| Pension plan contribution | 16.0 | — | — | — | — | — | 16.0 |
| Other benefit payments | 1.4 | — | — | — | — | — | 1.4 |
| Other long-term liabilities | 0.6 | 0.5 | 2.7 | 0.4 | 0.6 | 0.9 | 5.7 |
| Total | $35.1 | $8.1 | $9.6 | $6.1 | $6.0 | $11.4 | $76.3 |

The amounts for long-term debt and interest payments assume that the respective debt instruments will be outstanding until their scheduled maturity dates.

The non-cancelable lease payments represent payments under operating leases with initial lease terms in excess of one year as of December 31, 2015. The capital lease payments include a building at the Elmore, Ohio site and other material capital leases. Refer to Note M to the Consolidated Financial Statements for further leasing details.

Our domestic defined benefit pension plan is under-funded as of December 31, 2015. Contributions in future periods will be dependent upon regulatory requirements, the plan funded ratio, plan investment performance, discount rates, actuarial assumptions, plan amendments, our contribution objectives, and other factors. Federal legislation enacted during 2012 resulted in a reduction in mandatory contributions in the short term from levels under the previous regulations, but we may elect to contribute funds in excess of the mandatory levels in a given year depending upon our cash flow from operations and other considerations. In 2016, we anticipate contributing approximately $16.0 million to our defined benefit domestic plan. This estimate is in excess of the mandatory contributions. This higher contribution level is designed to minimize our PBGC premium payments, as well as to maintain the plan funded ratio in line with our long-term objectives. We also anticipate funding those contributions with cash on hand, cash generated from operations, or borrowings under our existing lines of credit. It is not practical to estimate the required contributions beyond 2016 at the present time.

Other long-term liabilities include environmental remediation costs. 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 $5.7 million at December 31, 2015 and $4.9 million at December 31, 2014. Payments for environmental projects totaled $0.7 million in 2015 and $0.2 million in 2014. Environmental projects tend to be long term, and the associated payments are typically made over a number of years. Refer to Note R to the Consolidated Financial Statements for further discussion.

Off-balance Sheet Obligations

We maintain the majority of the precious metals and copper 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. Refer to Item 7A "Quantitative and Qualitative Disclosures about Market Risk." The notional value of off-balance sheet precious metals and copper was $214.7 million as of December 31, 2015 versus $310.6 million as of December 31, 2014. We were in compliance with all of the covenants contained in the consignment agreements as of December 31, 2015 and December 31, 2014.

ORE RESERVES

We have proven and probable reserves of beryllium-bearing bertrandite ore in Juab County, Utah. We own approximately 90 percent of the proven reserves, with the remaining reserves leased from the State of Utah. We augment our proven reserves of bertrandite ore through the purchase of imported beryl ore from time to time. This beryl ore, which is approximately 4 percent beryllium, is also processed at the Utah extraction facility. Approximately 87 percent of the beryllium in ore is recovered in the extraction process. Proven and probable reserves are based on extensive drilling, sampling, mine modeling, and metallurgical testing from which we determine economic feasibility. The term “proven reserves” means reserves for which (a) quantity is computed from dimensions revealed in outcrops, trenches, workings, or drill holes; grade and/or quality are computed from the results of detailed sampling and (b) the sites for inspection, sampling, and measurement are spaced so closely and the geologic character is so well defined that size, shape, depth, and mineral content of reserves are well-established, and (c) for which are commercially recoverable through open-pit methods.
The term “probable reserves” means reserves for which quantity and grade and/or quality are computed from information similar to that used for proven reserves, but the sites for inspection, sampling, and measurement are farther apart or are otherwise less adequately spaced. The degree of assurance, although lower than that for proven reserves, is high enough to assume continuity between points of observation.

| | Proven | | Probable | Total |
|---|---|---|---|---|
| As of December 31, 2015 | | | | |
| Tonnage (in thousands) | 6,049 | | 3,519 | 9,568 |
| Grade (% beryllium) | 0.259 | % | | |