

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

**Form 10-K**

(Mark One)

☒ **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  
(State or other jurisdiction of  
incorporation or organization)

34-1919973  
(I.R.S. Employer  
Identification No.)

6070 Parkland Blvd.,  
Mayfield Heights, Ohio  
(Address of principal executive offices)

44124  
(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

Common Stock, no par value

Name of Each Exchange on Which Registered

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 ☒

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 ☒

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 ☒ 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 ☒ No ☐

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

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

Large accelerated filer ☒ 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 ☒

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

### **PART I**

Item 1.	<a href="#"><u>Business</u></a>	<a href="#"><u>2</u></a>
Item 1A.	<a href="#"><u>Risk Factors</u></a>	<a href="#"><u>7</u></a>
Item 1B.	<a href="#"><u>Unresolved Staff Comments</u></a>	<a href="#"><u>15</u></a>
Item 2.	<a href="#"><u>Properties</u></a>	<a href="#"><u>16</u></a>
Item 3.	<a href="#"><u>Legal Proceedings</u></a>	<a href="#"><u>17</u></a>
Item 4.	<a href="#"><u>Mine Safety Disclosures</u></a>	<a href="#"><u>17</u></a>

### **PART II**

Item 5.	<a href="#"><u>Market for Registrant’s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities</u></a>	<a href="#"><u>18</u></a>
Item 6.	<a href="#"><u>Selected Financial Data</u></a>	<a href="#"><u>20</u></a>
Item 7.	<a href="#"><u>Management’s Discussion and Analysis of Financial Condition and Results of Operations</u></a>	<a href="#"><u>21</u></a>
Item 7A.	<a href="#"><u>Quantitative and Qualitative Disclosures About Market Risk</u></a>	<a href="#"><u>38</u></a>
Item 8.	<a href="#"><u>Financial Statements and Supplementary Data</u></a>	<a href="#"><u>40</u></a>
Item 9.	<a href="#"><u>Changes in and Disagreements with Accountants on Accounting and Financial Disclosure</u></a>	<a href="#"><u>78</u></a>
Item 9A.	<a href="#"><u>Controls and Procedures</u></a>	<a href="#"><u>78</u></a>
Item 9B.	<a href="#"><u>Other Information</u></a>	<a href="#"><u>78</u></a>

### **PART III**

Item 10.	<a href="#"><u>Directors, Executive Officers and Corporate Governance</u></a>	<a href="#"><u>79</u></a>
Item 11.	<a href="#"><u>Executive Compensation</u></a>	<a href="#"><u>79</u></a>
Item 12.	<a href="#"><u>Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters</u></a>	<a href="#"><u>80</u></a>
Item 13.	<a href="#"><u>Certain Relationships and Related Transactions, and Director Independence</u></a>	<a href="#"><u>80</u></a>
Item 14.	<a href="#"><u>Principal Accountant Fees and Services</u></a>	<a href="#"><u>80</u></a>

### **PART IV**

Item 15.	<a href="#"><u>Exhibits and Financial Statement Schedules</u></a>	<a href="#"><u>81</u></a>
	<a href="#"><u>Signatures</u></a>	<a href="#"><u>86</u></a>

---

## 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](http://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

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

<u>Name</u>	<u>Age</u>	<u>Positions and Offices</u>
Richard J. Hipple	63	<u>Chairman of the Board, President and Chief Executive Officer</u> . 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	<u>Vice President, Finance and Chief Financial Officer</u> . 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	<u>Vice President, General Counsel</u> . 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:

<u>Location</u>	<u>Owned or Leased</u>	<u>Approximate Number of Square Feet</u>
<b><i>Corporate and Administrative Offices</i></b>		
Mayfield Heights, Ohio <sup>(1)(2)(3)</sup>	Leased	79,130
<b><i>Manufacturing Facilities</i></b>		
Albuquerque, New Mexico <sup>(2)</sup>	Owned/Leased/Subleased	13,000/28,800/8,500
Bloomfield, Connecticut <sup>(3)</sup>	Leased	44,800
Brewster, New York <sup>(2)</sup>	Leased	75,000
Buffalo, New York <sup>(2)</sup>	Owned	97,000
Delta, Utah <sup>(1)</sup>	Owned	100,836
Elmore, Ohio <sup>(1)</sup>	Owned/Leased	681,000/191,000
Farnborough, England <sup>(1)</sup>	Leased	10,000
Fremont, California <sup>(1)</sup>	Leased	40,000
Limerick, Ireland <sup>(2)</sup>	Leased	18,000
Lincoln, Rhode Island <sup>(1)</sup>	Owned/Leased	130,000/28,000
Lorain, Ohio <sup>(1)</sup>	Owned	55,000
Milwaukee, Wisconsin <sup>(2)</sup>	Owned	98,750
Reading, Pennsylvania <sup>(1)</sup>	Owned	128,863
Santa Clara, California <sup>(2)</sup>	Leased	5,800
Shanghai, China <sup>(3)</sup>	Leased	101,400
Singapore <sup>(2)</sup>	Leased	24,500
Subic Bay, Philippines <sup>(2)</sup>	Leased	5,000
Suzhou, China <sup>(2)</sup>	Leased	21,743
Taipei, Taiwan <sup>(2)</sup>	Leased	10,311
Tucson, Arizona <sup>(1)</sup>	Owned	53,000
Tyngsboro, Massachusetts <sup>(3)</sup>	Leased	38,000
Westford, Massachusetts <sup>(3)</sup>	Leased	78,000
Wheatfield, New York <sup>(2)</sup>	Owned	35,000
Windsor, Connecticut <sup>(3)</sup>	Leased	34,700
<b><i>Service and Distribution Centers</i></b>		
Elmhurst, Illinois <sup>(1)</sup>	Leased	28,500
Fukaya, Japan <sup>(1)</sup>	Owned	35,500
Singapore <sup>(1)</sup>	Leased	2,500
Stuttgart, Germany <sup>(1)</sup>	Leased	24,800
Tokyo, Japan <sup>(1)</sup>	Leased	7,200
Warren, Michigan <sup>(1)</sup>	Leased	34,500

<sup>(1)</sup> Performance Alloys and Composites

<sup>(2)</sup> Advanced Materials

<sup>(3)</sup> 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.

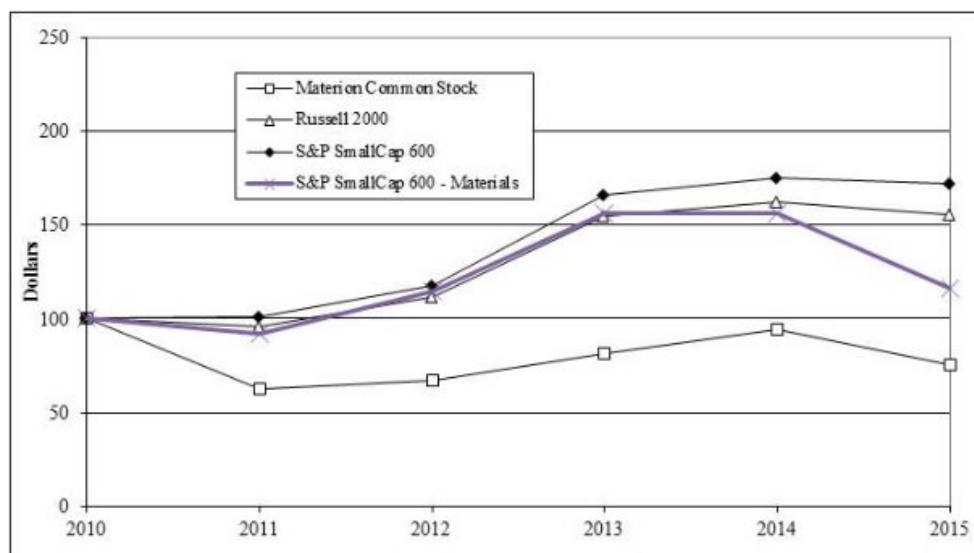
Fiscal Quarters	Stock Price Range		Dividends
	High	Low	
2015			
First	\$ 39.96	\$ 31.95	\$ 0.085
Second	41.85	34.17	0.090
Third	36.53	28.83	0.090
Fourth	35.21	26.02	0.090
2014			
First	\$ 35.19	\$ 25.21	\$ 0.080
Second	37.96	31.69	0.085
Third	39.38	30.88	0.085
Fourth	40.60	26.64	0.085

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
<b>For the year</b>					
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
<b>Year-end position</b>					
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 value-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 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<sup>®</sup> 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.

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 value-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
<b>Net Sales</b>			
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
<b>Less: pass-through metal costs</b>			
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
<b>Value-added sales</b>			
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:

(Thousands)	Net cash provided from (used in)		
	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:

(Thousands)	December 31,	
	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
<b>As of December 31, 2015</b>			
Tonnage (in thousands)	6,049	3,519	9,568
Grade (% beryllium)	0.259%	0.232%	0.249%
Beryllium pounds (in millions)	31.35	16.33	47.68

<b>As of December 31, 2014</b>			
Tonnage (in thousands)	6,122	3,519	9,641
Grade (% beryllium)	0.262%	0.232%	0.251%
Beryllium pounds (in millions)	32.02	16.33	48.35

Based upon average production levels in recent years and our near-term production forecasts, proven reserves would last approximately 70 years. Efforts are underway to further analyze, quantify, and develop the reserves classified as probable. The inclusion of probable reserves as proven reserves could provide more than 25 years of additional reserve life. The table below details our production of beryllium at our Utah location.

<b>(Thousands of Pounds of Beryllium)</b>	2015	2014	2013
Domestic ore	439	593	514
Non-domestic ore	26	21	17
Unyielded total	465	614	531
Annual yield	89%	89%	85%
Beryllium produced	412	546	450
% of mill capacity	55%	73%	60%

## CRITICAL ACCOUNTING POLICIES

The preparation of financial statements in conformity with accounting principles generally accepted in the United States requires the inherent use of estimates and management’s judgment in establishing those estimates. The following policies are considered by management to be critical because adherence to these policies relies significantly upon our judgment.

### Accrued Liabilities

We have various accruals on our balance sheet that are based in part upon our judgment, including accruals for litigation, environmental remediation, and workers’ compensation costs. When a loss is probable, we establish accrual balances based on the reasonably estimable loss or range of loss as determined by a review of the available facts and circumstances by management and independent advisors and specialists, as appropriate. When no point of loss is more likely than another, the accrual is established

at the low end of the estimated reasonable range. Litigation and environmental accruals are established only for identified and/or asserted claims; future claims, therefore, could give rise to increases to the accruals. The accruals are adjusted as facts and circumstances change, as well as for changes in our strategies or the pertinent regulatory requirements. Since these accruals are estimates, the ultimate resolution may be greater or less than the established accrual balance for a variety of reasons, including court decisions, additional discovery, inflation levels, cost control efforts, and resolution of similar cases. Changes to the accruals would then result in an additional charge or credit to the income statement in the period when the change is made. Refer to Note R to the Consolidated Financial Statements.

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

Non-employee claims for chronic beryllium disease are covered by insurance, subject to certain limitations. The insurance covers defense costs and indemnity payments (resulting from settlements or court verdicts) and is subject to various levels of deductibles. In 2015 and 2014, defense and indemnity costs were less than the deductible.

## **Pensions**

Carrying values of the defined benefit pension plan assets and liabilities are determined on an actuarial basis using numerous actuarial and financial assumptions. Differences between the assumptions and current period actual results are typically deferred into the net pension asset or liability value and amortized in the Consolidated Statement of Income under established guidelines. The deferral process generally reduces the volatility of the recognized net pension asset or liability and current period income or expense. Unrealized gains or losses are recorded in other comprehensive income (OCI), a component of shareholders' equity.

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

We establish the discount rate used to determine the present value of the projected and accumulated benefit obligation at the end of each year based upon the available market rates for high quality, fixed income investments whose maturities match the plan's projected cash flows. An increase to the discount rate would reduce the present value of the projected benefit obligation and future pension expense and, conversely, a lower discount rate would raise the benefit obligation and future pension expense. For our domestic defined benefit pension plan, the discount rate was 4.375% and 4.0% at December 31, 2015 and December 31, 2014, respectively.

Our pension plan investment strategies are governed by a policy adopted by the Board of Directors. A senior management team oversees a group of outside investment analysts and brokerage firms that implement these strategies. The future return on pension assets is dependent upon the plan's asset allocation, which changes from time to time, and the performance of the underlying investments. As a result of our review of various factors, we used an expected rate of return on plan assets assumption of 7.25% at both December 31, 2015 and December 31, 2014. This assumption is reflective of management's view of the long-term returns in the market place, as well as changes in risk profiles and available investments. Should the assets earn an average return less than 7.25% over time, in all likelihood the future pension expense would increase. Investment earnings in excess of 7.25% would tend to reduce future expense.

The impact of a change in the discount rate or expected rate of return assumption on pension expense can vary from year to year depending upon the undiscounted liability level, the current discount rate, the asset balance, other changes to the plan, and other factors. A 0.25 percentage point decrease to the discount rate would increase the 2016 projected pension expense approximately \$0.7 million. A 0.25 percentage point decrease in the expected rate of return assumption would increase the 2016 projected pension expense by approximately \$0.5 million.

Refer to Note N to the Consolidated Financial Statements for additional details on our pension and other retirement plans.

## **LIFO Inventory**

The prices of certain major raw materials that we use, including copper, nickel, gold, silver, and other precious metals, fluctuate during a given year. Where possible, such changes in material costs, in either direction, are generally reflected in selling price adjustments, particularly with precious metals and copper.

The prices of labor and other factors of production, including supplies and utilities, generally increase with inflation. Portions of these cost increases may be offset by manufacturing improvements and other efficiencies. From time to time, we will revise our billing practices to include an energy surcharge in an attempt to recover a portion of our higher energy costs from our customers. However, market factors, alternative materials, and competitive pricing may limit our ability to offset all or a portion of a cost increase with higher prices.

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

The LIFO impact on the income statement in any given year is dependent upon the inflation rate effect on raw material purchases and manufacturing conversion costs, the level of purchases in a given year, and changes in the inventory mix and quantities.

## **Deferred Taxes**

We record deferred tax assets and liabilities based upon the temporary difference between the financial reporting and tax basis of assets and liabilities. If it is more likely than not that some portion or all of the deferred tax assets will not be realized, a valuation allowance is established. All available evidence, both positive and negative, is considered to determine whether a valuation allowance is needed. We review the expiration dates of certain deferred tax assets against projected income levels to determine if a valuation allowance is needed. Certain deferred tax assets do not have an expiration date. We also evaluate deferred tax assets for realizability due to cumulative operating losses by jurisdiction and record a valuation allowance as warranted. A valuation allowance may increase tax expense and reduce net income in the period it is recorded. If a valuation allowance is no longer required, it will reduce tax expense and increase net income in the period that it is reversed.

We had valuation allowances of \$2.8 million associated with state and foreign deferred tax assets as of year-end 2015, primarily for net operating loss carryforwards.

Refer to Note G to the Consolidated Financial Statements for additional deferred tax details.

## **Unearned revenue**

Billings to customers in advance of the shipment of the goods are initially recorded as unearned revenue, which is a liability on our Consolidated Balance Sheets. This liability is subsequently reversed and the revenue, cost of sales, and gross margin are recorded when the goods are shipped, title passes to the customer, and all other revenue recognition criteria are satisfied. The related inventory also remains on our balance sheet until these revenue recognition criteria are met. Advanced billings are typically made in association with products with long manufacturing times and/or products paid with funds from a customer's contract with the government. Billings in advance of the shipments allow us to collect cash earlier than billing at the time of the shipment and, therefore, the collected cash can be used to reduce our investment in working capital. The unearned revenue balance was \$3.7 million as of year-end 2015.

## **Precious metal physical inventory counts**

We take and record the results of a physical inventory count of our precious metals on a quarterly basis. Our precious metal operations include a refinery that processes precious metal-containing scrap and other materials from our customers as well as our own internally generated scrap. We also outsource portions of our refining requirements to other vendors, particularly those materials with longer processing times. The precious metal content within these various refine streams may be in solutions, sludges, and other non-homogeneous forms and can vary over time based upon the input materials, yield rates, and other process parameters. The determination of the weight of the precious metal content within the refine streams as part of a physical inventory count requires the use of estimates and calculations based upon assays, assumed recovery percentages developed from actual historical data and other analyses, the total estimated volumes of solutions and other materials within the refinery, data from our refine vendors, and other factors. The resulting calculated weight of the precious metals in our refine operations may differ, in

either direction, from what our records indicate that we should have on hand, which would then result in an adjustment to our pre-tax income in the period when the physical inventory was taken and the related estimates were made.

## **Derivatives**

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

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

Our practice has been to secure hedge contracts denominated in the same manner as the underlying exposure; for example, a yen exposure will only be hedged with a yen contract and not with a surrogate currency and a silver exposure will only be hedged with a silver contract and not a gold contract. We also typically secure contracts through financial institutions that support us in our Credit Agreement.

Refer to Note Q to the Consolidated Financial Statements and Item 7A "Quantitative and Qualitative Disclosures About Market Risk."

## **Impairment of Goodwill and Long-Lived Assets**

Goodwill is not amortized, but instead reviewed annually as of December 31 of each year, or more frequently under certain circumstances, for impairment. Goodwill is assigned to the reporting unit, which is the operating segment level or one level below the operating segment. Determining whether an impairment has occurred requires the valuation of the reporting unit, which we estimated using a combination of a discounted cash flow (DCF) model and the guideline public company method. We assigned a 50% weight to the indicated value using the DCF and a 50% weight to the indicated value using the guideline public company method.

Each reporting unit regularly prepares operating forecasts which include several assumptions including future sales growth from new products and applications, as well as assumptions regarding future industry specific market conditions, capital expenditures, and working capital changes. These forecasts are reviewed and approved by management and serve as the basis for the assumptions used in the DCF. The DCF includes three years of forecasted cash flows from this process, plus cash flows projected to be generated from the end of the forecasted period into perpetuity. In addition to the estimates of future cash flows, other significant estimates involved in the determination of fair value of the reporting units were the discount rates and growth rates used in the DCF model. The discount rates used in the DCF model consider market and industry data as well as specific risk premiums for each reporting unit. The growth rate for each reporting unit, for the purpose of calculating cash flows through perpetuity, was set after the forecasted period.

For the guideline public company method, we selected seven publicly traded companies considered most comparable to our reporting units. We selected appropriate pricing multiples to be applied to the operating results of each reporting unit in order to provide indications of value.

The results of our December 31, 2015 goodwill impairment test performed indicated that no goodwill impairment existed. However, the Precision Optics reporting unit had an estimated fair value that we determined was not significantly in excess of the carrying value.

As of December 31, 2015, the Precision Optics reporting unit had \$17.6 million of goodwill and the fair value of the reporting unit exceeded the carrying value of the reporting unit by approximately 15%. A discount rate of 11.5% was applied to reflect the weighted average cost of capital and inherent business risks. Changes in market conditions could increase the discount rate in the future, thus decreasing the fair value of the reporting unit. A hypothetical 1% increase in the discount rate, holding all other assumptions constant, would not have decreased the fair value of the reporting unit below that of its carrying value. The sales

growth assumption for Precision Optics was based on future secured orders, as well as growth in certain markets due to the introduction of new products. The key uncertainty in the sales growth assumption, as discussed in Item 1A "Risk Factors," is our inability to accurately predict the timing and magnitude of sales of our products, especially newly introduced products. The assumed growth rate for cash flows beyond a five-year forecast period was approximately 3%. A hypothetical 1% decrease in the growth rate, holding all other assumptions constant, would not have decreased the fair value of the reporting unit below that of its carrying value.

We compared the market capitalization as of December 31, 2015 to the carrying value of our equity, noting no impairment indicators or triggering events.

We are unaware of any current market trends that are contrary to the assumptions made in the valuation of our reporting units. If actual results are not consistent with the assumptions made in the determination of the fair value of our reporting units, especially assumptions regarding future sales growth from new products and applications, it is possible that the estimated fair value of certain reporting units could fall below their carrying value and cause the reporting unit to fail step one of the goodwill impairment test.

## OUTLOOK

In 2015, we were significantly impacted by the economic slowdown in Asia and the downturn in the U.S. manufacturing sector, particularly in the second half of the year. In addition, oil prices collapsed in 2015, which negatively impacted exploration and drilling activities. The U.S. dollar also continued to remain strong, which negatively impacted our sales and operating profit. Despite these challenging headwinds, we continued to successfully execute our strategy of launching new products and technologies to capitalize on our materials' strengths. Examples of new product successes include foil-gauge ToughMet alloys for miniaturization and optical imaging components in small electronic devices, wafer-level processing for infrared and sensing, phosphorescent materials for use in new-generation laser illumination technology, and Dovetail Clad<sup>®</sup> copper and aluminum-bonded strip for automotive electronics applications.

We also responded to these difficult conditions by remaining disciplined in executing cost reduction initiatives. We reduced our global headcount by approximately 8% in 2015, including the elimination of executive positions. In addition, we improved our cash flow from operations by reducing our working capital requirements. Our 2015 results included foreign currency hedge gains related to the strengthening of the U.S. dollar. While this benefit is not forecasted to repeat in 2016, we do anticipate growing our value-added sales and profits in 2016, excluding the non-recurring 2015 benefits from foreign currency hedge gains.

The headwinds we experienced in 2015 are expected to continue into the early part of 2016, particularly impacting the consumer electronics, industrial components, telecommunications infrastructure, and energy end markets. The financial markets also experienced increased volatility in the early part of 2016, which could negatively impact business and consumer spending and, as a result, adversely impact our overall net sales and profits.

To counterbalance these trends and to further grow our sales and the breadth of our product reach, we continue to develop an active pipeline of new products and technologies that are being designed to capitalize on our materials' strengths. We believe that these new products and applications will be a key to our growth in the near term, based on our differentiated products with leading positions in long-term global growth markets. Over the long term, we remain confident that our strategy and financial strength will allow the Company to capitalize when end-market demand strengthens and deliver earnings growth that outperforms gross domestic product growth.

## Item 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We are exposed to precious metal and commodity price, interest rate, foreign exchange rate, and utility cost differences. While the degree of exposure varies from year to year, our methods and policies designed to manage these exposures have remained fairly consistent over time. Generally, we attempt to minimize the effects of these exposures on our pre-tax income and cash flows through the use of natural hedges, which include pricing strategies, borrowings denominated in the same terms as the exposed asset, off-balance sheet financing arrangements, and other methods. Where we cannot use a natural hedge, we may use derivative financial instruments to minimize the effects of these exposures when practical and cost efficient. The use of off-balance sheet financing arrangements and derivative financial instruments is subject to policies approved by the Audit Committee of the Board of Directors with oversight provided by a group of senior financial managers at our corporate office.

**Precious metals** . We use gold and other precious metals in manufacturing various products. To reduce the exposure to market price changes, the majority of our precious metal requirements are maintained on a consigned inventory basis. We purchase the metal out of consignment from our suppliers when it is ready to ship to a customer as a finished product. Our purchase price forms the basis for the price charged to the customer for the precious metal content and, therefore, the current cost is matched to the selling price, and the price exposure is minimized.

We are charged a consignment fee by the financial institutions that own the precious metals. This fee is a function of the market price of the metal, the quantity of metal we have on hand, and the rate charged by the institution. Because of market forces and competition, the fee can only be charged to customers in a limited case-by-case basis. Should the market price of precious metals that we have on consignment increase by 20% from the prices on December 31, 2015 , the additional pre-tax cost to us as a result of an increase in the consignment fee would be approximately \$0.9 million on an annual basis. This calculation assumes no changes in the quantity of metal held on consignment or the underlying fee and that none of the additional fees are charged to customers.

To further limit price and financing rate exposures, under some circumstances, we will require customers to furnish their own metal for processing. Customers may also elect to provide their own material for us to process on a toll basis as opposed to purchasing our material.

The available capacity of our existing credit lines to consign precious metals is a function of the quantity and price of the metals on hand. As prices increase, a given quantity of metal will utilize a larger proportion of the existing credit lines. A significant prolonged increase in metal prices could result in our credit lines being fully utilized, and, absent securing additional credit line capacity from financial institutions, could require us to purchase precious metals rather than consign them, require customers to supply their own metal and/or force us to turn down additional business opportunities. If we were in a significant precious metal ownership position, we might elect to use derivative financial instruments to hedge the potential price exposure. The cost to finance and potentially hedge the purchased inventory may also be higher than the consignment fee. The financial statement impact of the risk from rising metal prices impacting our credit availability cannot be estimated at the present time.

In certain circumstances, we may elect to fix the price of precious metals for a customer for a stated quantity over a specified period of time. In those cases, we may secure hedge contracts whose terms match the terms in the agreement with our customer so that the gain or loss on the contract with the customer due to subsequent movements in the precious metal price will generally be offset by a gain or loss on the hedge contract. At December 31, 2015 , we had no such hedge contracts outstanding.

**Copper**. We also use copper in our production processes. When possible, fluctuations in the purchase price of copper are passed on to customers in the form of price adders or reductions. While over time our price exposure to copper is generally in balance, there can be a lag between the change in our cost and the pass-through to our customers, resulting in higher or lower margins in a given period.

We consign the majority of our copper inventory requirements. As with precious metals, the available capacity under the existing lines is a function of the quantity and price of metal on hand. Should the market cost of copper increase by 20% from the price as of December 31, 2015 , the additional pre-tax cost to us as a result of an increase in the consignment fee would be approximately \$0.2 million on an annual basis. This calculation assumes no changes in the quantity of inventory or the underlying fee and that none of the additional fees are charged to customers.

**Lower of cost or market**. In our manufacturing processes, we use various metals that are not widely used by others or actively traded and, therefore, there is no established efficient market for derivative financial instruments that could be used to effectively hedge the related price exposures. For certain applications, our pricing practice with respect to these metals is to establish the selling price based upon our cost to purchase the material, limiting our price exposure. However, the inventory carrying value may be exposed to market fluctuations. The inventory value is maintained at the lower of cost or market and if the market value were to drop below the carrying value, the inventory would have to be reduced accordingly and a charge recorded against cost of sales. This risk is mainly associated with long manufacturing lead-time items and with sludges and scrap materials,



which generally have longer processing times to be refined or processed into a usable form for further manufacturing and are typically not covered by specific sales orders from customers. We did not record any material lower of cost or market charges in 2015, 2014, or 2013 as a result of market price fluctuations of metals in our inventories.

**Interest rates.** We are exposed to changes in interest rates on portions of our debt and cash balances. This interest rate exposure is managed by maintaining a combination of short-term and long-term debt and variable and fixed rate instruments. We may also use interest rate swaps to fix the interest rate on variable rate obligations, as we deem appropriate. There were no interest rate derivatives outstanding as of December 31, 2015. Excess cash is typically invested in high quality instruments that mature in 90 days or less. Investments are made in compliance with policies approved by the Board of Directors. Assuming no change in the amount or make-up of the outstanding debt as of December 31, 2015, a 200 basis point movement upwards in the interest rates on our variable rate debt would increase our annual interest expense by \$0.2 million.

**Foreign currencies.** Portions of our international operations sell products priced in foreign currencies, mainly the euro and yen, while the majority of these products' costs are incurred in U.S. dollars. We are exposed to currency movements in that if the U.S. dollar strengthens, the translated value of the foreign currency sale and the resulting margin on that sale will be reduced. We typically cannot increase the price of our products for short-term exchange rate movements because of local competition. To minimize this exposure, we may purchase foreign currency forward contracts, options, and collars in compliance with approved policies. If the dollar strengthened, the decline in the translated value of our margins would be at least partially offset by a gain on the hedge contract. A decrease in the value of the dollar would result in larger margins but potentially a loss on the contract, depending upon the method used to hedge the exposure. Our current policy limits our hedges to 80% or less of the forecasted exposure.

The notional value of the outstanding currency contracts was \$38.9 million as of December 31, 2015. If the dollar weakened 10% against the currencies we have hedged from the December 31, 2015 exchange rates, the reduced gain and/or increased loss on the outstanding contracts as of December 31, 2015 would reduce pre-tax profits by approximately \$3.9 million in 2016. This calculation does not take into account the increase in margins as a result of translating foreign currency sales at the more favorable exchange rates, any changes in margins from potential volume fluctuations caused by currency movements, or the translation effects on any other foreign currency denominated income statement or balance sheet item.

**Utilities.** The cost of natural gas and electricity used in our operations may vary from year to year and from season to season. We attempt to minimize these fluctuations and the exposure to higher costs by utilizing fixed price agreements of set durations, when deemed appropriate, obtaining competitive bidding between regional energy suppliers and other methods.

**Economy.** We are exposed to changes in global economic conditions and the potential impact those changes may have on various facets of our business. We have a program in place to closely monitor the credit worthiness and financial condition of our key providers of financial services, including our bank group and insurance carriers, as well as the credit worthiness of customers and vendors, and have various contingency plans in place.

We negotiated extensions to our bank lines for credit in 2015. These lines are established with a number of different banks in order to mitigate our exposure with any one financial institution. All of the banks in our bank group had credit in good standing as of year-end 2015. The financial statement impact from the risk of one or more of the banks in our bank group reducing our lines due to their insolvency or other causes cannot be estimated at the present time.

**Item 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA**

<b>Financial Statements</b>	<b>Page</b>
Management’s Report on Internal Control over Financial Reporting	41
Reports of Independent Registered Public Accounting Firm	42
Consolidated Statements of Income for the Years Ended December 31, 2015, 2014, and 2013	44
Consolidated Statements of Comprehensive Income for the Years Ended December 31, 2015, 2014, and 2013	45
Consolidated Statements of Cash Flows for the Years Ended December 31, 2015, 2014, and 2013	46
Consolidated Balance Sheets as of December 31, 2015 and 2014	47
Consolidated Statements of Shareholders’ Equity for the Years Ended December 31, 2015, 2014, and 2013	48
Notes to Consolidated Financial Statements	49

### **Management's Report on Internal Control over Financial Reporting**

The management of Materion Corporation and subsidiaries are responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rules 13a-15(f) and 15d-15(f). Materion Corporation and subsidiaries' internal control system was designed to provide reasonable assurance to the Company's management and Board of Directors regarding the preparation and fair presentation of published financial statements. All internal control systems, no matter how well designed, have inherent limitations. Therefore, even those systems determined to be effective can provide only reasonable assurance with respect to financial statement preparation and presentation.

Materion Corporation and subsidiaries' management assessed the effectiveness of the Company's internal control over financial reporting as of December 31, 2015. In making this assessment, it used the framework set forth by the Committee of Sponsoring Organizations of the Treadway Commission (the COSO criteria) in Internal Control - Integrated Framework (2013). Based on our assessment we believe that, as of December 31, 2015, the Company's internal control over financial reporting is effective.

The effectiveness of our internal control over financial reporting as of December 31, 2015 has been audited by Ernst & Young LLP, an independent registered public accounting firm, as stated in their report.

/ S / R ICHARD J. H IPPLE

---

Richard J. Hipple

Chairman, President and Chief Executive Officer

/ S / J OSEPH P. KELLEY

---

Joseph P. Kelley

Vice President, Finance and Chief Financial Officer

## **Report of Independent Registered Public Accounting Firm**

The Board of Directors and Shareholders of Materion Corporation

We have audited Materion Corporation and subsidiaries' internal control over financial reporting as of December 31, 2015, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). Materion Corporation and subsidiaries' management is responsible for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the company's internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, Materion Corporation and subsidiaries maintained, in all material respects, effective internal control over financial reporting as of December 31, 2015, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheets as of December 31, 2015 and 2014, and the related consolidated statements of income, comprehensive income, shareholders' equity, and cash flows for each of the three years in the period ended December 31, 2015 of Materion Corporation and subsidiaries and our report dated February 25, 2016 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

Cleveland, Ohio  
February 25, 2016

## **Report of Independent Registered Public Accounting Firm**

The Board of Directors and Shareholders of Materion Corporation

We have audited the accompanying consolidated balance sheets of Materion Corporation and subsidiaries as of December 31, 2015 and 2014, and the related consolidated statements of income, comprehensive income, shareholders' equity and cash flows for each of the three years in the period ended December 31, 2015. Our audits also included the financial statement schedule listed in the Index at Item 15(a). These financial statements and schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements and schedule based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of Materion Corporation and subsidiaries at December 31, 2015 and 2014, and the consolidated results of its operations and its cash flows for each of the three years in the period ended December 31, 2015, in conformity with U.S. generally accepted accounting principles. Also, in our opinion, the related financial statement schedule, when considered in relation to the basic financial statements taken as a whole, presents fairly in all material respects the information set forth therein.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), Materion Corporation and subsidiaries' internal control over financial reporting as of December 31, 2015, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated February 25, 2016 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

Cleveland, Ohio  
February 25, 2016

**Materion Corporation and Subsidiaries**  
**Years Ended December 31, 2015 , 2014 , and 2013**  
**Consolidated Statements of Income**

(Thousands except per share amounts)	2015	2014	2013
Net sales	\$ 1,025,272	\$ 1,126,890	\$ 1,166,882
Cost of sales	834,492	920,987	978,904
Gross margin	190,780	205,903	187,978
Selling, general, and administrative expense	129,941	136,487	132,476
Research and development expense	12,796	12,850	13,432
Other — net (Note D)	2,775	(1,022)	14,462
Operating profit	45,268	57,588	27,608
Interest expense — net (Note F)	2,450	2,787	3,036
<b>Income before income taxes</b>	<b>42,818</b>	<b>54,801</b>	<b>24,572</b>
Income tax expense (Note G)	10,660	12,670	4,360
<b>Net income</b>	<b>\$ 32,158</b>	<b>\$ 42,131</b>	<b>\$ 20,212</b>
<b>Basic earnings per share:</b>			
Net income per share of common stock	\$ 1.60	\$ 2.06	\$ 0.98
<b>Diluted earnings per share:</b>			
Net income per share of common stock	\$ 1.58	\$ 2.02	\$ 0.97
<b>Cash dividends per share</b>	<b>\$ 0.355</b>	<b>\$ 0.335</b>	<b>\$ 0.315</b>
<b>Weighted-average number of shares of common stock outstanding</b>			
Basic	20,097	20,461	20,571
Diluted	20,402	20,852	20,943

Refer to Notes to Consolidated Financial Statements.

**Materion Corporation and Subsidiaries**  
**Years Ended December 31, 2015 , 2014 , and 2013**  
**Consolidated Statements of Comprehensive Income**

(Thousands)	2015	2014	2013
<b>Net income</b>	<b>\$ 32,158</b>	<b>\$ 42,131</b>	<b>\$ 20,212</b>
Other comprehensive income:			
Foreign currency translation adjustment	(1,335)	(4,440)	(3,790)
Derivative and hedging activity, net of tax benefit (expense) of \$1,175, (\$1,318) and \$160	(1,999)	2,244	(296)
Pension and post-employment benefit adjustment, net of tax benefit (expense) of (\$2,963), \$11,626, and (\$17,613)	4,866	(20,153)	32,627
Net change in accumulated other comprehensive income	1,532	(22,349)	28,541
<b>Comprehensive income</b>	<b>\$ 33,690</b>	<b>\$ 19,782</b>	<b>\$ 48,753</b>

Refer to Notes to Consolidated Financial Statements.

**Materion Corporation and Subsidiaries**  
**Years Ended December 31, 2015 , 2014 , and 2013**  
**Consolidated Statements of Cash Flows**

(Thousands)	2015	2014	2013
Cash flows from operating activities:			
Net income	\$ 32,158	\$ 42,131	\$ 20,212
Adjustments to reconcile net income to net cash provided from operating activities:			
Depreciation, depletion, and amortization	37,817	42,721	41,649
Amortization of deferred financing costs in interest expense	654	795	679
Stock-based compensation expense (non-cash)	5,491	4,815	4,964
Deferred tax (benefit) expense	4,368	(5,274)	(2,170)
Changes in assets and liabilities net of acquired assets and liabilities:			
Decrease (increase) in accounts receivable	14,777	(2,066)	12,116
Decrease (increase) in inventory	19,372	(30,412)	(8,241)
Decrease (increase) in prepaid and other current assets	2,139	(191)	6,647
Increase (decrease) in accounts payable and accrued expenses	(17,989)	6,164	(7,739)
Increase (decrease) in unearned revenue	(1,184)	4,401	(1,064)
Increase (decrease) in interest and taxes payable	(910)	1,161	2,391
Increase (decrease) in long-term liabilities	(8,923)	(7,348)	6,879
Other — net	2,458	3,384	(401)
<b>Net cash provided from operating activities</b>	<b>90,228</b>	<b>60,281</b>	<b>75,922</b>
Cash flows from investing activities:			
Payments for purchase of property, plant, and equipment	(29,505)	(29,312)	(27,848)
Payments for mine development	(22,585)	(1,247)	(4,776)
Proceeds from sale of property, plant, and equipment	58	3,090	22
Other investments — net	—	(2)	15
<b>Net cash (used in) investing activities</b>	<b>(52,032)</b>	<b>(27,471)</b>	<b>(32,587)</b>
Cash flows from financing activities:			
Proceeds from issuance (repayment) of short-term debt	(653)	(6,291)	(13,692)
Proceeds from issuance of long-term debt	78,000	33,332	70,423
Repayment of long-term debt	(88,000)	(38,945)	(86,036)
Principal payments under capital lease obligations	(759)	(666)	(657)
Cash dividends paid	(7,132)	(6,865)	(6,497)
Deferred financing costs	(838)	—	(1,587)
Repurchase of common stock	(7,129)	(22,282)	—
Issuance of common stock under stock option plans	—	359	1,163
Tax benefit from stock compensation realization	416	477	711
<b>Net cash (used in) financing activities</b>	<b>(26,095)</b>	<b>(40,881)</b>	<b>(36,172)</b>
Effects of exchange rate changes	(1,015)	(1,553)	(445)
<b>Net change in cash and cash equivalents</b>	<b>11,086</b>	<b>(9,624)</b>	<b>6,718</b>
<b>Cash and cash equivalents at beginning of period</b>	<b>13,150</b>	<b>22,774</b>	<b>16,056</b>
<b>Cash and cash equivalents at end of period</b>	<b>\$ 24,236</b>	<b>\$ 13,150</b>	<b>\$ 22,774</b>

Refer to Notes to Consolidated Financial Statements.



**Materion Corporation and Subsidiaries**  
**December 31, 2015 and 2014**  
**Consolidated Balance Sheets**

(Thousands)	2015	2014
<b>Assets</b>		
Current assets		
Cash and cash equivalents (Note A)	\$ 24,236	\$ 13,150
Accounts receivable (Note A)	97,236	112,780
Inventories (Notes A and I)	211,820	232,409
Prepaid expenses	12,799	14,953
Deferred income taxes (Notes A and G)	—	13,402
Total current assets	346,091	386,694
Long-term deferred income taxes	25,743	17,991
Property, plant, and equipment (Notes A and J)	833,834	800,671
Less allowances for depreciation, depletion, and amortization	(570,205)	(553,083)
Property, plant, and equipment — net	263,629	247,588
Intangible assets (Notes A and K)	13,736	18,559
Other assets	6,716	4,781
Goodwill (Notes A and K)	86,725	86,725
<b>Total Assets</b>	<b>\$ 742,640</b>	<b>\$ 762,338</b>
<b>Liabilities and Shareholders' Equity</b>		
Current liabilities		
Short-term debt (Note L)	\$ 8,998	\$ 653
Accounts payable	31,888	36,239
Salaries and wages	27,494	35,448
Taxes other than income taxes	1,305	1,306
Other liabilities and accrued items	20,730	22,397
Income taxes (Notes A and G)	2,373	3,144
Unearned revenue (Note A)	3,695	4,879
Total current liabilities	96,483	104,066
Other long-term liabilities	18,435	18,203
Retirement and post-employment benefits (Note N)	92,794	103,891
Unearned income (Note A)	45,953	51,796
Long-term income taxes (Notes A and G)	1,293	1,750
Deferred income taxes (Notes A and G)	110	—
Long-term debt (Note L)	4,615	23,613
Shareholders' equity		
Serial preferred stock (no par value; 5,000 authorized shares, none issued)	—	—
Common stock (no par value; 60,000 authorized shares, issued shares of 27,145 for 2015 and 27,034 for 2014)	208,967	204,634
Retained earnings	499,659	474,633
Common stock in treasury (7,142 shares for 2015 and 6,937 shares for 2014)	(148,559)	(140,938)
Other comprehensive income (loss) (Note O)	(80,705)	(82,237)
Other equity transactions	3,595	2,927
Total shareholders' equity	482,957	459,019
<b>Total Liabilities and Shareholders' Equity</b>	<b>\$ 742,640</b>	<b>\$ 762,338</b>

Refer to Notes to Consolidated Financial Statements.

**Materion Corporation and Subsidiaries**  
**Years Ended December 31, 2015 , 2014 , and 2013**  
**Consolidated Statements of Shareholders' Equity**

(Thousands)	Common Stock	Retained Earnings	Common Stock In Treasury	Other Comprehensive Income (Loss)	Other Equity Transactions	Total
<b>Balance at January 1, 2013</b>	<b>\$ 195,107</b>	<b>\$ 425,835</b>	<b>\$ (118,298)</b>	<b>\$ (88,429)</b>	<b>\$ 2,159</b>	<b>\$ 416,374</b>
Net income	—	20,212	—	—	—	20,212
Other comprehensive income	—	—	—	28,541	—	28,541
Cash dividends declared	—	(6,583)	—	—	—	(6,583)
Proceeds from exercise of 74 shares under option plans	1,163	—	—	—	—	1,163
Income tax benefit from stock compensation realization	711	—	—	—	—	711
Stock-based compensation expense	4,964	—	—	—	—	4,964
Shares withheld for employee taxes on equity awards	(1,208)	—	—	—	—	(1,208)
Directors' deferred compensation	—	—	147	—	107	254
<b>Balance at December 31, 2013</b>	<b>\$ 200,737</b>	<b>\$ 439,464</b>	<b>\$ (118,151)</b>	<b>\$ (59,888)</b>	<b>\$ 2,266</b>	<b>\$ 464,428</b>
Net income	—	42,131	—	—	—	42,131
Other comprehensive income	—	—	—	(22,349)	—	(22,349)
Cash dividends declared	—	(6,962)	—	—	—	(6,962)
Proceeds from exercise of 20 shares under option plans	359	—	—	—	—	359
Income tax benefit from stock compensation realization	477	—	—	—	—	477
Repurchase of 690 shares	—	—	(22,282)	—	—	(22,282)
Stock-based compensation expense	4,815	—	—	—	—	4,815
Shares withheld for employee taxes on equity awards	(1,754)	—	—	—	—	(1,754)
Directors' deferred compensation	—	—	(505)	—	661	156
<b>Balance at December 31, 2014</b>	<b>\$ 204,634</b>	<b>\$ 474,633</b>	<b>\$ (140,938)</b>	<b>\$ (82,237)</b>	<b>\$ 2,927</b>	<b>\$ 459,019</b>
Net income	—	32,158	—	—	—	32,158
Other comprehensive income	—	—	—	1,532	—	1,532
Cash dividends declared	—	(7,132)	—	—	—	(7,132)
Income tax benefit from stock compensation realization	416	—	—	—	—	416
Repurchase of 212 shares	—	—	(7,129)	—	—	(7,129)
Stock-based compensation expense	5,491	—	—	—	—	5,491
Shares withheld for employee taxes on equity awards	(1,647)	—	—	—	—	(1,647)
Directors' deferred compensation	73	—	(492)	—	668	249
<b>Balance at December 31, 2015</b>	<b>\$ 208,967</b>	<b>\$ 499,659</b>	<b>\$ (148,559)</b>	<b>\$ (80,705)</b>	<b>\$ 3,595</b>	<b>\$ 482,957</b>

Refer to Notes to Consolidated Financial Statements.

**Materion Corporation and Subsidiaries**  
**Notes to Consolidated Financial Statements**

**Note A — Significant Accounting Policies**

( Dollars in thousands)

**Organization:** Materion Corporation (the Company) is a holding company with subsidiaries that have operations in the United States, Europe, and Asia. These operations manufacture advanced engineered materials used in a variety of end markets, including consumer electronics, industrial components, medical, automotive electronics, defense, telecommunications infrastructure, energy, commercial aerospace, and science. The Company has three reportable segments: Performance Alloys and Composites, Advanced Materials, and Other. Other includes the operating results of our Precision Optics and Large Area Coatings operating segments (collectively referred to as our Precision Coatings group) and unallocated corporate costs.

Refer to Note C to the Consolidated Financial Statements for additional segment details. The Company is vertically integrated and distributes its products through a combination of company-owned facilities and independent distributors and agents.

**Use of Estimates:** The preparation of financial statements in conformity with accounting principles generally accepted in the United States requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Actual results may differ from those estimates.

**Consolidation:** The Consolidated Financial Statements include the accounts of Materion Corporation and its subsidiaries. All of the Company's subsidiaries were wholly owned as of December 31, 2015. Intercompany accounts and transactions are eliminated in consolidation.

**Cash Equivalents:** All highly liquid investments with a maturity of three months or less when purchased are considered to be cash equivalents.

**Accounts Receivable:** An allowance for doubtful accounts is maintained for the estimated losses resulting from the inability of customers to pay amounts due. The allowance is based upon identified delinquent accounts, customer payment patterns, and other analyses of historical data and trends. The allowance for doubtful accounts was \$1,197 and \$1,578 at December 31, 2015 and 2014, respectively. The Company extends credit to customers based upon their financial condition, and generally collateral is not required.

**Inventories:** Inventories are stated at the lower of cost or market. The cost of the majority of domestic inventories is determined using the last-in, first-out (LIFO) method. The remaining inventories are stated principally at average cost.

**Property, Plant, and Equipment:** Property, plant, and equipment is stated on the basis of cost. Depreciation is computed principally by the straight-line method, except certain assets for which depreciation may be computed by the units-of-production method. The depreciable lives that are used in computing the annual provision for depreciation by class of asset are as follows:

	<b>Years</b>
Land improvements	5 to 25
Buildings	10 to 40
Leasehold improvements	Life of lease
Machinery and equipment	3 to 15
Furniture and fixtures	4 to 15
Automobiles and trucks	2 to 8
Research equipment	6 to 12
Computer hardware	3 to 10
Computer software	3 to 10

An asset acquired under a capital lease will be recorded at the lesser of the present value of the projected lease payments or the fair value of the asset and will be depreciated in accordance with the above schedule. Leasehold improvements will be depreciated over the life of the improvement if it is shorter than the life of the lease. Repair and maintenance costs are expensed as incurred.

**Mineral Resources and Mine Development:** Property acquisition costs are capitalized as mineral resources on the balance sheet and are depleted using the units-of-production method based upon total estimated recoverable proven reserves of the

beryllium-bearing bertrandite ore body. The Company uses beryllium pounds as the unit of accounting measure, and depletion expense is recorded on a pro-rata basis based upon the amount of beryllium pounds extracted as a percentage of total estimated beryllium pounds contained in all ore bodies.

Mine development costs at our open pit surface mines include drilling, infrastructure, other related costs to delineate an ore body, and the removal of overburden to initially expose an ore body. Costs incurred before mineralization is classified as proven and probable reserves are expensed and classified as Exploration expense. Capitalization of mine development project costs that meet the definition of an asset begins once mineralization is classified as proven and probable reserves.

Drilling and related costs are capitalized for an ore body where proven and probable reserves exist, and the activities are directed at obtaining additional information on the ore body or converting mineralized material to proven and probable reserves. All other drilling and related costs are expensed as incurred. Drilling costs incurred during the production phase for operational ore control are allocated to inventory costs and then included as a component of costs applicable to sales.

The costs of removing overburden and waste materials to access the ore body at an open-pit mine prior to the production phase are referred to as “development costs.” Development costs are capitalized during the development of an open-pit mine and are capitalized at each pit. These costs are amortized as the ore is extracted using the units-of-production method based upon total estimated recoverable proven reserves for the individual pit. The Company uses beryllium pounds as the unit of accounting measure for recording amortization.

To the extent that the aforementioned costs benefit an entire ore body, the costs are amortized over the estimated useful life of the ore body. Costs incurred to access specific ore blocks or areas that only provide benefit over the life of that area are amortized over the estimated life of that specific ore block area.

**Goodwill and Other Intangible Assets:** Goodwill is not amortized, but instead reviewed annually as of December 31 of each year, or more frequently under certain circumstances, for impairment. Goodwill is assigned to the reporting unit, which is the operating segment level or one level below the operating segment. Intangible assets with finite lives are amortized using the straight-line method or effective interest method, as applicable, over the periods estimated to be benefited, which is generally 20 years or less. Finite-lived intangible assets are also reviewed for impairment if facts and circumstances warrant.

**Asset Impairment:** In the event that facts and circumstances indicate that the carrying value of long-lived assets may be impaired, an evaluation of recoverability is performed by comparing the carrying value of the assets to the associated estimated future undiscounted cash flow. If the carrying value exceeds that cash flow, then the assets are written down to their fair values.

**Derivatives:** The Company recognizes all derivatives on the balance sheet at fair value. If the derivative is designated and effective as a cash flow hedge, changes in the fair value of the derivative are recognized in other comprehensive income (loss), a component of shareholders’ equity, until the hedged item is recognized in earnings. If the derivative is designated as a fair value hedge, changes in fair value are offset against the change in the fair value of the hedged asset, liability, or commitment through earnings. The ineffective portion of a derivative’s change in fair value, if any, is recognized in earnings immediately. If a derivative is not a hedge, changes in its fair value are adjusted through the income statement.

**Asset Retirement Obligation:** The Company records a liability to recognize the legal obligation to remove an asset at the time the asset is acquired or when the legal liability arises. The liability is recorded for the present value of the ultimate obligation by discounting the estimated future cash flows using a credit-adjusted risk-free interest rate. The liability is accreted over time, with the accretion charged to expense. An asset equal to the fair value of the liability is recorded concurrent with the liability and depreciated over the life of the underlying asset.

**Unearned Income:** Expenditures for capital equipment to be reimbursed under government contracts are recorded in property, plant, and equipment, while the reimbursements for those expenditures are recorded in unearned income, a liability on the balance sheet. When the assets subject to reimbursement are placed in service, the total cost is depreciated over the useful lives, and the unearned income liability is reduced and credited to cost of sales on the Consolidated Statements of Income ratably with the annual depreciation expense. Depreciation and amortization expense on the Consolidated Statements of Cash Flows is shown net of the associated period reduction in the unearned income liability.

**Revenue Recognition:** The Company generally recognizes revenue when the goods are shipped and title passes to the customer. The Company requires persuasive evidence that a revenue arrangement exists, delivery of the product has occurred, the selling price is fixed or determinable, and collectibility is reasonably assured before revenue is realized and earned. Billings in advance of the shipment of the goods are recorded as unearned revenue, which is a liability on the balance sheet. Revenue is recognized for these transactions when the goods are shipped and all other revenue recognition criteria are met.

**Shipping and Handling Costs:** The Company records shipping and handling costs for products sold to customers in cost of sales on the Consolidated Statements of Income.

**Advertising Costs:** The Company expenses all advertising costs as incurred. Advertising costs were \$1,285 in 2015, \$1,188 in 2014, and \$1,126 in 2013.

**Stock-based Compensation:** The Company recognizes stock-based compensation expense based on the grant date fair value of the award over the period during which an employee is required to provide service in exchange for the award. The fair value of restricted stock is based on the closing market price of the Company's common shares on the grant date. Stock options and stock appreciation rights (SARs) are granted with an exercise price equal to the closing market price of the Company's common shares on the date of grant. The fair value of stock options and SARs is determined using a Black-Scholes option-pricing model, which incorporates assumptions regarding the expected volatility, the expected option life, the risk-free interest rate, and the expected dividend yield. See Note P for additional information about stock-based compensation.

**Capitalized Interest:** Interest expense associated with active capital asset construction and mine development projects is capitalized and amortized over the future useful lives of the related assets.

**Income Taxes:** The Company uses the liability method in measuring the provision for income taxes and recognizing deferred tax assets and liabilities on the balance sheet. The Company will record a valuation allowance to reduce the deferred tax assets to the amount that is more likely than not to be realized, as warranted by current facts and circumstances. The Company applies a more-likely-than-not recognition threshold for all tax uncertainties and will record a liability for those tax benefits that have a less than 50% likelihood of being sustained upon examination by the taxing authorities.

**Net Income Per Share:** Basic earnings per share (EPS) is computed by dividing income available to common stockholders by the weighted-average number of common shares outstanding for the period. Diluted EPS reflects the assumed conversion of all dilutive common stock equivalents as appropriate using the treasury stock method.

**New Pronouncements Adopted:** In November 2015, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) 2015-17, *Balance Sheet Classification of Deferred Taxes*, which simplifies the presentation of deferred taxes by requiring all deferred tax assets and liabilities to be classified as noncurrent on the balance sheet. The amendments in this ASU are effective for fiscal years and interim periods beginning after December 15, 2016, with early adoption permitted. The Company early adopted this ASU at December 31, 2015 on a prospective basis.

**New Pronouncements Issued:** In July 2015, the FASB issued ASU 2015-11, *Simplifying the Measurement of Inventory*. Inventory within the scope of this update is required to be measured at the lower of its cost or net realizable value, with net realizable value being the estimated selling price in the ordinary course of business, less reasonably predictable costs of completion, disposal, and transportation. This ASU is effective prospectively for fiscal years and interim periods beginning after December 15, 2016, with early adoption permitted. The Company will adopt this ASU as required. The ASU will not have a material effect on the consolidated financial statements.

In April 2015, the FASB issued ASU 2015-03, *Simplifying the Presentation of Debt Issuance Costs*, which requires companies to present debt issuance costs associated with a debt liability as a deduction from the carrying amount of that debt liability on the balance sheet rather than being capitalized as an asset. In ASU 2015-15, the FASB clarified the presentation of debt issuance costs related to line-of-credit arrangements as an asset is acceptable, regardless of whether there are any outstanding borrowings on the line of credit arrangement. The standards are effective for interim and annual periods beginning after December 15, 2015, and retrospective presentation is required. The Company will adopt this ASU as required. The ASU will not have a material effect on the consolidated financial statements.

In May 2014, the FASB issued ASU 2014-09, *Revenue from Contracts with Customers*, which supersedes previous revenue recognition guidance. The new standard requires that a company recognize revenue when it transfers promised goods or services to customers in an amount that reflects the consideration the Company expects to receive in exchange for those goods or services. Companies will need to use more judgment and estimates than under the guidance currently in effect, including estimating the amount of variable revenue to recognize over each identified performance obligation. Additional disclosures will be required to help users of financial statements understand the nature, amount, and timing of revenue and cash flows arising from contracts. This ASU is effective beginning in fiscal year 2018 with a provision for early adoption in 2017. The standard can be adopted either retrospectively or as a cumulative-effect adjustment as of the date of adoption. The Company is currently evaluating the impact of adopting this new guidance on the consolidated financial statements.

No other recently issued ASUs are expected to have a material effect on the Company's results of operations, financial condition, or liquidity.

## Note B — Revised Financial Statements

In 2015, the Company identified an error relating to its stock-based compensation expense. The vesting period of awards made under the Company's 2006 Stock Incentive Plan (the Plan) generally has been three years and, as such, the Company recognized stock-based compensation expense ratably over the vesting period, presuming the requisite service period to be the vesting period. However, grants made pursuant to the Plan provide that the awards continue to vest if the employee retires. Accordingly, the Company has determined that the requisite service period for awards does not extend beyond the date on which an employee becomes eligible to retire, which causes the requisite service period to be the shorter of three years or the period from the grant date to the date on which each employee becomes retirement eligible. This conclusion has resulted in an acceleration of the recognition of the cost of awards to persons becoming retirement eligible within three years of the grant date.

The Company assessed the after-tax impact of this error on prior annual periods, which would have increased Net income by \$0.4 million and \$0.5 million in 2014 and 2013, respectively. Based on these assessments, the Company determined that the impact of the error was not material to any previously issued financial statements. Accordingly, the Company is revising its previously issued financial statements to facilitate comparisons across periods. As summarized below, Retained earnings at December 31, 2014 was adjusted by the cumulative effect of this error, which was \$1.6 million, net of tax.

The Company has revised the Consolidated Balance Sheet as of December 31, 2014 and the Consolidated Statements of Income for the years ended December 31, 2014 and 2013. The correction of this error did not result in a change to net cash provided by operating activities for 2014 or 2013.

### Consolidated Balance Sheet

(Thousands)	Dec. 31, 2014		
	Previously Reported	Revision Adjustment	As Revised
Long-term deferred income taxes (asset)	\$ 17,722	\$ 269	\$ 17,991
Deferred income taxes (liability)	617	(617)	—
Common stock	202,104	2,530	204,634
Retained earnings	476,277	(1,644)	474,633

### Consolidated Statement of Income

(Thousands, except per share amounts)	2014			2013		
	Previously Reported	Revision Adjustment	As Revised	Previously Reported	Revision Adjustment	As Revised
Selected Items						
Selling, general, and administrative expense	\$ 137,118	\$ (631)	\$ 136,487	\$ 133,253	\$ (777)	\$ 132,476
Income tax expense	12,449	221	12,670	4,088	272	4,360
Net income	41,721	410	42,131	19,707	505	20,212

### Basic earnings per share:

Net income per share of common stock	\$ 2.04	\$ 0.02	\$ 2.06	\$ 0.96	\$ 0.02	\$ 0.98
--------------------------------------	---------	---------	---------	---------	---------	---------

### Diluted earnings per share:

Net income per share of common stock	\$ 2.00	\$ 0.02	\$ 2.02	\$ 0.94	\$ 0.03	\$ 0.97
--------------------------------------	---------	---------	---------	---------	---------	---------

## Note C — Segment Reporting and Geographic Information

The Company is organized into three reportable segments: Performance Alloys and Composites, Advanced Materials, and Other. The Other reportable segment includes the operating results of our Precision Optics and Large Area Coatings operating segments (collectively referred to as the Precision Coatings group) and unallocated corporate costs. Precision Optics and Large Area Coatings do not meet the quantitative threshold criteria for separate disclosure.

The factors that the Company considered in determining its reportable segments included the economic similarity of its businesses, the nature of products sold or services provided, production processes, types of customers, and distribution methods.

Performance Alloys and Composites produces strip and bulk form alloy products, strip metal products with clad inlay and overlay metals, 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.

Advanced Materials produces advanced chemicals, microelectric packaging, precious metal, non-precious metal, and specialty metal products, including vapor deposition targets, frame lid assemblies, clad and precious metal preforms, high temperature braze materials, and ultra-fine wire.

The Precision Coatings group produces thin film coatings, optical filter materials, sputter-coated, and precision-converted thin film materials.

The following table summarizes our reportable segments for the years ended December 31, 2015, 2014, and 2013 :

(Thousands)	Other					
	Performance Alloys and Composites	Advanced Materials	Other (1)	Corporate (2)	Subtotal	Total
<b>2015</b>						
Net sales	\$ 394,760	\$ 482,288	\$ 148,444	\$ (220)	\$ 148,224	\$ 1,025,272
Intersegment sales (3)	768	63,669	—	—	—	64,437
Value-added sales	335,136	182,794	101,761	(2,444)	99,317	617,247
Operating profit (loss)	23,560	27,805	7,483	(13,580)	(6,097)	45,268
Depreciation, depletion, and amortization	19,748	6,995	9,951	1,777	11,728	38,471
Expenditures for long-lived assets	38,562	5,286	6,399	1,843	8,242	52,090
Assets	426,106	131,104	118,953	66,477	185,430	742,640
<b>2014</b>						
Net sales	\$ 433,288	\$ 547,282	\$ 147,659	\$ (1,339)	\$ 146,320	\$ 1,126,890
Intersegment sales (3)	743	54,404	—	—	—	55,147
Value-added sales	358,511	181,040	102,378	(4,856)	97,522	637,073
Operating profit (loss)	33,290	32,692	9,272	(17,666)	(8,394)	57,588
Depreciation, depletion, and amortization	24,712	6,890	10,175	1,739	11,914	43,516
Expenditures for long-lived assets	16,998	6,412	5,869	1,280	7,149	30,559
Assets	433,997	148,303	122,337	57,701	180,038	762,338
<b>2013</b>						
Net sales	\$ 422,936	\$ 591,972	\$ 152,269	\$ (295)	\$ 151,974	\$ 1,166,882
Intersegment sales (3)	447	56,048	5	—	5	56,500
Value-added sales	339,903	168,600	104,232	(3,644)	100,588	609,091
Operating profit (loss)	30,737	8,427	4,262	(15,818)	(11,556)	27,608
Depreciation, depletion, and amortization	23,033	9,037	8,446	1,812	10,258	42,328
Expenditures for long-lived assets	18,354	4,201	6,763	3,306	10,069	32,624
Assets	428,706	184,027	122,964	42,248	165,212	777,945

(1) Other represents the Precision Coatings group, which is a business included in the Other reportable segment.

(2) Costs associated with our unallocated corporate functions have been shown separately to better illustrate the financial information for the businesses within the Other reportable segment.

(3) Intersegment sales are eliminated in consolidation.

The primary measure of evaluating segment performance is operating profit. In addition to net sales, value-added sales is also reviewed. Value-added sales represents a non-GAAP measure which removes the impact of pass-through metal costs and allows for analysis without the distortion of the movement or volatility in pass-through metal prices. Value-added sales is a metric of particular importance to the Advanced Materials segment, since a significant portion of Advanced Materials' net sales are based on the value of precious metals which can fluctuate significantly from period to period.

From a segment assets perspective, segments are evaluated based upon a return on assets metric, which includes inventory (excluding the impact of LIFO), accounts receivable, and property, plant, and equipment.

The Other reportable segment includes the operating results and assets of the Precision Coatings group, as well as unallocated corporate costs and assets.

Other geographic information includes the following:

(Thousands)	2015	2014	2013
Net sales			
United States	\$ 639,436	\$ 731,194	\$ 810,648
Asia	247,174	238,684	196,040
Europe	122,554	136,561	136,614
All other	16,108	20,451	23,580
Total	<u>\$ 1,025,272</u>	<u>\$ 1,126,890</u>	<u>\$ 1,166,882</u>
Long-lived assets by country deployed			
United States	\$ 249,976	\$ 233,619	\$ 246,132
All other	13,653	13,969	15,761
Total	<u>\$ 263,629</u>	<u>\$ 247,588</u>	<u>\$ 261,893</u>

Net sales are based on the location of the selling group. No individual country, other than the United States, or customer accounted for 10% or more of the Company's net sales for the years presented.

Long-lived assets are comprised of property, plant and equipment based on physical location.

#### Note D — Other-net

Other-net is summarized for 2015 , 2014 , and 2013 as follows:

(Thousands)	(Income) Expense		
	2015	2014	2013
Foreign currency exchange/translation gain	\$ (5,461)	\$ (1,676)	\$ (1,506)
Amortization of intangible assets	5,112	5,169	5,529
Metal consignment fees	7,074	7,332	7,218
Net loss (gain) on disposal of fixed assets	768	(2,435)	1,459
Recovery from insurance	(3,800)	(6,750)	—
Legal settlement	(1,825)	(4,000)	—
Consignment facility renegotiation bank fee	—	—	853
Other items	907	1,338	909
Total	<u>\$ 2,775</u>	<u>\$ (1,022)</u>	<u>\$ 14,462</u>

#### Note E — Facility Consolidation

During 2012, the Company announced a plan to consolidate various small facilities to improve efficiencies and reduce overhead costs in order to improve profitability and cash flows. The plan also involved a reduction in the hourly workforce and management group at other facilities. Costs associated with the consolidation plan, primarily within the Advanced Materials and Other segments, included severance and related manpower costs, equipment write-downs, equipment relocations, and other related costs.

These costs are presented in the Consolidated Statements of Income as follows:

(Thousands)	2014	2013
Cost of sales	\$ 433	\$ 1,812
Selling, general, and administrative expense	104	2,805
Other-net	170	1,373
Total	<u>\$ 707</u>	<u>\$ 5,990</u>



Included in these costs are equipment write-offs of \$1.2 million in 2013 that resulted from the abandonment of equipment with no realizable value.

At December 31, 2015, no remaining accruals related to this plan are recorded.

#### Note F — Interest

The following chart summarizes the interest incurred, capitalized, and paid, as well as the amortization of capitalized interest for 2015 , 2014 , and 2013 :

(Thousands)	2015	2014	2013
Interest incurred	\$ 2,685	\$ 3,012	\$ 3,286
Less capitalized interest	235	225	250
Total net expense	\$ 2,450	\$ 2,787	\$ 3,036
Interest paid	\$ 2,042	\$ 2,215	\$ 2,671
Amortization of capitalized interest included in cost of sales	\$ 233	\$ 261	\$ 265

The difference in expense for 2015 , 2014 , and 2013 was primarily due to changes in the level of outstanding debt and capital leases and the average borrowing rate. Amortization of deferred financing costs within interest expense was \$0.7 million in 2015 , \$0.8 million in 2014 , and \$0.7 million in 2013 .

#### Note G — Income Taxes

Income before income taxes and income tax expense (benefit) are comprised of the following:

(Thousands)	2015	2014	2013
Income before income taxes:			
Domestic	\$ 31,748	\$ 40,420	\$ 17,305
Foreign	11,070	14,381	7,267
Total income before income taxes	\$ 42,818	\$ 54,801	\$ 24,572
Income tax expense:			
Current income tax expense:			
Domestic	\$ 3,556	\$ 14,487	\$ 4,325
Foreign	2,736	3,457	2,205
Total current	\$ 6,292	\$ 17,944	\$ 6,530
Deferred income tax expense (benefit):			
Domestic	\$ 4,960	\$ (4,383)	\$ (2,686)
Foreign	1,016	(553)	319
Valuation allowance	(1,608)	(338)	197
Total deferred	\$ 4,368	\$ (5,274)	\$ (2,170)
Total income tax expense	\$ 10,660	\$ 12,670	\$ 4,360

A reconciliation of the U.S. federal statutory income tax rate to the Company's effective income tax rate is as follows:

	2015	2014	2013
U.S. Federal statutory rate	35.0 %	35.0 %	35.0 %
State and local income taxes, net of federal tax effect	1.7	0.8	(0.8)
Effect of excess of percentage depletion over cost depletion	(7.1)	(5.1)	(11.4)
Manufacturing production deduction	(0.9)	(2.5)	(2.3)
Officers' compensation	0.9	0.2	0.4
Adjustment to unrecognized tax benefits	(1.1)	0.3	0.3
Foreign rate differential	(4.2)	(3.2)	(3.0)
Research and development tax credit	(1.6)	(1.3)	(7.2)
Valuation allowance	(0.9)	(0.6)	2.2
Other items	3.1	(0.5)	4.5
Effective tax rate	24.9 %	23.1 %	17.7 %

The Company had domestic and foreign income tax payments of \$6.0 million , \$13.1 million , and \$8.2 million in 2015 , 2014 , and 2013 , respectively.

Deferred tax assets and (liabilities) are determined based on temporary differences between the financial reporting and tax basis of assets and liabilities. Deferred tax assets and (liabilities) recorded in the Consolidated Balance Sheets consist of the following:

(Thousands)	December 31,	
	2015	2014
Asset (liability)		
Post-employment benefits other than pensions	\$ 5,094	\$ 5,543
Other reserves	18,234	18,650
Environmental reserves	2,068	1,808
Inventory	3,264	4,808
Pensions	21,781	24,158
Alternative minimum tax credit	709	—
Net operating loss and credit carryforwards	4,148	5,714
Research and development tax credit carryforward	700	—
Miscellaneous	377	345
Subtotal	56,375	61,026
Valuation allowance	(2,837)	(4,444)
Total deferred tax assets	53,538	56,582
Depreciation	(14,359)	(16,226)
Amortization	(6,453)	(7,001)
Capitalized interest expense	(204)	(141)
Mine development	(6,457)	(571)
Derivative instruments and hedging activities	(432)	(1,250)
Total deferred tax liabilities	(27,905)	(25,189)
Net deferred tax asset	\$ 25,633	\$ 31,393

The Company had deferred income tax assets offset with a valuation allowance for certain state and foreign net operating losses and state investment tax credit carryforwards. The Company intends to maintain a valuation allowance on these deferred tax assets until a realization event occurs to support reversal of all or a portion of the allowance.

ASU 2015-17, *Balance Sheet Classification of Deferred Taxes*, requires all public companies to classify deferred taxes as noncurrent effective for financial statements issued for annual periods beginning after December 31, 2016, and interim periods within those annual periods. Early adoption is permitted for all companies in any interim or annual period, and may be adopted on either a prospective or retrospective basis. In accordance with this new guidance, the Company has elected early adoption of

the guidance on a prospective basis beginning with the financial statements issued for the annual period ended December 31, 2015. As such, all financial statements issued prior to the annual period ended December 31, 2015 are not being retrospectively adjusted.

At December 31, 2015, for income tax purposes, the Company had foreign net operating loss carryforwards of \$3.3 million that do not expire, and \$5.9 million that expire in calendar years 2016 through 2024, of which \$0.9 million expires within the next twelve months. The Company also had state net operating loss carryforwards of \$19.5 million that expire in calendar years 2017 through 2035 and state tax credits of \$2.5 million that expire in calendar years 2016 through 2030. A valuation allowance of \$2.8 million has been provided against certain foreign and state loss carryforwards and state tax credits due to uncertainty of their realization.

The Company files income tax returns in the U.S. federal jurisdiction, and in various state, local, and foreign jurisdictions. With limited exceptions, the Company is no longer subject to U.S. federal examinations for years before 2010, state and local examinations for years before 2011, and foreign examinations for tax years before 2010.

A reconciliation of the Company's unrecognized tax benefits for the year-to-date periods ending December 31, 2015 and 2014 is as follows:

(Thousands)	2015	2014
Balance at January 1	\$ 1,790	\$ 1,679
Additions to tax provisions related to the current year	9	12
Additions to tax positions related to prior years	—	483
Reduction to tax positions related to prior years	(439)	—
Lapses on statutes of limitations	(75)	(384)
Balance at December 31	<u>\$ 1,285</u>	<u>\$ 1,790</u>

At December 31, 2015, the Company had \$1.3 million of unrecognized tax benefits, of which \$0.5 million would affect the Company's effective tax rate if recognized. It is reasonably possible that the amount of unrecognized tax benefits will change in the next twelve months; however, we do not expect the change to have a material impact on the Consolidated Statements of Income or the Consolidated Balance Sheet.

The Company recognizes interest and penalties related to unrecognized tax benefits on the income tax expense line in the accompanying Consolidated Statements of Income. Accrued interest and penalties are included on the related tax liability line in the Consolidated Balance Sheets. The amount of interest and penalties, net of related federal tax benefits, recognized in earnings was immaterial during 2015, 2014, and 2013. As of December 31, 2015 and 2014, accrued interest and penalties, net of related federal tax benefits, were immaterial.

U.S. income tax has not been recognized on the excess of the amount for financial reporting over the tax basis of investments in foreign subsidiaries that is indefinitely reinvested outside of the United States. This amount becomes taxable upon a repatriation of assets from the subsidiary or a sale or liquidation of the subsidiary. The amount of such temporary differences totaled \$54.0 million as of December 31, 2015. Determination of the amount of any unrecognized deferred income tax liability on this temporary difference is not practicable because of the complexities of the hypothetical calculation.

**Note H — Earnings Per Share**

The following table sets forth the computation of basic and diluted EPS:

<b>(Thousands except per share amounts)</b>	<b>2015</b>	<b>2014</b>	<b>2013</b>
Numerator for basic and diluted EPS:			
Net income	\$ 32,158	\$ 42,131	\$ 20,212
Denominator:			
Denominator for basic EPS:			
Weighted-average shares outstanding	20,097	20,461	20,571
Effect of dilutive securities:			
Stock options and stock appreciation rights	156	197	188
Restricted stock	91	125	149
Performance-based restricted shares	58	69	35
Diluted potential common shares	305	391	372
Denominator for diluted EPS:			
Adjusted weighted-average shares outstanding	20,402	20,852	20,943
Basic EPS	\$ 1.60	\$ 2.06	\$ 0.98
Diluted EPS	\$ 1.58	\$ 2.02	\$ 0.97

SARs with grants in excess of the average annual share price totaling 376,550 in 2015 , 328,611 in 2014 , and 368,005 in 2013 were excluded from the diluted EPS calculation as their effect would have been anti-dilutive.

**Note I — Inventories**

Inventories on the Consolidated Balance Sheets are summarized as follows:

<b>(Thousands)</b>	<b>December 31,</b>	
	<b>2015</b>	<b>2014</b>
Raw materials and supplies	\$ 37,463	\$ 42,501
Work in process	180,458	199,785
Finished goods	38,135	43,799
Subtotal	256,056	286,085
Less: LIFO reserve balance	44,236	53,676
Inventories	\$ 211,820	\$ 232,409

Gross inventories accounted for using the LIFO method totaled \$160.5 million at December 31, 2015 and \$183.9 million at December 31, 2014 . The use of the LIFO method results in a better matching of revenues and costs. The liquidation of LIFO inventory layers reduced cost of sales by \$6.1 million in 2015 and \$0.1 million in 2014 .

The Company repaid a precious metal-denominated loan totaling \$28.7 million as of December 31, 2013 in the third quarter of 2014 . This debt reduction was completed by transferring 23,781 ounces of gold held in inventory to the lender as repayment for the outstanding short-term debt, and this transaction was treated as a non-cash item in the Consolidated Statement of Cash Flows.

**Note J — Property, Plant, and Equipment**

Property, plant, and equipment on the Consolidated Balance Sheets is summarized as follows:

(Thousands)	December 31,	
	2015	2014
Land	\$ 7,457	\$ 7,458
Buildings	133,427	129,673
Machinery and equipment	597,423	579,906
Software	38,505	34,525
Construction in progress	15,449	16,818
Allowances for depreciation	(565,203)	(534,908)
Subtotal	227,058	233,472
Capital leases	10,913	10,912
Allowances for depreciation	(2,242)	(1,988)
Subtotal	8,671	8,924
Mineral resources	4,979	4,980
Mine development	25,681	16,399
Allowances for amortization and depletion	(2,760)	(16,187)
Subtotal	27,900	5,192
Property, plant, and equipment — net	\$ 263,629	\$ 247,588

The Company received \$63.5 million from the U.S. Department of Defense (DoD) in previous periods for reimbursement of the DoD's share of the cost of the equipment in property, plant, and equipment and the reimbursements as unearned income, a liability on the Consolidated Balance Sheets. The equipment was placed in service during 2012, and its full cost is being depreciated in accordance with Company policy. The unearned income liability is being reduced ratably with the depreciation expense recorded over the life of the equipment.

Unearned income was reduced by \$5.8 million and \$4.7 million in 2015 and 2014 , respectively, and credited to cost of sales in the Consolidated Statements of Income, offsetting the impact of the depreciation expense on the associated equipment on the Company's cost of sales and gross margin.

We recorded depreciation and depletion expense of \$32.8 million in 2015 , \$37.5 million in 2014 , and \$36.1 million in 2013 . The expense is net of the above-referenced reductions in the unearned income liability. Depreciation, depletion, and amortization as shown on the Consolidated Statement of Cash Flows is also net of the reduction in the unearned income liability in 2015 , 2014 , and 2013. The net book value of capitalized software was \$9.5 million and \$6.1 million at December 31, 2015 and December 31, 2014 , respectively. Depreciation expense related to software was \$2.3 million in 2015 , \$1.8 million in 2014 , and \$1.7 million in 2013 .

**Note K — Intangible Assets and Goodwill****Assets Acquired**

The Company acquired a license in 2014 with a cost of \$0.3 million with a weighted-average amortization period of 8.5 years . The Company incurred \$0.8 million in 2015 for deferred financing costs associated with amending its credit agreement.

## Assets Subject to Amortization

The cost, accumulated amortization, and net book value of intangible assets subject to amortization as of December 31, 2015 and 2014 , and the aggregate amortization expense for each year then ended is as follows:

(Thousands)	2015	2014
Deferred financing costs		
Cost	\$ 8,537	\$ 7,794
Accumulated amortization	(5,808)	(5,302)
Net book value	2,729	2,492
Customer relationships		
Cost	38,428	38,427
Accumulated amortization	(30,466)	(26,544)
Net book value	7,962	11,883
Technology		
Cost	12,092	12,092
Accumulated amortization	(9,565)	(8,594)
Net book value	2,527	3,498
Licenses and other		
Cost	2,989	2,817
Accumulated amortization	(2,471)	(2,131)
Net book value	518	686
Total		
Cost	62,046	61,130
Accumulated amortization	(48,310)	(42,571)
Net book value	\$ 13,736	\$ 18,559
Aggregate amortization expense	\$ 5,651	\$ 5,964

The aggregate amortization expense is estimated to be \$5.1 million in 2016 , \$4.5 million in 2017 , \$1.9 million in 2018 , \$1.1 million in 2019 , and \$0.6 million in 2020 .

## Assets Not Subject to Amortization

The Company's only intangible asset not subject to amortization is goodwill. The balance of goodwill at December 31, 2015 and 2014 was \$86.7 million and assigned to several reporting units.

Goodwill within the Advance Materials segment totaled \$46.6 million .Within the Precision Coatings group, goodwill totaled \$17.6 million and \$20.6 million relating to the Precision Optics and Large Area Coatings operating segments, respectively. The remaining \$1.9 million is related to the Beryllium reporting unit within the Performance Alloys and Composites segment.

## Note L — Debt

Long-term debt in the Consolidated Balance Sheets is summarized as follows:

(Thousands)	December 31,	
	2015	2014
Revolving credit agreement	\$ —	\$ 10,000
Fixed rate industrial development revenue bonds payable in annual installments through 2021	5,308	5,961
Variable rate industrial development revenue bonds payable in 2016	8,305	8,305
Total outstanding	13,613	24,266
Current portion of long-term debt	(8,998)	(653)
Total	\$ 4,615	\$ 23,613

Maturities on long-term debt instruments as of December 31, 2015 are as follows:

2016	\$	8,998
2017		733
2018		773
2019		819
2020		864
Thereafter		1,426
<b>Total</b>	<b>\$</b>	<b>13,613</b>

In 2015, the Company entered into an amendment to its \$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 the Company 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 Credit Agreement.

At December 31, 2015, there was \$38.0 million outstanding against the letters of credit sub-facility. The Company pays a variable commitment fee that may reset quarterly ( 0.20% as of December 31, 2015 ) of the available and unborrowed amounts under the revolving credit line.

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. The Company was in compliance with all of its debt covenants as of December 31, 2015 and December 31, 2014.

The following table summarizes the Company's short-term lines of credit. Amounts shown as outstanding are included in short-term debt in the Consolidated Balance Sheets.

(Thousands)	December 31, 2015			December 31, 2014		
	Total	Outstanding	Available	Total	Outstanding	Available
Domestic	\$ 336,955	\$ —	\$ 336,955	\$ 322,475	\$ —	\$ 322,475
Foreign	9,283	—	9,283	12,334	—	12,334
<b>Total</b>	<b>\$ 346,238</b>	<b>\$ —</b>	<b>\$ 346,238</b>	<b>\$ 334,809</b>	<b>\$ —</b>	<b>\$ 334,809</b>

While the available borrowings under the individual existing credit lines total \$346.2 million, the covenants in the domestic Credit Agreement restrict the aggregate available borrowings to \$221.8 million as of December 31, 2015.

The domestic line is committed and includes all sub-facilities in the \$375.0 million maximum borrowing under the Credit Agreement. The Company has various foreign lines of credit, one of which for \$2.0 million, is committed and secured. The remaining foreign lines are uncommitted, unsecured, and renewed annually. The average interest rate on short-term debt was 0.42% and 4.90% as of December 31, 2015 and 2014, respectively. In 2014, the Company transferred its precious metal-denominated debt to its precious metals consignment facility. Refer to Note I for additional information.

In April 2011, the Company entered into an agreement with the Toledo-Lucas County Port Authority and the Dayton-Montgomery County Port Authority in Ohio to co-issue \$8.0 million in taxable development revenue bonds, with a fixed amortization term that will mature in 2021. The interest rate on these bonds is fixed at 4.9%, and the unamortized balance of the bonds was \$5.3 million at December 31, 2015.

In November of 1996, the Company entered into an agreement with the Lorain Port Authority in Ohio to issue \$8.3 million in variable rate industrial revenue bonds, maturing in 2016. The variable rate ranged from 0.05% to 0.25% in 2015 and from 0.18% to 0.28% in 2014.

**Note M — Leasing Arrangements**

The Company leases warehouse and manufacturing real estate, and manufacturing and computer equipment under operating leases with terms ranging up to 25 years . Operating lease expense amounted to \$8.3 million , \$8.7 million , and \$9.4 million during 2015 , 2014 , and 2013 , respectively. The future estimated minimum payments under capital leases and non-cancelable operating leases with initial lease terms in excess of one year at December 31, 2015 , are as follows:

(Thousands)	Capital	Operating
	Leases	Leases
2016	\$ 1,064	\$ 6,834
2017	1,064	5,689
2018	1,064	4,816
2019	1,064	3,666
2020	1,064	3,318
2021 and thereafter	2,572	6,431
Total minimum lease payments	7,892	\$ 30,754
Amounts representing interest	1,379	
Present value of net minimum lease payments	\$ 6,513	



## Note N — Pensions and Other Post-Employment Benefits

The obligation and funded status of the Company's pension and other post-employment benefit plans are shown below. The Pension Benefits column aggregates defined benefit pension plans in the U.S., Germany, and England, and the U.S. supplemental retirement plans. The Other Benefits column includes the domestic retiree medical and life insurance plan.

(Thousands)	Pension Benefits		Other Benefits	
	2015	2014	2015	2014
<b>Change in benefit obligation</b>				
Benefit obligation at beginning of year	\$ 271,785	\$ 221,748	\$ 16,540	\$ 31,398
Service cost	9,195	7,963	115	138
Interest cost	10,446	10,339	554	675
Plan amendments	—	—	—	(14,034)
Actuarial (gain) loss	(19,978)	43,476	(504)	223
Benefit payments from fund	(9,317)	(8,387)	—	—
Benefit payments directly by Company	(236)	(1,236)	(1,542)	(1,968)
Expenses paid from assets	(492)	(570)	—	—
Medicare Part D subsidy	—	—	—	108
Foreign currency exchange rate changes	(1,446)	(1,548)	37	—
Benefit obligation at end of year	259,957	271,785	15,200	16,540
<b>Change in plan assets</b>				
Fair value of plan assets at beginning of year	187,186	173,494	—	—
Actual return on plan assets	(4,657)	6,852	—	—
Employer contributions	12,366	16,145	—	—
Benefit payments from fund	(9,317)	(8,387)	—	—
Expenses paid from assets	(492)	(569)	—	—
Foreign currency exchange rate changes	(336)	(349)	—	—
Fair value of plan assets at end of year	184,750	187,186	—	—
Funded status at end of year	\$ (75,207)	\$ (84,599)	\$ (15,200)	\$ (16,540)
<b>Amounts recognized in the Consolidated Balance Sheets consist of:</b>				
Other assets	\$ 1,428	\$ 1,703	\$ —	\$ —
Other liabilities and accrued items	(960)	(753)	(1,433)	(1,472)
Retirement and post-employment benefits	(75,675)	(85,549)	(13,767)	(15,068)
	\$ (75,207)	\$ (84,599)	\$ (15,200)	\$ (16,540)
<b>Amounts recognized in other comprehensive income (before tax) consist of:</b>				
Net actuarial loss	\$ 113,368	\$ 122,641	\$ 229	\$ 275
Net prior service (credit) cost	(850)	(1,300)	11,038	(12,536)
	\$ 112,518	\$ 121,341	\$ 11,267	\$ (12,261)
<b>Amortizations expected to be recognized during next fiscal year (before tax):</b>				
Amortization of net loss	\$ 6,012	\$ 7,558	\$ —	\$ —
Amortization of prior service credit	(460)	(450)	(1,497)	—
	\$ 5,552	\$ 7,108	\$ (1,497)	\$ —
<b>Additional information</b>				
Accumulated benefit obligation for all defined benefit pension plans	\$ 251,956	\$ 260,536	\$ —	\$ —
For defined benefit pension plans with benefit obligations in excess of plan assets:				
Aggregate benefit obligation	254,178	266,377	—	—
Aggregate fair value of plan assets	177,543	180,075	—	—
For defined benefit pension plans with accumulated benefit obligations in excess of plan assets:				
Aggregate accumulated benefit obligation	243,139	255,128	—	—
Aggregate fair value of plan assets	177,543	180,075	—	—

**Components of net benefit cost and other amounts recognized in other comprehensive income (OCI)**

(Thousands)	Pension Benefits			Other Benefits		
	2015	2014	2013	2015	2014	2013
<b>Net benefit cost</b>						
Service cost	\$ 9,195	\$ 7,963	\$ 9,724	\$ 115	\$ 138	\$ 305
Interest cost	10,446	10,339	9,936	554	675	1,243
Expected return on plan assets	(13,611)	(12,419)	(12,261)	—	—	—
Amortization of prior service cost (benefit)	(450)	(434)	(340)	(1,497)	(1,498)	115
Recognized net actuarial loss	7,537	5,263	7,912	—	—	—
Net periodic cost	13,117	10,712	14,971	(828)	(685)	1,663
Settlements	—	7	—	—	—	—
Total net benefit cost	\$ 13,117	\$ 10,719	\$ 14,971	\$ (828)	\$ (685)	\$ 1,663

(Thousands)	Pension Benefits			Other Benefits		
	2015	2014	2013	2015	2014	2013
<b>Change in other comprehensive income</b>						
OCI at beginning of year	\$ 121,341	\$ 77,249	\$ 124,955	\$ (12,261)	\$ 52	\$ 2,587
Increase (decrease) in OCI:						
Recognized during year — prior service cost (credit)	450	434	340	1,497	1,498	(115)
Recognized during year — net actuarial (losses) gains	(7,537)	(5,263)	(7,912)	—	—	—
Occurring during year — prior service cost	—	—	—	—	(14,034)	—
Occurring during year — net actuarial losses (gains)	(1,697)	49,037	(40,143)	(503)	223	(2,397)
Other adjustments	—	—	(3)	—	—	(23)
Foreign currency exchange rate changes	(39)	(116)	12	—	—	—
OCI at end of year	\$ 112,518	\$ 121,341	\$ 77,249	\$ (11,267)	\$ (12,261)	\$ 52

**Summary of key valuation assumptions**

	Pension Benefits			Other Benefits		
	2015	2014	2013	2015	2014	2013
<b>Weighted-average assumptions used to determine benefit obligations at fiscal year end</b>						
Discount rate	4.27%	4.00%	4.80%	3.88%	3.50%	4.50%
Rate of compensation increase	4.05%	3.96%	4.43%	4.00%	4.00%	4.50%
<b>Weighted-average assumptions used to determine net cost for the fiscal year</b>						
Discount rate	4.00%	4.79%	3.97%	3.50%	4.13%	3.75%
Expected long-term return on plan assets	7.15%	7.15%	7.44%	N/A	N/A	N/A
Rate of compensation increase	3.95%	4.42%	4.42%	4.00%	4.50%	4.50%

The Company used a December 31 measurement date for the above plans.

Effective January 1, 2014, the Company revised the expected long-term rate of return assumption used in calculating the annual expense for its domestic defined benefit pension plan, decreasing it to 7.25% from 7.50%. The impact was accounted for as a change in estimate.

Management establishes the domestic expected long-term rate of return assumption by reviewing historical trends and analyzing the current and projected market conditions in relation to the plan's asset allocation and risk management objectives. Consideration is given to both recent plan asset performance as well as plan asset performance over various long-term periods of time, with an emphasis on the assumption being a prospective, long-term rate of return. Management consults with and considers the opinions of its outside investment advisors and actuaries when establishing the rate and reviews assumptions with the Audit Committee of the Board of Directors. Management believes that the 7.25% domestic expected long-term rate of return assumption is achievable and reasonable given current market conditions and forecasts, asset allocations, investment policies, and investment risk objectives.

The rate of compensation increase assumption was changed to 4.0% for 2014 and years after in the domestic defined benefit pension plan and the domestic retiree medical plan.

In the second quarter of 2012, the Company closed its domestic defined benefit pension plan to new entrants. Current plan participants will continue to accrue benefits under the existing formulas, while new hires are offered an enhanced defined contribution plan.

Assumptions for the defined benefit pension plans in Germany and England are determined separately from the U.S. plan assumptions, based on historical trends and current and projected market conditions in Germany and England. The plan in Germany is unfunded.

The Company has notified participants of changes to the domestic retiree medical plan, including changing the benefit formula for participants covered by the plan. The revised benefit formula is designed to lower costs for the Company and the majority of plan participants. As a result of this change, the plan liability on the Company's Consolidated Balance Sheet was reduced by \$14.0 million in the first quarter of 2014, with the offset increasing other comprehensive income, a component of shareholders' equity. The liability reduction will be recognized in earnings over the average remaining service life of participants.

**Assumed health care trend rates at fiscal year end**

	2015	2014
Health care trend rate assumed for next year	7.00%	7.00%
Rate that the trend rate gradually declines to (ultimate trend rate)	5.00%	5.00%
Year that the rate reaches the ultimate trend rate	2020	2019

Assumed health care cost trend rates can have a significant effect on the amounts reported for the health care plans. A one-percentage-point change in assumed health care cost trend rates would have the following effects:

(Thousands)	1-Percentage-Point Increase		1-Percentage-Point Decrease	
	2015	2014	2015	2014
Effect on total of service and interest cost components	\$ 15	\$ 15	\$ (14)	\$ (14)
Effect on post-employment benefit obligation	337	427	(311)	(392)

## Plan Assets

The following tables present the fair values of the Company's defined benefit pension plan assets as of December 31, 2015 and 2014 by asset category. Refer to Note Q to the Consolidated Financial Statements for definitions of fair value hierarchy.

(Thousands)	December 31, 2015			
	Total	Level 1	Level 2	Level 3
Cash	\$ 8,848	\$ 8,848	\$ —	\$ —
Equity securities:				
U.S. (a)	51,732	40,476	11,256	—
International (b)	29,799	26,744	3,055	—
Emerging markets (c)	10,434	10,290	144	—
Fixed-income securities:				
Intermediate-term bonds (d)	42,994	30,527	12,467	—
Short-term bonds (e)	3,875	—	3,875	—
Global bonds (f)	2,948	—	2,948	—
Other types of investments:				
Real estate fund (g)	5,799	5,722	77	—
Alternative strategies (h)	8,819	8,722	97	—
Pooled investment fund (i)	15,894	—	—	15,894
Multi-strategy hedge funds (j)	3,217	—	—	3,217
Private equity funds	290	—	—	290
Accrued interest and dividends	101	101	—	—
<b>Total</b>	<b>\$ 184,750</b>	<b>\$ 131,430</b>	<b>\$ 33,919</b>	<b>\$ 19,401</b>

(Thousands)	December 31, 2014			
	Total	Level 1	Level 2	Level 3
Cash	\$ 6,173	\$ 6,173	\$ —	\$ —
Equity securities:				
U.S. (a)	60,028	49,625	10,403	—
International (b)	28,372	25,361	3,011	—
Emerging markets (c)	13,498	13,300	198	—
Fixed income securities:				
Intermediate-term bonds (d)	18,635	14,755	3,880	—
Short-term bonds (e)	3,631	—	3,631	—
Global bonds (f)	30,030	26,795	3,235	—
Other types of investments:				
Real estate fund (g)	6,513	6,433	80	—
Alternative strategies (h)	8,477	8,382	95	—
Pooled investment fund (i)	6,613	—	—	6,613
Multi-strategy hedge funds (j)	4,962	—	—	4,962
Private equity funds	254	—	—	254
<b>Total</b>	<b>\$ 187,186</b>	<b>\$ 150,824</b>	<b>\$ 24,533</b>	<b>\$ 11,829</b>

(a) Mutual funds that invest in various sectors of the U.S. market.

(b) Mutual funds that invest in non-U.S. companies primarily in developed countries that are generally considered to be value stocks.

(c) Mutual funds that invest in non-U.S. companies in emerging market countries.

(d) Includes a mutual fund that employs a value-oriented approach to fixed income investment management and a mutual fund that invests primarily in investment-grade debt securities.

- (e) Includes a mutual fund that seeks a market rate of return for a fixed-income portfolio with low relative volatility of returns, investing generally in U.S. and foreign debt securities maturing in five years or less .
- (f) Mutual funds that invest in domestic and foreign sovereign securities, fixed income securities, mortgage-backed and asset-backed bonds, convertible bonds, high-yield bonds, and emerging market bonds.
- (g) Includes a mutual fund that typically invests at least 80% of its assets in equity and debt securities of companies in the real estate industry or related industries or in companies which own significant real estate assets at the time of investment.
- (h) Includes a mutual fund that tactically allocates assets to global equity, fixed income, and alternative strategies.
- (i) Includes a fund that invests in a broad portfolio of hedge funds.
- (j) Includes a hedge fund that employs multiple strategies to multiple asset classes with low correlations.

The following table summarizes changes in the fair value of the Company's defined benefit pension plan Level 3 assets measured using significant unobservable inputs during 2015 and 2014 :

(Thousands)	Total	Pooled Investment Fund	Multi-strategy Hedge Funds	Private Equity Funds
Balance at January 1, 2014	\$ 5,884	\$ —	\$ 5,467	\$ 417
Actual return:				
On assets still held at reporting date	(406)	113	(505)	(14)
On assets sold during the period	(20)	—	—	(20)
Purchases, sales, and settlements	6,371	6,500	—	(129)
Balance at December 31, 2014	\$ 11,829	\$ 6,613	\$ 4,962	\$ 254
Actual return:				
On assets still held at reporting date	(188)	(229)	5	36
On assets sold during the period	(1,750)	—	(1,750)	—
Purchases, sales, and settlements	9,510	9,510	—	—
Balance at December 31, 2015	\$ 19,401	\$ 15,894	\$ 3,217	\$ 290

Capital may be withdrawn from the multi-strategy hedge fund partnership on a monthly basis with a ten -day notice period.

The Company's domestic defined benefit pension plan investment strategy, as approved by the Governance and Organization Committee of the Board of Directors, is to employ an allocation of investments that will generate returns equal to or better than the projected long-term growth of pension liabilities so that the plan will be self-funding. The return objective is to maximize investment return to achieve and maintain a 100% funded status over time, taking into consideration required cash contributions. The allocation of investments is designed to maximize the advantages of diversification while mitigating the risk and overall portfolio volatility to achieve the return objective. Risk is defined as the annual variability in value and is measured in terms of the standard deviation of investment return. Under the Company's investment policies, allowable investments include domestic equities, international equities, fixed income securities, cash equivalents, and alternative securities (which include real estate, private venture capital investments, hedge funds, and tactical asset allocation). Ranges, in terms of a percentage of the total assets, are established for each allowable class of security. Derivatives may be used to hedge an existing security or as a risk reduction strategy. Current asset allocation guidelines are to invest 30% to 70% in equity securities, 20% to 50% in fixed income securities and cash, and up to 25% in alternative securities. Management reviews the asset allocation on a quarterly or more frequent basis and makes revisions as deemed necessary.

None of the plan assets noted above are invested in the Company's common stock.

## Cash Flows

### Employer Contributions

The Company expects to contribute \$16.0 million to its domestic defined benefit pension plan and \$1.4 million to its other benefit plans in 2016 .

The closure of the domestic defined benefit plan to new entrants in 2012 will reduce our plan funding requirements in the long term, but closure has a minimal impact on our funding requirements in the short term.

During 2013, we offered a one-time opportunity for terminated deferred vested participants in the domestic defined benefit plan to elect a lump sum payment in 2013 in lieu of an annuity upon retirement. The resulting lump sum payouts of \$14.8 million

were made from the pension plan assets during 2013, and no additional contribution from the Company was required to fund the payments. The lump sum payout option was part of a long-term program to reduce risk associated with our domestic pension plan assets and liabilities.

Effective 2016, all plan participants with an accrued benefit may elect an immediate payout in lieu of their future monthly annuity if the lump sum amount does not exceed \$100,000 .

#### ***Estimated Future Benefit Payments***

The following benefit payments, which reflect expected future service, as appropriate, are expected to be paid:

(Thousands)	Pension Benefits	Other Benefits	
		Gross Benefit Payment	Net of Medicare Part D Subsidy
2016	\$ 10,901	\$ 1,433	\$ 1,379
2017	13,108	1,521	1,470
2018	11,320	1,581	1,533
2019	12,634	1,539	1,495
2020	12,953	1,512	1,472
2021 through 2025	76,525	5,960	5,818

#### **Other Benefit Plans**

In addition to the plans shown above, the Company also has certain foreign subsidiaries with accrued unfunded pension and other post-employment arrangements. The liability for these arrangements was \$2.3 million at December 31, 2015 and \$2.1 million at December 31, 2014 , and was included in retirement and post-employment benefits in the Consolidated Balance Sheets.

The Company also sponsors defined contribution plans available to substantially all U.S. employees. The Company's annual defined contribution expense, including the expense for the enhanced defined contribution plan, was \$3.1 million in 2015 , \$3.0 million in 2014 , and \$2.8 million in 2013 .

## Note O — Accumulated Other Comprehensive Income

Changes in the components of accumulated other comprehensive income, including amounts reclassified out, for 2015 , 2014 and 2013 , and the balances in accumulated other comprehensive income as of December 31, 2015 , 2014 , and 2013 are as follows:

	Gains and Losses On Cash Flow Hedges			Pension and Post- Employment Benefits	Foreign Currency Translation	Total
(Thousands)	Foreign Currency	Precious Metals	Total			
Accumulated other comprehensive income as of December 31, 2012						
Gross	\$ 253	\$ 97	\$ 350	\$ (127,541)	\$ 4,077	\$ (123,114)
Deferred tax expense (benefit)	(1,314)	34	(1,280)	(33,405)	—	(34,685)
Net	\$ 1,567	\$ 63	\$ 1,630	\$ (94,136)	\$ 4,077	\$ (88,429)
2013 activity						
Other comprehensive income (loss) before reclassifications	\$ 618	\$ 4	\$ 622	\$ 42,553	\$ (3,790)	\$ 39,385
Amounts reclassified from accumulated other comprehensive income	(958)	(120)	(1,078)	7,687	—	6,609
Net current period other comprehensive income (loss) before tax	(340)	(116)	(456)	50,240	(3,790)	45,994
Deferred taxes on current period activity	(119)	(41)	(160)	17,613	—	17,453
2013 other comprehensive income (loss) after tax	(221)	(75)	(296)	32,627	(3,790)	28,541
Accumulated other comprehensive income as of December 31, 2013						
Gross	(87)	(19)	(106)	(77,301)	287	(77,120)
Deferred tax (benefit)	(1,433)	(7)	(1,440)	(15,792)	—	(17,232)
Net	\$ 1,346	\$ (12)	\$ 1,334	\$ (61,509)	\$ 287	\$ (59,888)
2014 activity						
Other comprehensive income (loss) before reclassifications	\$ 3,456	\$ 19	\$ 3,475	\$ (35,109)	\$ (4,440)	\$ (36,074)
Amounts reclassified from accumulated other comprehensive income	87	—	87	3,330	—	3,417
Net current period other comprehensive income (loss) before tax	3,543	19	3,562	(31,779)	(4,440)	(32,657)
Deferred taxes on current period activity	1,311	7	1,318	(11,626)	—	(10,308)
2014 other comprehensive income (loss) after tax	2,232	12	2,244	(20,153)	(4,440)	(22,349)
Accumulated other comprehensive income as of December 31, 2014						
Gross	3,456	—	3,456	(109,080)	(4,153)	(109,777)
Deferred tax (benefit)	(122)	—	(122)	(27,418)	—	(27,540)
Net	\$ 3,578	\$ —	\$ 3,578	\$ (81,662)	\$ (4,153)	\$ (82,237)
2015 activity						
Other comprehensive income (loss) before reclassifications	\$ 2,995	\$ —	\$ 2,995	\$ 2,249	\$ (1,335)	\$ 3,909
Amounts reclassified from accumulated other comprehensive income	(6,169)	—	(6,169)	5,580	—	(589)
Net current period other comprehensive income (loss) before tax	(3,174)	—	(3,174)	7,829	(1,335)	3,320
Deferred taxes on current period activity	(1,175)	—	(1,175)	2,963	—	1,788
2015 other comprehensive income (loss) after tax	(1,999)	—	(1,999)	4,866	(1,335)	1,532
Accumulated other comprehensive income as of December 31, 2015						
Gross	282	—	282	(101,251)	(5,488)	(106,457)
Deferred tax (benefit)	(1,297)	—	(1,297)	(24,455)	—	(25,752)
Net	\$ 1,579	\$ —	\$ 1,579	\$ (76,796)	\$ (5,488)	\$ (80,705)

Reclassifications from accumulated other comprehensive income of gains and losses on foreign currency cash flow hedges are recorded in Other-net in the Consolidated Statements of Income while gains and losses on precious metal cash flow hedges are recorded in Cost of sales in the Consolidated Statements of Income. Refer to Note Q for additional details on cash flow hedges.

Reclassifications from accumulated other comprehensive income for pension and post-employment benefits are included in the computation of the net periodic pension and post-employment benefit expense. Refer to Note N for additional details on pension and other post-employment expenses.

#### Note P — Stock-based Compensation

Stock incentive plans (the 2006 Stock Incentive Plan and the 2006 Non-employee Director Equity Plan) were approved at the May 2006 annual meeting of shareholders. These plans authorize the granting of option rights, stock appreciation rights (SARs), performance-restricted shares, performance shares, performance units, and restricted shares and replaced the 1995 Stock Incentive Plan and the 1997 Stock Incentive Plan for Non-employee Directors. The 2006 Stock Incentive Plan and the 2006 Non-employee Director Equity Plan were amended to, among other things, add additional shares to the plans. These amendments were approved by shareholders at the May 2014 annual meeting.

Stock-based compensation expense, recognized as a component of selling, general, and administrative expense, was \$5.5 million, \$4.8 million, and \$5.0 million in 2015, 2014, and 2013, respectively.

#### SARs/Stock Options

The Company may grant SARs to certain employees and non-employee directors. Upon exercise of vested SARs, the participant will receive a number of shares of common stock equal to the spread (the difference between the market price of the Company's common shares at the time of the exercise and the strike price established in the SARs agreement) divided by the common share price. The strike price of the SARs is equal to the market value of the Company's common shares on the day of the grant. The number of SARs available to be issued is established by plans approved by the shareholders. The vesting period and the life of the SARs are established in the SARs agreement at the time of the grant. The exercise of the SARs will be satisfied by the issuance of treasury shares. The SARs vest three years from the date of grant. SARs granted prior to 2011 expire in ten years, while the SARs granted in 2011 and later expire in seven years.

The following table summarizes the Company's SARs activity during 2015:

(Shares in thousands)	Number of SARs	Weighted- average Exercise Price Per Share	Aggregate Intrinsic Value	Weighted- average Remaining Term (Years)
Outstanding at December 31, 2014	968	\$ 28.32	\$ —	—
Granted	161	36.81	—	—
Exercised	(72)	19.03	—	—
Cancelled	(11)	36.99	—	—
Outstanding at December 31, 2015	1,046	30.18	2,379	3.7
Vested and expected to vest as of December 31, 2015	1,046	30.18	2,379	3.7
Exercisable at December 31, 2015	609	28.17	2,379	2.5

A summary of the status and changes of shares subject to SARs and the related average price per share follows:

(Shares in thousands)	Number of SARs	Weighted- average Grant Date Fair Value
Nonvested as of December 31, 2014	465	\$ 13.45
Granted	161	13.27
Vested	(180)	14.95
Cancelled	(9)	15.62
Nonvested as of December 31, 2015	437	12.21



As of December 31, 2015, \$0.7 million of expense with respect to nonvested SARs has yet to be recognized as expense over a weighted-average period of approximately 22 months. The total fair value of shares vested during 2015, 2014 and 2013 was \$2.7 million, \$3.2 million, and \$2.4 million.

The weighted-average grant date fair value for 2015, 2014, and 2013 was \$13.27, \$12.48, and \$12.54, respectively. The fair value will be amortized to compensation cost on a straight-line basis over the three years vesting period, or earlier if the employee is retirement eligible as defined in the Plan. Stock-based compensation expense relating to SARs was \$2.0 million in 2015, 2014, and 2013.

The fair value of the SARs was estimated on the grant date using the Black-Scholes pricing model with the following assumptions:

	2015	2014	2013
Risk-free interest rate	1.47%	1.64%	0.70%
Dividend yield	0.9%	1.0%	1.1%
Volatility	42.8%	45.5%	56.6%
Expected lives (in years)	5.0	5.0	5.0

The risk-free rate of return was based on the five-year Treasury note rate at the time the SARs were granted. The Company initiated a dividend in May 2012, subsequent to the 2012 grant date. The share price volatility was calculated based on the actual closing prices of the Company's common shares at month end over a period of approximately ten years prior to the granting of the SARs. This approach to measuring volatility is consistent with the approach used to calculate the volatility assumption in the valuation of stock options. The Company's current SARs program has been in place since 2006. The expected life assumption was based upon prior analyses.

Stock options may be granted to employees or non-employee directors of the Company. Option rights entitle the optionee to purchase common shares at a price equal to or greater than the market value on the date of grant. Option rights granted to employees generally become exercisable (i.e. vest) over a four-year period and expire ten years from the date of the grant. Options granted to employees may also be issued with shorter vesting periods. Options granted to non-employee directors vest in six months and expire ten years from the date of the grant. The number of options available to be issued is established in plans approved by shareholders. The exercise of options is generally satisfied by the issuance of new shares.

There were no stock options outstanding as of year end 2015. The cash received from the exercise of stock options was \$0.4 million in 2014 and \$1.2 million in 2013. The tax benefit realized from tax deductions from exercises was \$0.1 million in 2014 and \$0.5 million in 2013. The total intrinsic value of options exercised during the years ended December 31, 2014 and 2013, was \$0.3 million and \$1.0 million, respectively.

#### ***Restricted Stock***

The Company may grant restricted stock to employees and non-employee directors of the Company. These shares are restricted and vest over a designated period of time as defined at the date of the grant and are forfeited should the holder's employment terminate during the restriction period. The fair market value of the restricted shares is determined on the date of the grant and is amortized over the restriction period. The restriction period is typically three years unless the recipient is retirement eligible.

The fair value of the restricted stock is based on the closing stock price on the date of grant. The weighted-average grant date fair value for 2015, 2014, and 2013 was \$37.17, \$33.29, and \$27.35, respectively.

Stock-based compensation expense relating to restricted stock was \$2.1 million in 2015, \$1.8 million in 2014, and \$2.2 million in 2013. The unamortized compensation cost on the outstanding restricted stock was \$0.8 million as of December 31, 2015 and is expected to be amortized over a weighted-average period of 13 months. The income tax expense recognized from the vesting of restricted stock totaled less than \$0.1 million in 2015 and \$0.1 million in 2014, as compared to the tax benefit realized from the vesting of restricted stock of \$0.2 million in 2013.

The following table summarizes the restricted stock activity during 2015 :

(Shares in thousands)	Number of Shares	Weighted- average Grant Date Fair Value
Outstanding at December 31, 2014	152	\$ 30.76
Granted	59	37.17
Vested	(73)	30.36
Forfeited	(4)	36.81
Outstanding at December 31, 2015	134	\$ 33.32

#### ***Long-term Incentive Plans***

Under long-term incentive compensation plans, executive officers and selected other employees receive cash or stock awards based upon the Company's performance over the defined period, typically three years . Awards may vary based upon the degree to which actual performance exceeds the pre-determined threshold, target, and maximum performance levels at the end of the performance periods. Payouts may be subjected to attainment of threshold performance objectives.

Compensation expense is based upon the performance projections for the three -year plan period, the percentage of requisite service rendered, and the fair market value of the Company's common shares on the date of grant. The offset to the compensation expense for the portion of the award to be settled in shares is recorded within shareholders' equity and was \$1.4 million for 2015 , \$1.0 million for 2014 , and \$0.8 million for 2013 .

#### ***Directors Deferred Compensation***

Non-employee directors may defer all or part of their fees into the Company's common shares. The fair value of the deferred shares is determined at the share acquisition date and is recorded within shareholders' equity. Subsequent changes in the fair value of the Company's common shares do not impact the recorded values of the shares.

The following table summarizes the stock activity for the directors' deferred compensation plan during 2015 :

(Shares in thousands)	Number of Shares	Weighted- average Grant Date Fair Value
Outstanding at December 31, 2014	120	\$ 25.33
Granted	21	37.08
Distributed	(3)	32.17
Outstanding at December 31, 2015	138	\$ 25.60

During the years ended December 31, 2015 , 2014 and 2013 , the weighted-average grant date fair value of shares granted was \$37.08 , \$33.46 , and \$26.99 , respectively.

#### **Note Q — Fair Value Information and Derivative Financial Instruments**

The Company measures and records financial instruments at fair value. A hierarchy is used for those instruments measured at fair value that distinguishes between assumptions based upon market data (observable inputs) and the Company's assumptions (unobservable inputs). The hierarchy consists of three levels:

Level 1 — Quoted market prices in active markets for identical assets and liabilities;

Level 2 — Inputs other than Level 1 inputs that are either directly or indirectly observable; and

Level 3 — Unobservable inputs developed using estimates and assumptions developed by the Company, which reflect those that a market participant would use.

The following table summarizes the financial instruments measured at fair value in the Consolidated Balance Sheet as of December 31, 2015 :

(Thousands)	Total	Fair Value Measurements		
		Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Observable Inputs (Level 2)	Other Significant Unobservable Inputs (Level 3)
Financial Assets				
Deferred compensation investments	\$ 2,524	\$ 2,503	\$ 21	\$ —
Foreign currency forward contracts	462	—	462	—
Total	\$ 2,986	\$ 2,503	\$ 483	\$ —
Financial Liabilities				
Deferred compensation liability	\$ 2,524	\$ 2,503	\$ 21	\$ —
Foreign currency forward contracts	180	—	180	—
Total	\$ 2,704	\$ 2,503	\$ 201	\$ —

The Company uses a market approach to value the assets and liabilities for financial instruments in the table above. Outstanding contracts are valued through models that utilize market observable inputs, including both spot and forward prices, for the same underlying currencies and metals. The Company's deferred compensation investment and liabilities are based on the fair value of the investments corresponding to the employees' investment selections, primarily in mutual funds, based on quoted prices in active markets for identical assets. Deferred compensation investments are primarily presented in Other assets. Deferred compensation liabilities are primarily presented in Other long-term liabilities.

The carrying values of the other working capital items and debt in the Consolidated Balance Sheet approximate fair values as of December 31, 2015 .

The Company uses derivative contracts to hedge portions of its foreign currency exposures and may also use derivatives to hedge a portion of its precious metal exposures. The objectives and strategies for using derivatives in these areas are as follows:

**Foreign Currency.** The Company sells a portion of its products to overseas customers in their local currencies, primarily the euro and yen. The Company secures foreign currency derivatives, mainly forward contracts and options, to hedge these anticipated sales transactions. The purpose of the hedge program is to protect against the reduction in the dollar value of foreign currency sales from adverse exchange rate movements. Should the dollar strengthen significantly, the decrease in the translated value of the foreign currency sales should be partially offset by gains on the hedge contracts. Depending upon the methods used, the hedge contracts may limit the benefits from a weakening U.S. dollar.

The use of forward contracts locks in a firm rate and eliminates any downside from an adverse rate movement as well as any benefit from a favorable rate movement. The Company may from time to time choose to hedge with options or a tandem of options known as a collar. These hedging techniques can limit or eliminate the downside risk but can allow for some or all of the benefit from a favorable rate movement to be realized. Unlike a forward contract, a premium is paid for an option; collars, which are a combination of a put and call option, may have a net premium but can be structured to be cash neutral. The Company will primarily hedge with forward contracts due to the relationship between the cash outlay and the level of risk.

**Precious Metals.** The Company maintains the majority of its precious metal production requirements on consignment in order to reduce its working capital investment and the exposure to metal price movements. When a precious metal product is fabricated and ready for shipment to the customer, the metal is purchased out of consignment at the current market price. The price paid by the Company forms the basis for the price charged to the customer. This methodology allows for changes in either direction in the market prices of the precious metals used by the Company to be passed through to the customer and reduces the impact changes in prices could have on the Company's margins and operating profit. The consigned metal is owned by financial institutions who charge the Company a financing fee based upon the current value of the metal on hand.

In certain instances, a customer may want to establish the price for the precious metal at the time the sales order is placed rather than at the time of shipment. Setting the sales price at a different date than when the material would be purchased potentially creates an exposure to movements in the market price of the metal. Therefore, in these limited situations, the Company may elect to enter into a forward contract to purchase precious metal. The forward contract allows the Company

to purchase metal at a fixed price on a specific future date. The price in the forward contract serves as the basis for the price to be charged to the customer. By doing so, the selling price and purchase price are matched, and the Company's price exposure is reduced.

The Company refines precious metal containing materials for its customers and typically will purchase the refined metal from the customer at current market prices. In limited circumstances, the customer may want to fix the price to be paid at the time of the order as opposed to when the material is refined. The customer may also want to fix the price for a set period of time. The Company may then elect to enter into a hedge contract, either a forward contract or a swap, to fix the price for the estimated quantity of metal to be purchased, thereby reducing the exposure to adverse movements in the price of the metal.

The Company may from time to time elect to purchase precious metal and hold in inventory rather than on consignment due to potential credit line limitations or other factors. These purchases are typically held for a short duration. A forward contract will be secured at the time of the purchase to fix the price to be used when the metal is transferred back to the consignment line, thereby limiting any price exposure during the time when the metal was owned.

A team consisting of senior financial managers reviews the estimated exposure levels, as defined by budgets, forecasts, and other internal data, and determines the timing, amounts, and instruments to use to hedge exposures. Management analyzes the effective hedged rates and the actual and projected gains and losses on the hedging transactions against the program objectives, targeted rates, and levels of risk assumed. Foreign currency contracts are typically layered in at different times for a specified exposure period in order to minimize the impact of market rate movements.

The use of derivatives is governed by policies adopted by the Audit Committee of the Board of Directors. The Company will only enter into a derivative contract if there is an underlying identified exposure. Contracts are typically held to maturity. The Company does not engage in derivative trading activities and does not use derivatives for speculative purposes. The Company only uses hedge contracts that are denominated in the same currency or metal as the underlying exposure.

The fair values of the outstanding derivatives are recorded as assets (if the derivatives are in a gain position) or liabilities (if the derivatives are in a loss position). The fair values will also be classified as short term or long term depending upon maturity dates. The following table summarizes the notional amount and the fair value of the Company's outstanding derivatives and balance sheet classification as of December 31, 2015 and 2014 :

(Thousands)	December 31, 2015		December 31, 2014	
	Notional Amount	Fair Value	Notional Amount	Fair Value
Prepaid expenses				
Foreign currency forward contracts - yen	\$ 5,138	\$ 60	\$ 6,835	\$ 773
Foreign currency forward contracts - euro	18,181	402	33,215	2,683
	23,319	462	40,050	3,456
Other liabilities and accrued items				
Foreign currency forward contracts - yen	5,102	(94)	—	—
Foreign currency forward contracts - euro	10,514	(86)	—	—
	15,616	(180)	—	—
Total	\$ 38,935	\$ 282	\$ 40,050	\$ 3,456

All of the foreign currency derivative contracts outstanding at December 31, 2015 and 2014 were designated and effective as cash flow hedges. There were no precious metal derivative contracts outstanding at December 31, 2015 and 2014.

There was no ineffectiveness associated with the derivative contracts outstanding at December 31, 2015 or 2014 , and no ineffectiveness expense was recorded in 2015 , 2014 , or 2013 .

The fair value of derivative contracts recorded in accumulated other comprehensive income totaled \$0.3 million as of December 31, 2015 . The Company expects to relieve this balance to the Consolidated Statement of Income in 2016 . The fair value of derivative contracts in accumulated other comprehensive income totaled \$3.5 million at December 31, 2014 .

## **Note R — Contingencies and Commitments**

### **Chronic Beryllium Disease (CBD) Claims**

The Company 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 related ailments as a result of exposure to beryllium. Plaintiffs in CBD cases seek recovery under theories of 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.

Employee cases, in which plaintiffs have a high burden of proof, have historically involved relatively small losses to the Company. Third-party plaintiffs (typically employees of customers) face a lower burden of proof than do the Company's employees, but these cases have generally been covered by varying levels of insurance. Management has vigorously contested the CBD cases brought against the Company.

Non-employee claims for CBD are covered by insurance, subject to certain limitations. The insurance covers defense costs and indemnity payments (resulting from settlements or court verdicts) and is subject to various levels of deductibles. In 2015 and 2014, defense and indemnity costs were less than the deductible.

There was one CBD case outstanding as of December 31, 2015, and the Company does not expect the resolution of this matter to have a material impact on the consolidated financial statements. This case was filed during 2013.

Although it is not possible to predict the outcome of any pending litigation, the Company provides for costs related to litigation 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 the actions could be decided unfavorably in amounts exceeding the Company's reserves. An unfavorable outcome or settlement of a CBD case or adverse media coverage could encourage the commencement of additional similar litigation. The Company is unable to estimate its potential exposure to unasserted claims.

Based upon currently known facts and assuming collectibility of insurance, the Company does not believe that resolution of the current or future beryllium proceedings will have a material adverse effect on the financial condition or cash flow of the Company. However, the Company's results of operations could be materially affected by unfavorable results in one or more cases.

### **Insurance Recoverable**

After recording and investigating a \$7.4 million inventory loss in 2012, the Company filed a claim with its insurance provider under existing policies for theft. In 2014, the Company and the insurance company settled the claim, and the Company received a cash payment of \$6.8 million and recognized the amount in Other-net in the Consolidated Statement of Income.

The Company collected \$5.6 million and \$4.0 million during 2015 and 2014, respectively, as part of settlement agreements with contractors and insurance companies for outstanding disputes regarding construction of the Company's beryllium pebble facility located in Elmore, Ohio. The cash received and the benefit of these settlements were recorded in Other-net in the Consolidated Statements of Income.

### **Environmental Proceedings**

The Company has an active program for environmental compliance that includes the identification of environmental projects and estimating the impact on the Company's financial performance and available resources. Environmental expenditures that relate to current operations, such as wastewater treatment and control of airborne emissions, are either expensed or capitalized as appropriate. The Company records reserves for the probable costs for identified environmental remediation projects. The Company's environmental engineers perform routine ongoing analyses of the remediation sites and will use outside consultants to assist in their analyses from time to time. Accruals are based upon their analyses and are established based on the reasonably estimable loss or range of loss. The accruals are revised for the results of ongoing studies, changes in strategies, inflation, and for differences between actual and projected costs. The accruals may also be affected by rulings and negotiations with regulatory agencies. The timing of payments often lags the accrual, as environmental projects typically require a number of years to complete.

The environmental reserves recorded represent the Company's best estimate of what is reasonably possible and cover existing or currently foreseen projects based upon current facts and circumstances. The Company does not believe that it is reasonably possible that the cost to resolve environmental matters for sites where the investigative work and work plan development are substantially complete will be materially different than what has been accrued while the ultimate loss contingencies for sites that are in the preliminary stages of investigation cannot be reasonably determined at the present time. As facts and circumstances change, the ultimate cost may be revised and the recording of additional costs may be material in the period in which the additional costs are accrued. The Company does not believe that the ultimate liability for environmental matters will have a material impact

on its financial condition or liquidity due to the nature of known environmental matters and the extended period of time during which environmental remediation normally takes place.

The undiscounted reserve balance at the beginning of the year, the amounts expensed and paid, and the balance at the end of the year for 2015 and 2014 are as follows:

(Thousands)	2015	2014
Reserve balance at beginning of year	\$ (4,922)	\$ (4,809)
Expensed	(1,445)	(275)
Paid	653	162
Reserve balance at end of year	\$ (5,714)	\$ (4,922)
Ending balance recorded in:		
Other liabilities and accrued items	\$ (620)	\$ (460)
Other long-term liabilities	(5,094)	(4,462)

The majority of spending in 2015 and 2014 was for various remediation projects at the Elmore, Ohio plant site.

#### Other

The Company is subject to various legal or other proceedings that relate to the ordinary course of its business. The Company believes that the resolution of these proceedings, individually or in the aggregate, will not have a material adverse impact upon the Company's consolidated financial statements.

The Company has outstanding letters of credit totaling \$38.0 million related to workers' compensation, consigned precious metal guarantees, environmental remediation issues, and other matters. The majority of the Company's outstanding letters of credit expire in 2016 and are expected to be renewed.

## Note S — Quarterly Data (Unaudited)

The following tables summarize selected quarterly financial data for the years ended December 31, 2015 and 2014 :

	2015					
(Thousands except per share amounts)	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Total	
Net sales	\$ 290,024	\$ 276,855	\$ 244,354	\$ 214,039	\$ 1,025,272	
Gross margin	52,355	51,327	44,003	43,095	190,780	
Percent of net sales	18.1%	18.5%	18.0%	20.1%	18.6%	
Net income	\$ 8,984	\$ 9,067	\$ 7,392	\$ 6,715	\$ 32,158	
Net income per share of common stock:						
Basic	\$ 0.45	\$ 0.45	\$ 0.37	\$ 0.34	\$ 1.60	
Diluted	0.44	0.44	0.36	0.33	1.58	
Cash dividends per share of common stock	0.085	0.090	0.090	0.090	0.355	
Stock price range:						
High	\$ 39.96	\$ 41.85	\$ 36.53	\$ 35.21		
Low	31.95	34.17	28.83	26.02		

	2014					
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Total	
Net sales	\$ 258,929	\$ 287,965	\$ 291,570	\$ 288,426	\$ 1,126,890	
Gross margin	45,462	49,801	54,843	55,797	205,903	
Percent of net sales	17.6%	17.3%	18.8%	19.3%	18.3%	
Net income	\$ 7,710	\$ 9,511	\$ 12,644	\$ 12,266	\$ 42,131	
Net income per share of common stock:						
Basic	\$ 0.37	\$ 0.46	\$ 0.62	\$ 0.61	\$ 2.06	
Diluted	0.37	0.45	0.61	0.60	2.02	
Cash dividends per share of common stock	0.080	0.085	0.085	0.085	0.335	
Stock price range:						
High	\$ 35.19	\$ 37.96	\$ 39.38	\$ 40.60		
Low	25.21	31.69	30.88	26.64		

The sum of the per share amounts may not equal the total because the average equivalent shares differ in the quarterly and annual periods.

Prior year amounts have been revised to correct an error in stock compensation expense. The Company assessed the impact of this error on quarterly periods for the year ended December 31, 2015. The impact of the error increased Selling, general, and administrative expense by \$1.0 million in the first quarter and decreased Selling, general, and administrative expense by \$0.3 million and \$0.7 million in the second quarter and third quarter, respectively. The after-tax impact of this error reduced Net income by \$0.7 million in the first quarter and increased Net income by \$0.2 million and \$0.5 million in the second quarter and third quarter, respectively. The impact of the error decreased both Basic and Diluted Net income per share by \$0.03 in the first quarter and increased Basic and Diluted Net income per share by \$0.01 and \$0.02 in the second quarter and third quarter, respectively.

The Company assessed the impact of this error on quarterly periods for the year ended December 31, 2014. The impact of the error reduced Selling, general, and administrative expense by \$0.6 million, \$0.3 million, and \$0.4 million for the first, third, and fourth quarters, respectively, and increased Selling, general, and administrative expense by \$0.7 million for the second quarter. The after-tax impact of this error on quarterly periods for the year ended December 31, 2014 increased Net income by \$0.4 million, \$0.2 million, and \$0.3 million for the first quarter, third, and fourth quarters, respectively, and reduced Net income by \$0.5 million for the second quarter. The impact of the error increased Basic Net income per share by \$0.01 and increased Diluted Net income per share by \$0.02 in the first quarter. The impact of the error increased Basic and Diluted Net income per share by \$0.01 and \$0.02 in the third and fourth quarters, respectively, and decreased Basic and Diluted Net income per share by \$0.02 for the second quarter.

Refer to Note B to the Consolidated Financial Statements for additional detail.

**Item 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE**

None.

**Item 9A. CONTROLS AND PROCEDURES**

a) Evaluation of Disclosure Controls and Procedures

The Company carried out an evaluation under the supervision and with participation of our management, including the chief executive officer and chief financial officer, of the effectiveness of the design and operation of disclosure controls and procedures as of December 31, 2015 pursuant to Rule 13a-15(b) and 15d-15(b) under the Securities Exchange Act of 1934, as amended (Exchange Act). Based on that evaluation, management, including the chief executive officer and chief financial officer, concluded that disclosure controls and procedures are effective as of December 31, 2015 .

b) Management's Report on Internal Control over Financial Reporting

The Report of Management on Internal Control over Financial Reporting and of the Report of Independent Registered Public Accounting Firm thereon are set forth in Item 8 of this Form 10-K and are incorporated herein by reference.

c) Changes in Internal Control over Financial Reporting

During the year ended December 31, 2015, the Company redesigned its review controls to address a material weakness recognized during the third quarter of 2015 related to errors in the manner in which the Company had been amortizing stock compensation expense for retirement eligible employees. Specific actions to redesign the review controls included (a) developing and implementing additional procedures to increase the level of review and validation of the Company's stock compensation grants and expense, (b) increasing the level of knowledge among Company employees in the area of stock compensation, (c) correcting the software used to calculate stock compensation expense with respect to age and hire dates to ensure proper expensing of awards with retirement eligibility provisions, and (d) increasing communication between the Company's human resources, treasury, and accounting departments. After completing the testing of the design and operating effectiveness of these internal controls, management concluded that we have remediated the previously identified material weakness as of December 31, 2015.

Except for the items described above, there have been no other changes in our internal control over financial reporting identified in connection with the evaluation required by Rule 13a-15(d) and 15d-15(d) of the Exchange Act that occurred during the three months ended December 31, 2015 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

**Item 9B. OTHER INFORMATION**

None.



## PART III

### Item 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information under “Election of Directors” in the proxy statement for our 2016 annual meeting of shareholders, to be filed with the Securities and Exchange Commission pursuant to Regulation 14A, is incorporated herein by reference. The information required by Item 10 relating to our executive officers is included under the caption “Executive Officers of the Registrant” in Part I of this Form 10-K and is incorporated herein by reference. The information required by Item 10 with respect to directors, the Audit Committee of the Board of Directors, and Audit Committee financial experts is incorporated herein by reference from the section entitled “Corporate Governance; Committees of the Board of Directors — Audit Committee” and “— Audit Committee Expert, Financial Literacy and Independence” in the proxy statement for our 2016 annual meeting of shareholders to be filed with the Securities and Exchange Commission pursuant to Regulation 14A. The information required by Item 10 regarding compliance with Section 16(a) of the Exchange Act is incorporated herein by reference from the section entitled “Section 16(a) Beneficial Ownership Reporting Compliance” in the proxy statement for our 2016 annual meeting of shareholders to be filed with the Securities and Exchange Commission pursuant to Regulation 14A.

We have adopted a Policy Statement on Significant Corporate Governance Issues and a Code of Conduct Policy that applies to our chief executive officer and senior financial officers, including the principal financial and accounting officer, controller, and other persons performing similar functions, in compliance with applicable New York Stock Exchange and Securities and Exchange Commission requirements. The aforementioned materials, along with the charters of the Audit, Governance and Organization, and Compensation Committees of our Board of Directors, which also comply with applicable requirements, are available on our web site at <http://materion.com>, and copies are also available upon request by any shareholder to Secretary, Materion Corporation, 6070 Parkland Boulevard, Mayfield Heights, Ohio 44124. We make our reports on Forms 10-K, 10-Q, and 8-K available on our web site, free of charge, as soon as reasonably practicable after these reports are filed with the Securities and Exchange Commission, and any amendments and/or waivers to our Code of Conduct Policy, Policy Statement on Significant Corporate Governance Issues, and Committee Charters will also be made available on our web site. The information on our web site is not incorporated by reference into this Form 10-K.

### Item 11. EXECUTIVE COMPENSATION

The information required under Item 11 is incorporated by reference from the sections entitled “Executive Compensation” and “2015 Director Compensation” in the proxy statement for our 2016 annual meeting of shareholders to be filed with the Securities and Exchange Commission pursuant to Regulation 14A.

**Item 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS**

The information required under Item 12 regarding security ownership is incorporated by reference from the section entitled “Security Ownership of Certain Beneficial Owners and Management” in the proxy statement for our 2016 annual meeting of shareholders to be filed with the Securities and Exchange Commission pursuant to Regulation 14A. The securities authorized for issuance information required by Item 12 is set forth in the table below.

**Equity Compensation Plan Information**

<b>Plan Category</b>	<b>Number of Securities to be Issued Upon Exercise of Outstanding Options, Warrants and Rights (1)</b>	<b>Weighted-average Exercise Price of Outstanding Options, Warrants and Rights</b>	<b>Number of Securities Remaining available for Future Issuance Under Equity Compensation Plan (Excluding Securities Reflected in Column a) (2)</b>
Equity compensation plans approved by security holders	1,046,354	\$30.18	749,020
Equity compensation plans not approved by security holders	—	—	—
<b>Total</b>	<b>1,046,354</b>	<b>\$30.18</b>	<b>749,020</b>

(1) Consists of SARs awarded under the 2006 Stock Incentive Plan, as Amended and Restated.

(2) Represents the number of shares of common stock available to be awarded as of December 31, 2015. Effective May 7, 2014, all equity compensation awards are granted pursuant to the shareholder approved 2006 Stock Incentive Plan, as Amended and Restated, and the 2006 Non-employee Director Equity Plan, as Amended and Restated.

**Item 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE**

The information required under Item 13 is incorporated herein by reference from the sections entitled “Related Party Transactions” and “Corporate Governance; Committees of the Board of Directors — Director Independence” of the proxy statement for our 2016 annual meeting of shareholders to be filed with the Securities and Exchange Commission pursuant to Regulation 14A.

**Item 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES**

The information required under Item 14 is incorporated herein by reference from the section entitled “Ratification of Independent Registered Public Accounting Firm” of the proxy statement for our 2016 annual meeting of shareholders to be filed with the Securities and Exchange Commission pursuant to Regulation 14A.

## PART IV

### Item 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

#### (a) 1. Financial Statements and Supplemental Information

The financial statements listed in the accompanying index to financial statements are included in Item 8 of this Form 10-K.

#### (a) 2. Financial Statement Schedules

The following consolidated financial information for the years ended December 31, 2015, 2014, and 2013 is submitted herewith:

Schedule II — Valuation and qualifying accounts.

All other schedules for which provision is made in the applicable accounting regulations of the Securities and Exchange Commission are not required under the related instructions or are inapplicable, and therefore have been omitted.

#### (a) 3. Exhibits

All documents referenced below were filed pursuant to the Exchange Act by Materion Corporation, file number 001-15885, unless otherwise noted.

- (3a) Amended and Restated Articles of Incorporation of Materion Corporation (filed as Exhibit 3.2 to the Company's Quarterly Report on Form 10-Q for the period ended on June 27, 2014), incorporated herein by reference.
- (3b) Amended and Restated Code of Regulations (filed as Exhibit 3.1 to the Company's Quarterly Report on Form 10-Q for the period ended June 27, 2014), incorporated herein by reference.
- (4a) Indenture Modification between Toledo-Lucas County Port Authority, dated as of May 30, 2003 (filed as Exhibit 4 to the Company's Quarterly Report on Form 10-Q for the period ended June 27, 2003), incorporated herein by reference.
- (4b) Pursuant to Regulation S-K, Item 601(b)(4), the Company agrees to furnish to the Securities and Exchange Commission, upon its request, a copy of the instruments defining the rights of holders of long-term debt of the Company that are not being filed with this report.
- (4c) Second Amended and Restated Credit Agreement dated June 20, 2013, among Materion Corporation, Materion Advanced Materials Technologies and Services Netherlands B.V., JPMorgan Chase Bank, N.A. and other lenders from time to time party thereto (filed as Exhibit 10.1 to the Company's Form 8-K filed on June 25, 2013), incorporated herein by reference.
- (4d) Amendment No. 1 to the Second Amended and Restated Credit Agreement dated December 18, 2015, among Materion Corporation, Materion Advanced Materials Technologies and Services Netherlands B.V., JPMorgan Chase Bank, N.A. and other lenders from time to time party thereto (filed as Exhibit 10.1 to the Company's Form 8-K filed on December 21, 2015), incorporated herein by reference.
- (4e) Third Amended and Restated Precious Metals Agreement dated October 1, 2010, between Brush Engineered Materials Inc. and other borrowers and The Bank of Nova Scotia (filed as Exhibit 4.2 to the Company's Form 8-K filed on October 4, 2010), incorporated herein by reference.
- (4f) Amendment No. 1 to the Third Amended and Restated Precious Metals Agreement dated March 31, 2011, among Materion Corporation and other borrowers and The Bank of Nova Scotia (filed as Exhibit 10.1 to the Company's Form 8-K filed on April 6, 2011), incorporated herein by reference.
- (4g) Amendment No. 2 to the Third Amended and Restated Precious Metals Agreement dated August 18, 2011, among Materion Corporation and other borrowers and The Bank of Nova Scotia (filed as Exhibit 10.1 to the Company's Form 8-K filed on August 22, 2011), incorporated herein by reference.
- (4h) Amendment No. 3 to the Third Amended and Restated Precious Metals Agreement dated October 17, 2011, among Materion Corporation and other borrowers and The Bank of Nova Scotia (filed as Exhibit 10.1 to the Company's Form 8-K filed on October 18, 2011), incorporated herein by reference.
- (4i) Amendment No. 4 to the Third Amended and Restated Precious Metals Agreement dated September 13, 2013, among Materion Corporation and other borrowers and The Bank of Nova Scotia (filed as Exhibit 10.1 to the Company's Form 8-K filed on September 18, 2013), incorporated herein by reference.
- (4j) Amendment No. 5 to the Third Amended and Restated Precious Metals Agreement dated January 13, 2015, among Materion Corporation and other borrowers and The Bank of Nova Scotia (filed as Exhibit 4u to the Company's Annual Report on Form 10-K for the year ended December 31, 2014), incorporated herein by reference.

- (4k) Amendment No. 6 to the Third Amended and Restated Precious Metals Agreement dated April 10, 2015, among Materion Corporation and other borrowers and The Bank of Nova Scotia (filed as Exhibit 4.1 to the Company's Form 10-Q for the period ended April 3, 2015), incorporated herein by reference.
- (10a) Form of Indemnification Agreement entered into by the Company and its executive officers (filed as Exhibit 10a to the Company's Annual Report on Form 10-K for the year ended December 31, 2008), incorporated herein by reference.
- (10b) Form of Indemnification Agreement entered into by the Company and its directors (filed as Exhibit 10b to the Company's Annual Report on Form 10-K for the year ended December 31, 2008), incorporated herein by reference.
- (10c)\* Amended and Restated Form of Severance Agreement for Executive Officers (filed as Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q for the period ended June 27, 2008), incorporated herein by reference.
- (10d)\* Amendment No. 1 to Amended and Restated Severance Agreement, dated May 4, 2011 (filed as Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q for the period ended July 1, 2011), incorporated herein by reference.
- (10e)\* Amended and Restated Form of Severance Agreement for Key Employees (filed as Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the period ended June 27, 2008), incorporated herein by reference.
- (10f)\*# Form of Severance Agreement for Key Employees.
- (10g)\* Form of Executive Insurance Agreement entered into by the Company and certain employees dated January 2, 2002 (filed as Exhibit 10g to the Company's Annual Report on Form 10-K for the year ended December 31, 1994), incorporated herein by reference.
- (10h)\* Form of Trust Agreement between the Company and Key Trust Company of Ohio, N.A. (formerly Ameritrust Company National Association) on behalf of the Company's executive officers (filed as Exhibit 10e to the Company's Annual Report on Form 10-K for the year ended December 31, 1994), incorporated herein by reference.
- (10i)\* 2015 Management Incentive Plan (filed as Exhibit 10i to the Company's Annual Report on Form 10-K filed for the year ended December 31, 2015), incorporated herein by reference.
- (10j)\*# 2016 Management Incentive Plan.
- (10k)\* Amended and Restated 2006 Stock Incentive Plan (filed as Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q for the period ended June 27, 2008), incorporated herein by reference.
- (10l)\* Amended and Restated Materion Corporation 2006 Stock Incentive Plan (as Amended and Restated as of May 4, 2011) (filed as Exhibit 10.1 to the Registrant's Form 8-K filed on May 5, 2011), incorporated herein by reference.
- (10m)\* Amended and Restated Materion Corporation 2006 Stock Incentive Plan (as Amended and Restated as of May 7, 2014) (filed as Exhibit 4.4 to the Registration Statement on Form S-8 (Registration No. 333-195762), incorporated herein by reference.
- (10n)\* Form of 2012 Restricted Stock Units Agreement (Cash-Settled) (filed as Exhibit 10aa to the Company's Annual Report on Form 10-K for the year ended December 31, 2012), incorporated herein by reference.
- (10o)\* Form of 2012 Restricted Stock Units Agreement (Stock-Settled) (filed as Exhibit 10ab to the Company's Annual Report on Form 10-K for the year ended December 31, 2012), incorporated herein by reference.
- (10p)\* Form of 2012 Performance-Based Restricted Stock Units and Performance Shares Agreement (Cash-settled) (filed as Exhibit 10ad to the Company's Annual Report on Form 10-K for the year ended December 31, 2012), incorporated herein by reference.
- (10q)\* Form of 2012 Performance-Based Restricted Stock Units and Performance Shares Agreement (Stock-settled) (filed as Exhibit 10ae to the Company's Annual Report on Form 10-K for the year ended December 31, 2012), incorporated herein by reference.
- (10r)\* Form of 2014 Performance-Based Restricted Stock Units (Cash-settled) (filed as Exhibit 10y to the Company's Annual Report on Form 10-K for the year ended December 31, 2013), incorporated herein by reference.
- (10s)\* Form of 2014 Performance-Based Restricted Stock Units (Stock-settled) (filed as Exhibit 10z to the Company's Annual Report on Form 10-K for the year ended December 31, 2013), incorporated herein by reference.
- (10t)\*# Form of 2016 Restricted Stock Units Agreement (Cash-settled).
- (10u)\*# Form of 2016 Restricted Stock Units Agreement (Stock-settled).
- (10v)\*# Form of 2016 Performance-Based Restricted Stock Units (Cash-settled).
- (10w)\*# Form of 2016 Performance-Based Restricted Stock Units (Stock-settled).
- (10x)\* Form of 2006 Stock Appreciation Rights Agreement (filed as Exhibit 10.3 to the Current Report on Form 8-K filed by the Company on May 8, 2006), incorporated herein by reference.
- (10y)\* Form of 2007 Stock Appreciation Rights Agreement (filed as Exhibit 10.5 to Amendment No. 1 to the Current Report on Form 8-K filed by the Company on February 16, 2007), incorporated herein by reference.
- (10z)\* Form of 2008 Stock Appreciation Rights Agreement (filed as Exhibit 10an to the Company's Annual Report on Form 10-K for the year ended December 31, 2007), incorporated herein by reference.

(10aa)*	Form of 2009 Stock Appreciation Rights Agreement (filed as Exhibit 10ag to the Company's Annual Report on Form 10-K for the year ended December 31, 2008), incorporated herein by reference.
(10ab)*	Form of 2010 Stock Appreciation Rights Agreement (filed as Exhibit 10ah to the Company's Annual Report on Form 10-K for the year ended December 31, 2009), incorporated herein by reference.
(10ac)*	Form of 2011 Stock Appreciation Rights Agreement (filed as Exhibit 10.3 to the Company's Form 8-K filed on March 3, 2011), incorporated herein by reference.
(10ad)*#	Form of 2016 Stock Appreciation Rights Agreement.
(10ae)*	Materion Corporation Supplemental Retirement Benefit Plan (filed as Exhibit 10.1 to the Company's Form 8-K filed on September 19, 2011), incorporated herein by reference.
(10af)*	Amendment No. 1 to the Supplemental Retirement Benefit Plan (filed as Exhibit 10al to the Company's Annual Report on Form 10-K for the year ended December 31, 2012), incorporated herein by reference.
(10ag)*	Amendment No. 2 to the Supplemental Retirement Benefit Plan (filed as Exhibit 10ah to the Company's Annual Report on Form 10-K for the year ended December 31, 2013), incorporated herein by reference.
(10ah)*	Key Employee Share Option Plan (filed as Exhibit 4.1 to the Registration Statement on Form S-8, Registration No. 333-52141, filed by Brush Wellman Inc. on May 5, 1998), incorporated herein by reference.
(10ai)*	Amendment No. 1 to the Key Employee Share Option Plan (effective May 16, 2005) (filed as Exhibit 4b to Post-Effective Amendment No. 1 to Registration Statement on Form S-8, Registration No. 333-52141), incorporated herein by reference.
(10aj)*	Amendment No. 2 to the Key Employee Share Option Plan dated June 10, 2005 (filed as Exhibit 10aw to the Company's Annual Report on Form 10-K for the year ended December 31, 2006), incorporated herein by reference.
(10ak)*	Amendment No. 3 to the Key Employee Share Option Plan dated July 12, 2011 (filed as Exhibit 10.4 to the Company's Quarterly Report on Form 10-Q for the period ended July 1, 2011), incorporated herein by reference.
(10al)*	Amended and Restated Materion Corporation 2006 Non-employee Director Equity Plan (as Amended and Restated as of May 4, 2011) (filed as Appendix B to the Registrant's Proxy Statement filed on March 25, 2011), incorporated herein by reference.
(10am)*	First Amendment to the 2006 Non-employee Director Equity Plan (as Amended and Restated as of May 4, 2011) (filed as Exhibit 10bb to the Company's Annual Report on Form 10-K for the year ended December 31, 2012), incorporated herein by reference.
(10an)*	Amended and Restated Materion Corporation 2006 Non-employee Director Equity Plan (as Amended and Restated as of May 7, 2014) (filed as Exhibit 4.4 to the Registration Statement on Form S-8 (Registration No. 333-195761), incorporated herein by reference.
(10ao)*	Amended and Restated Executive Deferred Compensation Plan II (filed as Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the period ended March 28, 2008), incorporated herein by reference.
(10ap)*	Amendment No. 1 to the Amended and Restated Executive Deferred Compensation Plan II (filed as Exhibit 10bf to the Company's Annual Report on Form 10-K for the year ended December 31, 2008), incorporated herein by reference.
(10aq)*	Amendment No. 2 to the Amended and Restated Executive Deferred Compensation Plan II (filed as Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q for the period ended July 3, 2009), incorporated herein by reference.
(10ar)*	Amendment No. 3 to the Amended and Restated Executive Deferred Compensation Plan II, dated July 6, 2011 (filed as Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q for the period ended July 1, 2011), incorporated herein by reference.
(10as)*	Materion Corporation Restoration & Deferred Compensation Plan, dated March 4, 2015 (filed as Exhibit 10.1 to the Company's Form 8-K filed on March 10, 2015), incorporated herein by reference.
(10at)*	Trust Agreement between the Company and Fidelity Investments dated September 26, 2006 for certain deferred compensation plans for Non-employee Directors of the Company (filed as Exhibit 99.4 to the Current Report on Form 8-K filed by the Company on September 29, 2006), incorporated herein by reference.
(10au)*	Trust Agreement between the Company and Fidelity Management Trust Company, dated June 25, 2009 relating to the Executive Deferred Compensation Plan II (filed as Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the period ended July 3, 2009), incorporated herein by reference.
(10av)	Trust Agreement between the Company and Fifth Third Bank N.A. dated September 25, 2006 relating to the Key Employee Share Option Plan (filed as Exhibit 99.3 to the Current Report on Form 8-K filed by the Company on September 29, 2006), incorporated herein by reference.
(10aw)	Lease dated as of October 1, 1996, between Brush Wellman Inc. and Toledo-Lucas County Port Authority (filed as Exhibit 10v to the Company's Annual Report on Form 10-K for the year ended December 31, 1996), incorporated herein by reference.

- (10ax) Amended and Restated Inducement Agreement with the Prudential Insurance Company of America dated May 30, 2003 (filed as Exhibit 10 to the Company's Quarterly Report on Form 10-Q for the period ended June 27, 2003), incorporated herein by reference.
- (10ay) Amended and Restated Supply Agreement between RWE Nukem, Inc. and Brush Wellman Inc. for the sale and purchase of beryllium products (filed as Exhibit 10 to the Company's Quarterly Report on Form 10-Q for the period ended September 26, 2003), incorporated herein by reference.
- (10az) Supply Agreement between the Defense Logistics Agency and Brush Wellman Inc. for the sale and purchase of beryllium products (filed as Exhibit 10tt to the Company's Annual Report on Form 10-K for the year ended December 31, 2004), incorporated herein by reference.
- (10ba) Asset Purchase Agreement by and between Williams Advanced Materials Inc. and Techni-Met, Inc. dated December 20, 2007 (filed as Exhibit 10bw to the Company's Annual Report on Form 10-K for the year ended December 31, 2007), incorporated herein by reference.
- (10bb) Consignment Agreement dated October 2, 2009 between Brush Engineered Materials Inc. and Canadian Imperial Bank of Commerce and CIBC World Markets Inc. (filed as Exhibit 10.1 to the Company's Form 8-K on October 8, 2009), incorporated herein by reference.
- (10bc) Amendment No. 1 to the Consignment Agreement dated October 2, 2009 between Brush Engineered Materials Inc. and Canadian Imperial Bank of Commerce and CIBC World Markets Inc. (filed as Exhibit 99.1 to the Company's Form 8-K on March 12, 2010), incorporated herein by reference.
- (10bd) Amendment No. 2 to the Consignment Agreement dated June 11, 2010 between Brush Engineered Materials Inc. and Canadian Imperial Bank of Commerce and CIBC World Markets Inc. (filed as Exhibit 99.1 to the Company's Form 8-K filed on June 14, 2010), incorporated herein by reference.
- (10be) Amendment No. 3 to the Consignment Agreement dated September 30, 2010 between Brush Engineered Materials Inc. and Canadian Imperial Bank of Commerce and CIBC World Markets Inc. (filed as Exhibit 10.1 to the Company's Form 8-K on October 4, 2010), incorporated herein by reference.
- (10bf) Amendment No. 4 to the Consignment Agreement dated November 10, 2010 between Brush Engineered Materials Inc. and Canadian Imperial Bank of Commerce and CIBC World Markets Inc. (filed as Exhibit 99.1 to the Company's Form 8-K on November 12, 2010), incorporated herein by reference.
- (10bg) Amendment No. 5 to the Consignment Agreement dated March 7, 2011 between Brush Engineered Materials Inc. and Canadian Imperial Bank of Commerce and CIBC World Markets Inc. (filed as Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the period ended April 1, 2011), incorporated herein by reference.
- (10bh) Amendment No. 6 to the Consignment Agreement dated September 13, 2011 between Materion Corporation and Canadian Imperial Bank of Commerce and CIBC World Markets Inc. (filed as Exhibit 10.1 to the Company's Form 8-K filed on September 16, 2011), incorporated herein by reference.
- (10bi) Amendment No. 7 to the Consignment Agreement dated August 24, 2012 between Materion Corporation and Canadian Imperial Bank of Commerce and CIBC World Markets Inc. (filed as Exhibit 10.1 to the Company's Form 8-K filed on August 31, 2012), incorporated herein by reference.
- (10bj) Amendment No. 8 to the Consignment Agreement dated October 1, 2013 between Materion Corporation and Canadian Imperial Bank of Commerce and CIBC World Markets Inc. (filed as Exhibit 10.1 to the Company's Form 10-Q for the period ended September 26, 2014), incorporated herein by reference.
- (10bk) Amendment No. 9 to the Consignment Agreement dated July 23, 2014 between Materion Corporation and Canadian Imperial Bank of Commerce and CIBC World Markets Inc. (filed as Exhibit 10.2 to the Company's Form 10-Q for the period ended September 26, 2014), incorporated herein by reference.
- (10bl) Amendment No. 10 to the Consignment Agreement dated September 30, 2014 between Materion Corporation and Canadian Imperial Bank of Commerce and CIBC World Markets Inc. (filed as Exhibit 10.3 to the Company's Form 8-K for the period ended September 26, 2014), incorporated herein by reference.
- (10bm) Letter Agreement, dated March 18, 2014, by and between Materion Corporation and GAMCO Asset Management Inc. (filed as Exhibit 10.1 to the Company's Form 10-Q for the period ended March 28, 2014), incorporated herein by reference.
- (21)# Subsidiaries of the Registrant.
- (23)# Consent of Ernst & Young LLP.
- (24)# Power of Attorney.
- (31.1)# Certification of Chief Executive Officer required by Rule 13a-14(a) or 15d-14(a).
- (31.2)# Certification of Chief Financial Officer required by Rule 13a-14(a) or 15d-14(a).
- (32)# Certifications of Chief Executive Officer and Chief Financial Officer required by 18 U.S.C. Section 1350.
- (95)# Mine Safety Disclosure Pursuant to Section 1503(a) of the Dodd-Frank Wall Street Reform and Consumer Protection Act for the Fiscal Year Ended December 31, 2015.

(101.INS)	XBRL Instance Document.
(101.SCH)	XBRL Taxonomy Extension Schema Document.
(101.CAL)	XBRL Taxonomy Extension Calculation Linkbase Document.
(101.DEF)	XBRL Taxonomy Extension Definition Linkbase Document.
(101.LAB)	XBRL Taxonomy Extension Label Linkbase Document.
(101.PRE)	XBRL Taxonomy Extension Presentation Linkbase Document.
*	Denotes a compensatory plan or arrangement.
#	Filed herewith.

## SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

### MATERION CORPORATION

By: /s/ RICHARD J. HIPPLE  
Richard J. Hipple  
Chairman of the Board, President  
and Chief Executive Officer

By: /s/ JOSEPH P. KELLEY  
Joseph P. Kelley  
Vice President, Finance  
and Chief Financial Officer

February 25, 2016

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

<u>/s/ RICHARD J. HIPPLE</u> Richard J. Hipple	Chairman of the Board, President, Chief Executive Officer and Director (Principal Executive Officer)	February 25, 2016
<u>/s/ JOSEPH P. KELLEY</u> Joseph P. Kelley	Vice President, Finance and Chief Financial Officer (Principal Financial and Accounting Officer)	February 25, 2016
<u>/s/ EDWARD F. CRAWFORD*</u> Edward F. Crawford*	Director	February 25, 2016
<u>/s/ JOSEPH P. KEITHLEY*</u> Joseph P. Keithley*	Director	February 25, 2016
<u>/s/ VINOD M. KHILNANI*</u> Vinod M. Khilnani*	Director	February 25, 2016
<u>/s/ WILLIAM B. LAWRENCE*</u> William B. Lawrence*	Director	February 25, 2016
<u>/s/ N. MOHAN REDDY*</u> N. Mohan Reddy*	Director	February 25, 2016
<u>/s/ CRAIG S. SHULAR*</u> Craig S. Shular*	Director	February 25, 2016
<u>/s/ DARLENE J. S. SOLOMON*</u> Darlene J. S. Solomon*	Director	February 25, 2016
<u>/s/ ROBERT B. TOTH*</u> Robert B. Toth*	Director	February 25, 2016
<u>/s/ GEOFFREY WILD*</u> Geoffrey Wild*	Director	February 25, 2016

\* The undersigned, by signing his/her name hereto, does sign and execute this report on behalf of each of the above-named officers and directors of Materion Corporation, pursuant to Powers of Attorney executed by each such officer and director filed with the Securities and Exchange Commission.

February 25, 2016

By: /s/ JOSEPH P. KELLEY  
Joseph P. Kelley  
Attorney-in-Fact



**Materion Corporation and Subsidiaries**  
**Schedule II—Valuation and Qualifying Accounts**  
**Years Ended December 31, 2015 , 2014 , and 2013**

Column A	Column B	Column C		Column D	Column E	
(Thousands)	Balance at Beginning of Period	ADDITIONS		Deduction-Describe	Balance at End of Period	
		Charged to Costs and Expenses	Charged to Other Accounts-Describe			
Year ended December 31, 2015						
Deducted from asset accounts:						
Allowance for doubtful accounts receivable	\$ 1,578	\$ 692	\$ —	\$ 1,073	(A) \$	1,197
Inventory reserves and obsolescence	8,193	3,842	—	4,166	(B)	7,869
Year ended December 31, 2014						
Deducted from asset accounts:						
Allowance for doubtful accounts receivable	\$ 1,421	\$ 664	\$ —	\$ 507	(A) \$	1,578
Inventory reserves and obsolescence	6,333	6,067	—	4,207	(B)	8,193
Year ended December 31, 2013						
Deducted from asset accounts:						
Allowance for doubtful accounts receivable	1,403	127	(12)	97	(A)	1,421
Inventory reserves and obsolescence	5,872	5,250	—	4,789	(B)	6,333

Note (A) - Bad debts written-off, net of recoveries

Note (B) - Inventory write-off

[APPROVED February 3, 2016/ CASH-SETTLED; DOUBLE-TRIGGER]

## MATERION CORPORATION

### Restricted Stock Units Agreement (Cash-Settled)

WHEREAS, \_\_\_\_\_, (the "Grantee") is an employee of Materion Corporation, an Ohio corporation (the "Corporation") or a Subsidiary; and

WHEREAS, the execution of an agreement in the form hereof (this "Agreement") has been authorized by a resolution of the Compensation Committee (the "Committee") of the Board of Directors of the Corporation that was duly adopted on \_\_\_\_\_, 2016;

NOW, THEREFORE, pursuant to the Materion Corporation 2006 Stock Incentive Plan (As Amended and Restated as of May 7, 2014) (the "Plan"), the Corporation hereby confirms to the Grantee the grant, effective on \_\_\_\_\_, 2016 (the "Date of Grant"), of \_\_\_\_\_ Restricted Stock Units (as defined in the Plan) ("RSUs"), subject to the terms and conditions of the Plan and the following additional terms, conditions, limitations and restrictions:

#### Article I

#### DEFINITIONS

All terms used herein with initial capital letters that are defined in the Plan shall have the meanings assigned to them in the Plan when used herein with initial capital letters.

#### ARTICLE II

#### CERTAIN TERMS OF RESTRICTED STOCK UNITS

1. RSUs Not Transferable. The RSUs covered by the Agreement shall not be transferable other than by will or pursuant to the laws of descent and distribution prior to payment.

2. Vesting and Payment of RSUs.

(a) General. Subject to the provisions of Sections 2(b), 2(c) and 2(d) of this Article II, all of the RSUs covered by this Agreement shall become nonforfeitable if the Grantee shall have remained in the continuous employ of the Corporation or a Subsidiary for three years from the Date of Grant and shall be payable in cash to the Grantee on such date.

(b) Death or Disability. Notwithstanding the provisions of Section 2(a) of this Article II, all of the RSUs covered by this Agreement shall immediately become nonforfeitable and shall be immediately payable if the Grantee dies or becomes permanently disabled (as hereinafter defined) while in the employ of the Corporation or a Subsidiary during the three-year period from the Date of Grant. The Grantee shall be considered to have become permanently disabled if the Grantee has suffered a permanent disability within the meaning of the long-term disability plan in effect for, or applicable to, the Grantee and is "disabled" within the meaning of Section 409A(a)(2)(C) of the Code.

(c) Retirement.

(i) If the Grantee should Retire (as hereinafter defined) after the Date of Grant, the RSUs covered by this Agreement shall be forfeited, unless the Committee determines that, notwithstanding the requirement of continuous employment contained in Section 2(a) of this Article II, such RSUs will continue to vest and become payable three years from the Date of Grant,

provided that if the Committee makes such a determination, the RSUs will also be paid on any earlier date when payment would otherwise have been made under Section 2 of this Article II if the Grantee had continued employment through such date.

(ii) "Retire" shall mean the Grantee's retirement from the Corporation or a Subsidiary at (A) age 65 or older or (B) at age 55 or older with 10 or more years of continuous employment with the Corporation or a Subsidiary.

(d) Change in Control.

(i) Notwithstanding Section 2(a) of this Article II above, the RSUs granted hereby shall immediately become nonforfeitable and payable if at any time during the employment of the Grantee and prior to the end of the three-year vesting period:

(A) a Change in Control shall occur after the Date of Grant; and

(B) within two years following the Change in Control the Grantee's employment with the Corporation or a Subsidiary is terminated by the Grantee as a Termination for Good Cause (as defined in Section 2(f) of his Article II) or the Grantee is terminated by the Corporation other than as a Termination for Cause (as defined in Section 2(e) of this Article II). If the Change in Control constitutes a "change in control" for purposes of Section 409A of the Code and if the Grantee incurs a "separation from service" for purposes of Section 409A of the Code within two years following such Change in Control, payment for any RSUs which are no longer subject to a substantial risk of forfeiture will be made upon the Grantee's separation from service, provided however, that if at such time the Grantee is a "specified employee" as determined pursuant to the identification methodology adopted by the Corporation in compliance with Section 409A of the Code, the date of payment for the RSUs shall be the first business day of the seventh month after the date of the Grantee's separation from service (or if earlier the Grantee's death). If payment is not made pursuant to the preceding sentence because the Change in Control does not constitute a "change in control" for purposes of Section 409A of the Code, then payment shall be made at the earliest date that payment would have been made under Section 2 of Article II if no Change in Control had occurred, assuming continued employment through such date.

(ii) Notwithstanding anything in this Section 2(d) to the contrary, in connection with a Business Combination the result of which is that the Outstanding Company Voting Securities are exchanged for or become exchangeable for securities of another entity, cash or a combination thereof, if the entity resulting from such Business Combination does not assume the RSUs evidenced hereby and the Corporation's obligations hereunder, or replace the RSUs evidenced hereby with a substantially equivalent security of the entity resulting from such Business Combination, then the RSUs evidenced hereby shall become nonforfeitable as of immediately prior to such Business Combination. Payment for any RSUs which are no longer subject to a substantial risk of forfeiture as determined under the original terms of this award will be upon the Change in Control; provided, however, if the Change in Control does not constitute a "change in control" for purposes of Section 409A(a)(2)(A)(v) of the Code, then payment for the RSUs will be made upon the date that payment otherwise would have been made under Section 2 of this Article II if no Change in Control had occurred, assuming continued employment through such date.

(e) Retirement.

(i) If the Grantee should Retire (as hereinafter defined) after the Date of Grant, notwithstanding the requirement of

continuous employment contained in Section 2(a) of this Article II, the RSUs covered by this Agreement shall be forfeited unless the Committee determines that such RSUs will continue to vest and become nonforfeitable three years from the Date of Grant.

(ii) "Retire" shall mean the Grantee's retirement from the Corporation or a Subsidiary at (a) age 65 or older or (B) at age 55 or older with 10 or more years of continuous employment with the Corporation or Subsidiary.

(f) "Termination for Cause" means a termination of Grantee's employment by the Corporation for "Cause" (as defined in Section 7(f) of this Article II).

(g) "Termination for Good Cause" shall mean the Grantee's termination of the Grantee's employment with the Corporation or a Subsidiary as a result of the occurrence of any of the following:

(i) a change in the Grantee's principal location of employment that is greater than 50 miles from its location as of the date hereof without the Grantee's consent; provided, however, that the Grantee hereby acknowledges that the Grantee may be required to engage in travel in connection with the performance of the Grantee's duties hereunder and that such travel shall not constitute a change in the Grantee's principal location of employment for purposes hereof;

(ii) a material diminution in the Grantee's base compensation;

(iii) a change in the Grantee's position with the Corporation without the Grantee's consent such that there is a material diminution in the Grantee's authority, duties or responsibilities; or

(iv) any other action or inaction that constitutes a material breach by the Corporation of the agreement under which the Grantee provides services.

Notwithstanding the foregoing, the Grantee's termination of the Grantee's employment with the Corporation as a result of the occurrence of any of the foregoing shall not constitute a "Termination for Good Cause" unless (A) the Grantee gives the Corporation written notice of such occurrence within 90 days of such occurrence and such occurrence is not cured by the Corporation within 30 days of the date on which such written notice is received by the Corporation and (B) the Grantee actually terminates his or her employment with the Corporation prior to the 365th day following such occurrence.

3. Form and Time of Payment of RSUs. Except as otherwise provided for in Section 2 of Article III, payment for the RSUs shall be made in form of cash at the time the RSUs vest and become nonforfeitable or otherwise become payable in accordance with Section 2 of this Article II. The cash payment shall be equal to (a) Market Value per Share on the date the RSUs vest and become nonforfeitable times (b) the number of RSUs covered by this Agreement plus any dividend equivalents accrued on the RSUs since the Date of Grant (as provided below in Section 5 of this Article II). Payments will be made in local currency, less any applicable federal, state, local or foreign withholding taxes. For the avoidance of doubt, in no event shall the Grantee be entitled to receive payment in any form other than cash, and under no circumstances shall the Grantee be entitled to receive Common Shares or any other security hereunder.

4. Forfeiture of RSUs. The RSUs shall be forfeited, except as otherwise provided in Section 2(b), 2(c) or 2(d) of this Article II above, if the Grantee ceases to be employed by the Corporation or a Subsidiary prior to three years from the Date of Grant.

5. Dividend Equivalents. From and after the Date of Grant and until the earlier of (a) the time when the RSUs vest and become nonforfeitable and payable in accordance with Section 2 of this Article II or (b) the time when the Grantee's right to receive cash payment of the RSUs is forfeited in accordance with Section 4 of this Article II, on the date that the Corporation pays a cash dividend (if any) to

holders of Common Shares generally, the Grantee shall be entitled to a deferred cash payment equal to the value of the product of (i) the dollar amount of the cash dividend paid per Common Share on such date and (ii) the total number of RSUs covered by this Agreement. Such dividend equivalents (if any) shall be paid in cash, and shall be subject to such other applicable terms and conditions (including payment or forfeitability) as the RSUs to which the dividend equivalents were credited.

6. Effect of Detrimental Activity. Notwithstanding anything herein to the contrary, if the Grantee, either during employment by the Corporation or a Subsidiary or within one year after termination of such employment, shall engage in any Detrimental Activity, (as hereinafter defined) and the Board shall so find, the Grantee shall:

(a) Forfeit all RSUs held by the Grantee.

(b) With respect to any RSUs that have become nonforfeitable and been paid out pursuant to this Agreement, pay to the Corporation in cash an amount equal to the payment Grantee received when the RSUs became nonforfeitable.

(c) To the extent that the amount referred above to in Section 6(b) of Article II are not paid to the Corporation, the Corporation may set off the amounts so payable to it against any amounts that may be owing from time to time by the Corporation or a Subsidiary to the Grantee, whether as wages, deferred compensation or vacation pay or in the form of any other benefit or for any other reason, except that no setoff shall be permitted against any amount that constitutes "deferred compensation" within the meaning of Section 409A of the Code.

7. For purposes of this Agreement, the term "Detrimental Activity" shall include:

(a) (I) Engaging in any activity in violation of the Section entitled "Competitive Activity; Confidentiality; Nonsolicitation" in the Severance Agreement between the Corporation and the Grantee, if such agreement is in effect at the date hereof, or in violation of any corresponding provision in any other agreement between the Corporation and the Grantee in effect on the date hereof providing for the payment of severance compensation; or

(ii) If no such severance agreement is in effect as of the date hereof or if a severance agreement does not contain a Section corresponding to "Competitive Activity; Confidentiality; Nonsolicitation":

(A) Competitive Activity During Employment. Competing with the Corporation anywhere within the United States during the term of the Grantee's employment, including, without limitation:

(I) entering into or engaging in any business which competes with the business of the Corporation;

(II) soliciting customers, business, patronage or orders for, or selling, any products or services in competition with, or for any business that competes with, the business of the Corporation;

(III) diverting, enticing or otherwise taking away any customers, business, patronage or orders of the Corporation or attempting to do so; or

(IV) promoting or assisting, financially or otherwise, any person, firm, association, partnership, corporation or other entity engaged in any business which competes with the business of the Corporation.

(B) Following Termination. For a period of one year following the Grantee's termination date:

(I) entering into or engaging in any business which competes with the Corporation's business within the Restricted Territory (as hereinafter defined);

(II) soliciting customers, business, patronage or orders for, or selling, any products or services in competition with, or for any business, wherever located, that competes with, the Corporation's business within the Restricted Territory;

(III) diverting, enticing or otherwise taking away any customers, business, patronage or orders of the Corporation within the Restricted Territory, or attempting to do so; or

(IV) promoting or assisting, financially or otherwise, any person, firm, association, partnership, corporation or other entity engaged in any business which competes with the Corporation's business within the Restricted Territory.

For the purposes of Sections 7(a)(ii)(A) and (B) above, inclusive, but without limitation thereof, the Grantee will be in violation thereof if the Grantee engages in any or all of the activities set forth therein directly as an individual on the Grantee's own account, or indirectly as a partner, joint venturer, employee, agent, salesperson, consultant, officer and/or director of any firm, association, partnership, corporation or other entity, or as a stockholder of any corporation in which the Grantee or the Grantee's spouse, child or parent owns, directly or indirectly, individually or in the aggregate, more than five percent (5%) of the outstanding stock.

(C) "The Corporation." For the purposes of this Section 7(a)(ii) of Article II, the "Corporation" shall include any and all direct and indirect subsidiaries, parents, and affiliated, or related companies of the Corporation for which the Grantee worked or had responsibility at the time of termination of the Grantee's employment and at any time during the two year period prior to such termination.

(D) "The Corporation's Business." For the purposes of this Section 7 of Article II inclusive, the Corporation's business is defined to be the integrated production of high performance advanced engineered materials used in a variety of electrical, electronic, thermal and structural applications serving the consumer electronics, industrial components and commercial aerospace, defense and science, medical, energy, automotive electronics, telecommunications infrastructure and appliance markets, as further described in any and all manufacturing, marketing and sales manuals and materials of the Corporation as the same may be altered, amended, supplemented or otherwise changed from time to time, or of any other products or services substantially similar to or readily substitutable for any such described products and services.

(E) "Restricted Territory." For the purposes of Section 7(a)(ii)(B) of Article II, the Restricted Territory shall be defined as and limited to:

(I) the geographic area(s) within a one hundred mile radius of any and all of the Corporation's location(s) in, to, or for which the Grantee worked, to which the Grantee was assigned or had any responsibility (either direct or supervisory) at the time of termination of the Grantee's employment and at any time during the two-year period prior to such termination; and

(II) all of the specific customer accounts, whether within or outside of the geographic area described in (I) above, with which the Grantee had any contact or for which the Grantee had any responsibility (either direct or supervisory) at the time of termination of the Grantee's employment and at any time during the two-year period prior to such termination.

(F) Extension. If it shall be judicially determined that the Grantee has violated any of the Grantee's obligations under

Section 7(a)(ii)(B) of Article II, then the period applicable to each obligation that the Grantee shall have been determined to have violated shall automatically be extended by a period of time equal in length to the period during which such violation(s) occurred.

(b) Non-Solicitation. Except as otherwise provided in Section 7(a)(i) of Article II, Detrimental Activity shall also include directly or indirectly at any time soliciting or inducing or attempting to solicit or induce any employee(s), sales representative(s), agent(s) or consultant(s) of the Corporation and/or of its parents, or its other subsidiaries or affiliated or related companies to terminate their employment, representation or other association with the Corporation and/or its parent or its other subsidiary or affiliated or related companies.

(c) Further Covenants. Except as otherwise provided in Section 7(a)(i) of Article II, Detrimental Activity shall also include:

(i) directly or indirectly, at any time during or after the Grantee's employment with the Corporation, disclosing, furnishing, disseminating, making available or, except in the course of performing the Grantee's duties of employment, using any trade secrets or confidential business and technical information of the Corporation or its customers or vendors, including without limitation as to when or how the Grantee may have acquired such information. Such confidential information shall include, without limitation, the Corporation's unique selling, manufacturing and servicing methods and business techniques, training, service and business manuals, promotional materials, training courses and other training and instructional materials, vendor and product information, customer and prospective customer lists, other customer and prospective customer information and other business information. The Grantee specifically acknowledges that all such confidential information, whether reduced to writing, maintained on any form of electronic media, or maintained in the Grantee's mind or memory and whether compiled by the Corporation, and/or the Grantee, derives independent economic value from not being readily known to or ascertainable by proper means by others who can obtain economic value from its disclosure or use, that reasonable efforts have been made by the Corporation to maintain the secrecy of such information, that such information is the sole property of the Corporation and that any retention and use of such information by the Grantee during the Grantee's employment with the Corporation (except in the course of performing the Grantee's duties and obligations to the Corporation) or after the termination of the Grantee's employment shall constitute a misappropriation of the Corporation's trade secrets.

(ii) Upon termination of the Grantee's employment with the Corporation, for any reason, the Grantee's failure to return to the Corporation, in good condition, all property of the Corporation, including without limitation, the originals and all copies of any materials which contain, reflect, summarize, describe, analyze or refer or relate to any items of information listed in Section 7(c)(i) of Article II of this Agreement.

(d) Discoveries and Inventions. Except as otherwise provided in Section 7(a)(i) of Article II, Detrimental Activity shall also include the failure or refusal of the Grantee to assign to the Corporation, its successors, assigns or nominees, all of the Grantee's rights to any discoveries, inventions and improvements, whether patentable or not, made, conceived or suggested, either solely or jointly with others, by the Grantee while in the Corporation's employ, whether in the course of the Grantee's employment with the use of the Corporation's time, material or facilities or that is in any way within or related to the existing or contemplated scope of the Corporation's business. Any discovery, invention or improvement relating to any subject matter with which the Corporation was concerned during the Grantee's employment and made, conceived or suggested by the Grantee, either solely or jointly with others, within one year following termination of the Grantee's employment under this Agreement or any successor agreements shall be irrebuttably presumed to have

been so made, conceived or suggested in the course of such employment with the use of the Corporation's time, materials or facilities. Upon request by the Corporation with respect to any such discoveries, inventions or improvements, the Grantee will execute and deliver to the Corporation, at any time during or after the Grantee's employment, all appropriate documents for use in applying for, obtaining and maintaining such domestic and foreign patents as the Corporation may desire, and all proper assignments therefor, when so requested, at the expense of the Corporation, but without further or additional consideration.

(e) Work Made For Hire. Except as otherwise provided in Section 7(a)(i) of Article II, Detrimental Activity shall also include violation of the Corporation's rights in any or all work papers, reports, documentation, drawings, photographs, negatives, tapes and masters therefore, prototypes and other materials (hereinafter, "items"), including without limitation, any and all such items generated and maintained on any form of electronic media, generated by Grantee during the Grantee's employment with the Corporation. The Grantee acknowledges that, to the extent permitted by law, all such items shall be considered a "work made for hire" and that ownership of any and all copyrights in any and all such items shall belong to the Corporation. The item will recognize the Corporation as the copyright owner, will contain all proper copyright notices, e.g., "(creation date) [Corporation's Name], All Rights Reserved," and will be in condition to be registered or otherwise placed in compliance with registration or other statutory requirements throughout the world.

(f) Termination for Cause. Except as otherwise provided in Section 7(a)(i) of this Article II, Detrimental Activity shall also include activity that results in termination for Cause. For the purposes of this Section, "Cause" shall mean that, the Grantee shall have:

(i) been convicted of a criminal violation involving fraud, embezzlement, theft or violation of federal antitrust statutes or federal securities laws in connection with his duties or in the course of his employment with the Corporation or any affiliate of the Corporation;

(ii) committed intentional wrongful damage to property of the Corporation or any affiliate of the Corporation; or

(iii) committed intentional wrongful disclosure of secret processes or confidential information of the Corporation or any affiliate of the Corporation;

and any such act shall have been demonstrably and materially harmful to the Corporation.

(g) Other Injurious Conduct. Detrimental Activity shall also include any action contributing to a restatement of the Corporation's financials if this award of RSUs to the Grantee is favorably affected by such restatement as provided under Section 10D of the Exchange Act and any applicable rules or regulations promulgated by the Securities and Exchange Commission or any national securities exchange or national securities association on which the Common Shares may be traded, and any other conduct or act determined to be injurious, detrimental or prejudicial to any significant interest of the Corporation or any subsidiary unless the Grantee acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the Corporation.

(h) Reasonableness. The Grantee acknowledges that the Grantee's obligations under this Section 7 of Article II are reasonable in the context of the nature of the Corporation's business and the competitive injuries likely to be sustained by the Corporation if the Grantee were to violate such obligations. The Grantee further acknowledges that this Agreement is made in consideration of, and is adequately supported by the agreement of the Corporation to perform its obligations under this Agreement and by other consideration, which the Grantee acknowledges constitutes good, valuable and sufficient consideration.



## GENERAL PROVISIONS

1. Compliance with Law. The Corporation shall make reasonable efforts to comply with all applicable federal and state securities laws.
2. Dilution and Other Adjustments. The Committee shall make such adjustments in the RSUs covered by this Agreement as such Committee in its sole discretion, exercised in good faith, shall determine is equitably required to prevent dilution or enlargement of the rights of the Grantee that otherwise would result from (a) any stock dividend, stock split, combination of shares, recapitalization or other change in the capital structure of the Corporation, or (b) any merger, consolidation, spin-off, reorganization, partial or complete liquidation or other distribution of assets, or issuance of warrants or other rights to purchase securities, or (c) any other corporate transaction or event having an effect similar to any of the foregoing. In the event of any such transaction or event, the Committee shall provide in substitution for this award of RSUs such alternative consideration as it shall in good faith determine to be equitable under the circumstances and shall require in connection therewith the surrender of this award of RSUs so replaced.
3. Continuous Employment. For purposes of this Agreement, the continuous employment of the Grantee with the Corporation or a Subsidiary shall not be deemed to have been interrupted, and the Grantee shall not be deemed to have ceased to be an employee of the Corporation or a Subsidiary, by reason of the transfer of his employment among the Corporation and its Subsidiaries or a leave of absence approved by the Board.
4. No Employment Contract; Right to Terminate Employment. The grant of the RSUs to the Grantee is a voluntary, discretionary award being made on a one-time basis and it does not constitute a commitment to make any future awards. The grant of the RSUs and any payments made hereunder will not be considered salary or other compensation for purposes of any severance pay or similar allowance, except as otherwise required by law. Nothing in this Agreement will give the Grantee any right to continue employment with the Corporation or any Subsidiary, as the case may be, or interfere in any way with the right of the Corporation or a Subsidiary to terminate the employment of the Grantee at any time.
5. Relation to Other Benefits. Any economic or other benefit to the Grantee under this Agreement or the Plan shall not be taken into account in determining any benefits to which the Grantee may be entitled under any profit-sharing, retirement or other benefit or compensation plan maintained by the Corporation or a Subsidiary and shall not affect the amount of any life insurance coverage available to any beneficiary under any life insurance plan covering employees of the Corporation or a Subsidiary.
6. Information. Information about the Grantee and the Grantee's participation in the Plan may be collected, recorded and held, used and disclosed for any purpose related to the administration of the Plan. The Grantee understands that such processing of this information may need to be carried out by the Corporation and its Subsidiaries and by third party administrators whether such persons are located within the Grantee's country or elsewhere, including the United States of America. The Grantee consents to the processing of information relating to the Grantee and the Grantee's participation in the Plan in any one or more of the ways referred to above.
7. Amendments. Any amendment to the Plan shall be deemed to be an amendment to this Agreement to the extent that the amendment is applicable hereto; provided, however, that no amendment shall adversely affect the rights of the Grantee under this Agreement without the Grantee's consent. Notwithstanding the foregoing, the limitation requiring the consent of a Grantee to certain amendments shall not apply to any amendment that is deemed necessary by the Corporation to ensure compliance with Section 409A of the Code.

8. Severability. In the event that one or more of the provisions of this Agreement shall be invalidated for any reason by a court of competent jurisdiction, any provision so invalidated shall be deemed to be separable from the other provisions hereof, and the remaining provisions hereof shall continue to be valid and fully enforceable.

9. Governing Law. This agreement is made under, and shall be construed in accordance with, the internal substantive laws of the State of Ohio.

10. Compliance with Section 409A of the Code. To the extent applicable, it is intended that this Agreement and the Plan comply with the provisions of Section 409A of the Code, so that the income inclusion provisions of Section 409A(a)(1) of the Code do not apply to the Grantee. This Agreement and the Plan shall be administered in a manner consistent with this intent. Reference to Section 409A of the Code is to Section 409A of the Internal Revenue Code of 1986, as amended, and will also include any regulations or any other formal guidance promulgated with respect to such Section by the U.S. Department of the Treasury or the Internal Revenue Service.

11. Relation to Severance Agreement. Section 2(d) of Article II hereof shall supersede the provisions of any Severance Agreement between the Grantee and the Corporation, in effect at the Date of Grant, providing for earlier vesting of the RSUs granted hereby in the event of a Change in Control.

The undersigned Grantee hereby accepts the award granted pursuant to this Agreement on the terms and conditions set forth herein.

Dated: \_\_\_\_

Grantee

Executed in the name of and on behalf of the Corporation at Mayfield Heights, Ohio as of this \_\_\_\_ day of \_\_\_\_\_, 2016.

MATERION CORPORATION

By \_\_\_\_

Vice President, Treasurer & Secretary

Michael C. Hasychak

[Approved February 3, 2016 / 2016 Stock-Settled SARs – Double Trigger]

## MATERION CORPORATION

### Appreciation Rights Agreement

WHEREAS, \_\_\_\_\_ (the “Grantee”) is an employee of Materion Corporation (the “Corporation”) or a Subsidiary.

WHEREAS, the execution of an agreement in the form hereof has been authorized by a resolution of the Compensation Committee (the “Committee”) of the Board of Directors (the “Board”) of the Corporation that was duly adopted on \_\_\_\_\_, 2016.

NOW, THEREFORE, the Corporation hereby confirms to the Grantee the grant, effective \_\_\_\_\_, 2016 (the “Date of Grant”), pursuant to the Materion Corporation 2006 Stock Incentive Plan (As Amended and Restated as of May 7, 2014) (the “Plan”), of \_\_\_\_\_ Free-standing Appreciation Rights (“SARs”), subject to the terms and conditions of the Plan and the terms and conditions described below.

#### 1. Definitions

As used in this Agreement:

- (A) “Base Price” means \$\_\_\_\_\_ which was the Market Value per Share on the Date of Grant.
- (B) “Detrimental Activity” shall have the meaning set forth in Section 7 of this Agreement.
- (C) “Spread” means the excess of the Market Value per Share on the date when a SAR is exercised over the Base Price.
- (D) Capitalized terms without definition shall have the meanings assigned to them in the Plan.

#### 2. Grant of SARs

The Corporation hereby grants to the Grantee the number of SARs set forth above. The SARs are a right to receive Common Shares in an amount equal to 100% of the Spread at the time of exercise.

#### 3. Vesting of SARs

(A) The SARs granted hereby shall become exercisable after the Grantee shall have remained in the continuous employ of the Corporation or any Subsidiary for three years from the Date of Grant, except such continuous employ shall not be required if the Grantee ceases to be an employee of the Corporation or any Subsidiary as described in Section 5(C) of this Agreement.

(B) Notwithstanding Section 3(A) above, the SARs granted hereby shall become immediately exercisable in full if (i) the Grantee should die while in the employ of the Corporation or any Subsidiary, or (ii) the Grantee should become permanently disabled while in the employ of the Corporation or any Subsidiary.

(C) (1) Notwithstanding Section 3(A) above, the SARs granted hereby shall become immediately exercisable in full if at any time during the employment of the Grantee and prior to the termination of the SARs:

(a) a Change in Control shall occur after the Date of Grant; and

(b) within two years following the Change in Control, the Grantee’s employment with the Corporation or a Subsidiary is terminated by the Grantee as a Termination for Good Cause (as defined in Section 3(E) below) or the Grantee is terminated by the Corporation other than as a Termination for Cause (as defined in Section 3(D) below).

(ii) Notwithstanding anything in this Section 3(C) to the contrary, in connection with a Business Combination, the result of which is that the Outstanding Company Voting Securities are exchanged for or become exchangeable for securities of another entity, cash or a combination thereof, if the entity resulting from such Business Combination does not assume the SARs evidenced hereby and the Corporation’s obligations hereunder, or replace the SARs evidenced hereby with a substantially equivalent security of the entity resulting from such Business Combination, then the SARs evidenced hereby shall become immediately exercisable in full as of immediately prior to such Business Combination.

(D) “Termination for Cause” means a termination of Grantee’s employment by the Corporation for “Cause” (as defined in Section 7(F) of this Agreement).

(E) “Termination for Good Cause” shall mean the Grantee’s termination of the Grantee’s employment with the Corporation or a Subsidiary as a result of the occurrence of any of the following:

(i) a change in the Grantee’s principal location of employment that is greater than 50 miles from its location as of the date hereof without the Grantee’s consent; provided, however, that the Grantee hereby acknowledges that the Grantee may be required to engage in travel in connection with the performance of the Grantee’s duties hereunder and that such travel shall not constitute a

change in the Grantee's principal location of employment for purposes hereof;

(ii) a material diminution in the Grantee's base compensation;

(iii) a change in the Grantee's position with the Corporation without the Grantee's consent such that there is a material diminution in the Grantee's authority, duties or responsibilities; or

(iv) any other action or inaction that constitutes a material breach by the Corporation of the agreement under which the Grantee provides services.

Notwithstanding the foregoing, the Grantee's termination of the Grantee's employment with the Corporation as a result of the occurrence of any of the foregoing shall not constitute a "Termination for Good Cause" unless (a) the Grantee gives the Corporation written notice of such occurrence within 90 days of such occurrence and such occurrence is not cured by the Corporation within 30 days of the date on which such written notice is received by the Corporation and (b) the Grantee actually terminates his or her employment with the Corporation prior to the 365th day following such occurrence.

#### 4. Exercise of SARs.

(A) To the extent exercisable as provided in Section 3 of this agreement, SARs may be exercised in whole or in part by giving notice to the Corporation specifying the number of SARs to be exercised.

(B) The Corporation will issue to the Grantee the number of Common Shares that equals the Market Value per Share divided into the Spread on the date of exercise rounded down to the nearest whole Common Share.

#### 5. Termination of SARs.

The SARs granted hereby shall terminate upon the earliest to occur of the following:

(A) 190 days after the Grantee ceases to be an employee of the Corporation or a Subsidiary, unless he ceases to be such employee by reason of death or in a manner described in clause (B), (C) or (F) below;

(B) One year after the Grantee ceases to be an employee of the Corporation or a Subsidiary if the Grantee is disabled within the meaning of Section 105(d)(4) of the Internal Revenue Code;

(C) Seven years from the Date of Grant if the Committee, at its discretion, allows continued vesting of unvested SARs following termination of employment due to retirement when the Grantee is (i) at least age 65 or (ii) at least age 55 and has completed at least 10 years of continuous employment with the Corporation or a Subsidiary;

(D) One year after the death of the Grantee, if the Grantee dies while an employee of the Corporation or a subsidiary or within the period specified in (A) or (B) above which is applicable to the Grantee;

(E) Seven years from the Date of Grant; and

(F) Immediately if the Grantee engages in any Detrimental Activity (as hereinafter defined).

#### 6. Effect of Detrimental Activity.

If the Grantee, either during employment by the Corporation or a Subsidiary or within one year after termination of such employment, shall engage in any Detrimental Activity, and the Board shall so find:

(A) All SARs held by the Grantee, whether or not exercisable, shall be forfeited to the Corporation;

(B) The Grantee shall return to the Corporation all Common Shares that the Grantee has not disposed of that were acquired pursuant to this Agreement; and

(C) With respect to any Common Shares that the Grantee received upon exercise of the SARs that have been disposed of, pay to the Corporation in cash the amount equal to the Spread applicable to such Common Shares on the date of exercise of such SARs.

To the extent that such amounts are not paid to the Corporation, the Corporation may, to the extent permitted by law, set off the amounts so payable to it against any amounts that may be owing from time to time by the Corporation or a Subsidiary to the Grantee, whether as wages, deferred compensation or vacation pay or in the form of any other benefit or for any other reason, except that no set-off shall be permitted against any amount that constitutes "deferred compensation" within the meaning of Section 409A of the Code.

#### 7. Definition of Detrimental Activity.

For purposes of this Agreement, the term "Detrimental Activity" shall include:

(A) (1) Engaging in any activity in violation of the Section entitled "Competitive Activity; Confidentiality; Nonsolicitation" in

the Severance Agreement between the Corporation and the Grantee, if such agreement is in effect on the date hereof, or in violation of any corresponding provision in any other agreement between the Corporation and the Grantee in effect on the date hereof providing for the payment of severance compensation; or

(v) If no such severance agreement is in effect or if a severance agreement does not contain a section corresponding to "Competitive Activity; Confidentiality; Nonsolicitation" as of the date hereof:

(a) Competitive Activity During Employment. Competing with the Corporation anywhere within the United States during the term of the Grantee's employment, including, without limitation:

- (1) entering into or engaging in any business which competes with the business of the Corporation;
- (2) soliciting customers, business, patronage or orders for, or selling, any products or services in competition with, or for any business that competes with, the business of the Corporation;
- (3) diverting, enticing or otherwise taking away any customers, business, patronage or orders of the Corporation or attempting to do so; or
- (4) promoting or assisting, financially or otherwise, any person, firm, association, partnership, corporation or other entity engaged in any business which competes with the business of the Corporation.

(b) Following Termination. For a period of one year following the Grantee's termination date:

- (1) entering into or engaging in any business which competes with the Corporation's business within the Restricted Territory (as hereinafter defined);
- (2) soliciting customers, business, patronage or orders for, or selling, any products or services in competition with, or for any business, wherever located, that competes with, the Corporation's business within the Restricted Territory;
- (3) diverting, enticing or otherwise taking away any customers, business, patronage or orders of the Corporation within the Restricted Territory, or attempting to do so; or
- (4) promoting or assisting, financially or otherwise, any person, firm, association, partnership, corporation or other entity engaged in any business which competes with the Corporation's business within the Restricted Territory.

For the purposes of Sections 7(A)(ii)(a) and (b) above, inclusive, but without limitation thereof, the Grantee will be in violation thereof if the Grantee engages in any or all of the activities set forth therein directly as an individual on the Grantee's own account, or indirectly as a partner, joint venturer, employee, agent, salesperson, consultant, officer and/or director of any firm, association, partnership, corporation or other entity, or as a stockholder of any corporation in which the Grantee or the Grantee's spouse, child or parent owns, directly or indirectly, individually or in the aggregate, more than five percent (5%) of the outstanding stock.

(c) "The Corporation." For the purposes of this Section 7(A)(ii), the "Corporation" shall include any and all direct and indirect subsidiaries, parents, and affiliated, or related companies of the Corporation for which the Grantee worked or had responsibility at the time of termination of the Grantee's employment and at any time during the two-year period prior to such termination.

(d) "The Corporation's Business." For the purposes of this Section 7 inclusive, the Corporation's business is defined to be the integrated production of high performance advanced engineered materials used in a variety of electrical, electronic, thermal and structural applications serving the consumer electronics, industrial components and commercial aerospace, defense and science, medical, energy, automotive electronics, telecommunications infrastructure and appliance markets, as further described in any and all manufacturing, marketing and sales manuals and materials of the Corporation as the same may be altered, amended, supplemented or otherwise changed from time to time, or of any other products or services substantially similar to or readily substitutable for any such described products and services.

(e) "Restricted Territory." For the purposes of Section 7(A)(ii)(b), the Restricted Territory shall be defined as and limited to:

- (1) the geographic area(s) within a one hundred mile radius of any and all Corporation location(s) in, to, or for which the Grantee worked, to which the Grantee was assigned or had any responsibility (either direct or supervisory) at the time of termination of the Grantee's employment and at any time during the two-year period prior to such termination; and
- (2) all of the specific customer accounts, whether within or outside of the geographic area described in (1) above, with which the Grantee had any contact or for which the Grantee had any responsibility (either direct or supervisory) at the time of termination of the Grantee's employment and at any time during the two-year period prior to such termination.

(f) Extension. If it shall be judicially determined that the Grantee has violated any of the Grantee's obligations under Section

7(A)(ii)(b), then the period applicable to each obligation that the Grantee shall have been determined to have violated shall automatically be extended by a period of time equal in length to the period during which such violation(s) occurred.

(B) Non-Solicitation. Except as otherwise provided in Section 7(A)(i), Detrimental Activity shall also include directly or indirectly at any time soliciting or inducing or attempting to solicit or induce any employee(s), sales representative(s), agent(s) or consultant(s) of the Corporation and/or of its parents, or its other subsidiaries or affiliated or related companies to terminate their employment, representation or other association with the Corporation and/or its parent or its other subsidiary or affiliated or related companies.

(C) Further Covenants. Except as otherwise provided in Section 7(A)(i), Detrimental Activity shall also include:

(i) directly or indirectly, at any time during or after the Grantee's employment with the Corporation, disclosing, furnishing, disseminating, making available or, except in the course of performing the Grantee's duties of employment, using any trade secrets or confidential business and technical information of the Corporation or its customers or vendors, including without limitation as to when or how the Grantee may have acquired such information. Such confidential information shall include, without limitation, the Corporation's unique selling, manufacturing and servicing methods and business techniques, training, service and business manuals, promotional materials, training courses and other training and instructional materials, vendor and product information, customer and prospective customer lists, other customer and prospective customer information and other business information. The Grantee specifically acknowledges that all such confidential information, whether reduced to writing, maintained on any form of electronic media, or maintained in the Grantee's mind or memory and whether compiled by the Corporation, and/or the Grantee, derives independent economic value from not being readily known to or ascertainable by proper means by others who can obtain economic value from its disclosure or use, that reasonable efforts have been made by the Corporation to maintain the secrecy of such information, that such information is the sole property of the Corporation and that any retention and use of such information by the Grantee during the Grantee's employment with the Corporation (except in the course of performing the Grantee's duties and obligations to the Corporation) or after the termination of the Grantee's employment shall constitute a misappropriation of the Corporation's trade secrets.

(ii) Upon termination of the Grantee's employment with the Corporation, for any reason, the Grantee's failure to return to the Corporation, in good condition, all property of the Corporation, including without limitation, the originals and all copies of any materials which contain, reflect, summarize, describe, analyze or refer or relate to any items of information listed in Section 7(C)(i) of this Agreement.

(D) Discoveries and Inventions. Except as otherwise provided in Section 7(A)(i), Detrimental Activity shall also include the failure or refusal of the Grantee to assign to the Corporation, its successors, assigns or nominees, all of the Grantee's rights to any discoveries, inventions and improvements, whether patentable or not, made, conceived or suggested, either solely or jointly with others, by the Grantee while in the Corporation's employ, whether in the course of the Grantee's employment with the use of the Corporation's time, material or facilities or that is in any way within or related to the existing or contemplated scope of the Corporation's business. Any discovery, invention or improvement relating to any subject matter with which the Corporation was concerned during the Grantee's employment and made, conceived or suggested by the Grantee, either solely or jointly with others, within one year following termination of the Grantee's employment under this Agreement or any successor agreements shall be irrebuttably presumed to have been so made, conceived or suggested in the course of such employment with the use of the Corporation's time, materials or facilities. Upon request by the Corporation with respect to any such discoveries, inventions or improvements, the Grantee will execute and deliver to the Corporation, at any time during or after the Grantee's employment, all appropriate documents for use in applying for, obtaining and maintaining such domestic and foreign patents as the Corporation may desire, and all proper assignments therefor, when so requested, at the expense of the Corporation, but without further or additional consideration.

(E) Work Made For Hire. Except as otherwise provided in Section 7(A)(i), Detrimental Activity shall also include violation of the Corporation's rights in any or all work papers, reports, documentation, drawings, photographs, negatives, tapes and masters therefor, prototypes and other materials (hereinafter, "items"), including without limitation, any and all such items generated and maintained on any form of electronic media, generated by Grantee during the Grantee's employment with the Corporation. The Grantee acknowledges that, to the extent permitted by law, all such items shall be considered a "work made for hire" and that ownership of any and all copyrights in any and all such items shall belong to the Corporation. The item will recognize the Corporation as the copyright owner, will contain all proper copyright notices, e.g., "(creation date) [Corporation Name], All Rights Reserved," and will be in condition to be registered or otherwise placed in compliance with registration or other statutory requirements throughout the world.

(F) Termination for Cause. Except as otherwise provided in Section 7(A)(i), Detrimental Activity shall also include activity that results in termination for Cause. For the purposes of this Section, "Cause" shall mean that, the Grantee shall have:

(i) been convicted of a criminal violation involving fraud, embezzlement, theft or violation of federal antitrust statutes or federal securities laws in connection with his duties or in the course of his employment with the Corporation or any affiliate of the Corporation;

(ii) committed intentional wrongful damage to property of the Corporation or any affiliate of the Corporation; or

(iii) committed intentional wrongful disclosure of secret processes or confidential information of the Corporation or any affiliate of the Corporation;

and any such act shall have been demonstrably and materially harmful to the Corporation.

(G) Other Injurious Conduct. Detrimental Activity shall also include any action contributing to a restatement of the Corporation's financials if this award of SARs to the Grantee is favorably affected by such restatement as provided under Section 10D of the Exchange Act and any applicable rules or regulations promulgated by the Securities and Exchange Commission or any national securities exchange or national securities association on which the Common Shares may be traded, and any other conduct or act determined to be injurious, detrimental or prejudicial to any significant interest of the Corporation or any Subsidiary unless the Grantee acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the Corporation.

(H) Reasonableness. The Grantee acknowledges that the Grantee's obligations under this Section 7 are reasonable in the context of the nature of the Corporation's business and the competitive injuries likely to be sustained by the Corporation if the Grantee were to violate such obligations. The Grantee further acknowledges that this Agreement is made in consideration of, and is adequately supported by the agreement of the Corporation to perform its obligations under this Agreement and by other consideration, which the Grantee acknowledges constitutes good, valuable and sufficient consideration.

8. Transferability.

No SAR granted hereunder may be transferred by the Grantee other than by will or the laws of descent and distribution and may be exercised during a Grantee's lifetime only by the Grantee or, in the event of the Grantee legal incapacity, by the Grantee's guardian or legal representative acting in a fiduciary capacity on behalf of the Grantee under state law and court supervision.

9. Compliance with Law.

The SARs granted hereby shall not be exercisable if such exercise would involve a violation of any applicable federal or state securities law, and the Corporation hereby agrees to make reasonable efforts to comply with any applicable state securities law. If the Ohio Securities Act shall be applicable to the SARs, they shall not be exercisable unless under said Act at the time of exercise the shares of Common Stock or other securities purchasable hereunder are exempt, are the subject matter of an exempt transaction, are registered by description or by qualification, or at such time are the subject matter of a transaction which has been registered by description.

10. Adjustments.

In the event of any change in the aggregate number of outstanding Common Shares by reason of (a) any stock dividend, stock split, combination of shares, recapitalization or other change in the capital structure of the Corporation, or (b) any merger, consolidation, spin-off, spin-out, split-off, split-up, reorganization, partial or complete liquidation of the Corporation or other distribution of assets, issuance of rights or warrants to purchase securities of the Corporation, or (c) any other corporate transaction or event having an effect similar to any of the foregoing, then the Committee shall adjust the number of SARs covered by this Agreement and the Base Price in such manner as shall be appropriate to prevent the dilution or enlargement of the rights of the Grantee that would otherwise result from such event.

11. Withholding Taxes.

To the extent that the Corporation is required to withhold federal, state, local or foreign taxes in connection with the exercise of the SARs, and the amounts available to the Corporation for such withholding are insufficient, it shall be a condition to such exercise that the Grantee make arrangements satisfactory to the Corporation for payment of the balance of such taxes required to be withheld. The Grantee may elect that all or any part of such withholding requirement be satisfied by retention by the Corporation of a portion of the Common Shares to be delivered to the Grantee. If such election is made, the shares so retained shall be credited against such withholding requirement at the Market Value per Share on the date of such exercise. In no event shall the market value of the Common Shares to be withheld and/or delivered pursuant to this Section to satisfy applicable withholding taxes in connection with the benefit exceed the minimum amount of taxes required to be withheld.

12. Continuous Employment.

For purposes of this Agreement, the continuous employment of the Grantee with the Corporation or a Subsidiary shall not be deemed to have been interrupted, and the Grantee shall not be deemed to have ceased to be an employee of the Corporation or a Subsidiary, by reason of the transfer of his employment among the Corporation and its Subsidiaries or a leave of absence approved by the Board.

13. No Employment Contract; Right to Terminate Employment.

The grant of the SARs under this Agreement to the Grantee is a voluntary, discretionary award being made on a one-time basis and it does not constitute a commitment to make any future awards. The grant of the SARs and any payments made hereunder will not be considered salary or other compensation for purposes of any severance pay or similar allowance, except as otherwise required by law. Nothing in this Agreement will give the Grantee any right to continue employment with the Corporation or any Subsidiary, as the case may be, or interfere in any way with the right of the Corporation or a Subsidiary to terminate the employment of the Grantee at any time.

14. Relation to Other Benefits.

Any economic or other benefit to the Grantee under this Agreement or the Plan shall not be taken into account in determining any benefits to which the Grantee may be entitled under any profit-sharing, retirement or other benefit or compensation plan maintained by the Corporation or a Subsidiary and shall not affect the amount of any life insurance coverage available to any beneficiary under any life insurance plan covering employees of the Corporation or a Subsidiary.

15. Information.

Information about the Grantee and the Grantee's participation in the Plan may be collected, recorded and held, used and disclosed for any purpose related to the administration of the Plan. The Grantee understands that such processing of this information may need to be carried out by the Corporation and its Subsidiaries and by third party administrators whether such persons are located within the Grantee's country or elsewhere, including the United States of America. The Grantee consents to the processing of information relating to the Grantee and the Grantee's participation in the Plan in any one or more of the ways referred to above.

16. Amendments.

Any amendment to the Plan shall be deemed to be an amendment to this agreement to the extent that the amendment is applicable hereto; provided, however, that no amendment shall adversely affect the rights of the Grantee with respect to the SARs without the Grantee's consent.

17. Severability.

In the event that one or more of the provisions of this agreement shall be invalidated for any reason by a court of competent jurisdiction, any provision so invalidated shall be deemed to be separable from the other provisions hereof, and the remaining provisions hereof shall continue to be valid and fully enforceable.

18. Governing Law.

This agreement is made under, and shall be construed in accordance with the internal substantive laws of the State of Ohio.

19. Relation to Severance Agreement.

Section 3(C) hereof shall supersede the provisions of any Severance Agreement between the Grantee and the Corporation, in effect at the Date of Grant, providing for earlier vesting of the SARs granted hereby in the event of a Change in Control.

The undersigned hereby acknowledges receipt of an executed original of this Appreciation Rights Agreement and accepts the SARs granted thereunder on the terms and conditions set forth herein and in the Plan.

Date: \_\_\_\_\_

**[GRANTEE NAME]**

Executed in the name and on behalf of the Corporation at Mayfield Heights, Ohio as of the \_\_\_\_ day of \_\_\_\_\_ 2016.

**MATERION CORPORATION**

By: \_\_\_\_\_

Michael C. Hasychak

Vice President, Treasurer and Secretary



## SEVERANCE AGREEMENT

THIS SEVERANCE AGREEMENT (this "Agreement") dated as of July 22, 2014 is made and entered by and between Materion Corporation, an Ohio corporation (the "Company"), and \_\_\_\_\_ (the "Executive").

WITNESSETH:

WHEREAS, the Executive is an executive of the Company and is expected to make (or continue to make) major contributions to the growth and financial strength of the Company; and

WHEREAS, the Company recognizes that the possibility of a Change in Control (as defined below) exists and that such possibility, and the uncertainty it may create among management, may result in the distraction or departure of management personnel, to the detriment of the Company and its shareholders; and

WHEREAS, the Company desires to assure itself of the continuity of management and desires to establish certain minimum severance benefits for certain of its executives, including the Executive, applicable in the event of a Change in Control; and

WHEREAS, the Company wishes to ensure that its executives are not unduly distracted by the circumstances attendant to the possibility of a Change in Control and to encourage the continued attention and dedication of such executives, including the Executive, to their assigned duties with the Company; and

WHEREAS, the Company desires to provide additional inducement for the Executive to continue to remain in the employ of the Company; and

WHEREAS, the Company and the Executive desire for this Agreement to take into account certain changes in the Company's compensation and employee benefit programs, and to amend and supersede any severance agreements between the Company and the Executive entered into prior to the date of this Agreement (collectively, the "Prior Agreements").

NOW, THEREFORE, the Company and the Executive agree as follows:

1. Certain Defined Terms. In addition to terms defined elsewhere herein, the following terms have the following meanings when used in this Agreement with initial capital letters:

(a) "Affiliate" means with respect to any Person, any holder of more than 10% of the outstanding shares or equity interests of such Person or any other Person which directly or indirectly controls, is controlled by or is under common control with such Person. A Person shall be deemed to control another Person if such Person possesses, directly or indirectly, the power to direct or cause the direction of the management and policies of the "controlled" Person, whether through ownership of voting securities, by contract or otherwise.

(b) "Base Pay" means the Executive's annual base salary rate as in effect from time to time.

(c) "Board" means the Board of Directors of the Company.

(d) "Cause" means that the Executive shall have:

(i) been convicted of a criminal violation involving fraud, embezzlement, theft or violation of federal antitrust statutes or federal securities laws in connection with his duties or in the course of his employment with the Company or any Affiliate of the Company;

(ii) committed intentional wrongful damage to property of the Company or any Affiliate of the Company;

(iii) committed intentional wrongful disclosure of secret processes or confidential information of the Company or any Affiliate of the Company; or

(iv) intentionally engaged in any activity in violation of Section 8;

and any such act shall have been demonstrably and materially harmful to the Company. For purposes of this Agreement, no act or failure to act on the part of the Executive shall be deemed "intentional" if it was due primarily to an error in judgment or negligence, but shall be deemed "intentional" only if done or omitted to be done by the Executive not in good faith and without reasonable belief that the Executive's action or omission was in the best interest of the Company. Notwithstanding the foregoing, the Executive shall not be deemed to have been terminated for "Cause" hereunder unless and until there shall have been delivered to the Executive a copy of a resolution duly adopted by the affirmative vote of not less than three quarters of the Board then in office at a meeting of the Board called and held for such purpose, after reasonable notice to the Executive and an opportunity for the Executive, together with the Executive's counsel (if the Executive chooses to

have counsel present at such meeting), to be heard before the Board, finding that, in the good faith opinion of the Board, the Executive had committed an act constituting “Cause” as herein defined and specifying the particulars thereof in detail. Nothing herein will limit the right of the Executive or his beneficiaries to contest the validity or propriety of any such determination.

(e) “Change in Control” means

(i) The acquisition by any individual, entity or group (within the meaning of Section 13(d)(3) or 14(d)(2) of the Securities Exchange Act of 1934, as amended (the “Exchange Act”)) (a “Person”) of beneficial ownership (within the meaning of Rule 13d-3 promulgated under the Exchange Act) of voting securities of the Company where such acquisition causes such Person to own (X) 30% or more of the combined voting power of the then outstanding voting securities of the Company entitled to vote generally in the election of directors (the “Outstanding Company Voting Securities”) without the approval of the Incumbent Board as defined in (ii) below or (Y) 35% or more of the Outstanding Voting Securities of the Company with the approval of the Incumbent Board; *provided, however*, that for purposes of this subsection (i), the following acquisitions shall not be deemed to result in a Change of Control: (A) any acquisition directly from the Company that is approved by the Incumbent Board (as defined in subsection (ii), below), (B) any acquisition by the Company or a subsidiary of the Company, (C) any acquisition by any employee benefit plan (or related trust) sponsored or maintained by the Company or any corporation controlled by the Company, (D) any acquisition by any Person pursuant to a transaction described in clauses (A), (B) and (C) of subsection (iii) below, or (E) any acquisition by, or other Business Combination (as defined in (iii) below) with, a person or group of which employees of the Company or any subsidiary of the Company control a greater than 25% interest (a “MBO”) but only if the Executive is one of those employees of the Company or any subsidiary of the Company that are participating in the MBO; *provided, further*, that if any Person’s beneficial ownership of the Outstanding Company Voting Securities reaches or exceeds 30% or 35%, as the case may be, as a result of a transaction described in clause (A) or (B) above, and such Person subsequently acquires beneficial ownership of additional voting securities of the Company, such subsequent acquisition shall be treated as an acquisition that causes such Person to own 30% or 35% or more, as the case may be, of the Outstanding Company Voting Securities; and *provided, further*, that if at least a majority of the members of the Incumbent Board determines in good faith that a Person has acquired beneficial ownership (within the meaning of Rule 13d-3 promulgated under the Exchange Act) of 30% or more of the Outstanding Company Voting Securities inadvertently, and such Person divests as promptly as practicable a sufficient number of shares so that such Person beneficially owns (within the meanings of Rule 13d-3 promulgated under the Exchange Act) less than 30% of the Outstanding Company Voting Securities, then no Change of Control shall have occurred as a result of such Person’s acquisition; or

(ii) individuals who, as of the date hereof, constitute the Board (the “Incumbent Board”) (as modified by this clause (ii)) cease for any reason to constitute at least a majority of the Board; *provided, however*, that any individual becoming a director subsequent to the date hereof whose election, or nomination for election by the Company’s shareholders, was approved by a vote of at least a majority of the directors then comprising the Incumbent Board (either by a specific vote or by approval of the proxy statement of the Company in which such person is named as a nominee for director, without objection to such nomination) shall be considered as though such individual were a member of the Incumbent Board, but excluding, for this purpose, any such individual whose initial assumption of office occurs as a result of an actual or threatened election contest with respect to the election or removal of directors or other actual or threatened solicitation of proxies or consents by or on behalf of a Person other than the Board; or

(iii) the consummation of a reorganization, merger or consolidation or sale or other disposition of all or substantially all of the assets of the Company or the acquisition of assets of another corporation, or other transaction (a “Business Combination”) excluding, however, such a Business Combination pursuant to which (A) the individuals and entities who were the ultimate beneficial owners of voting securities of the Company immediately prior to such Business Combination beneficially own, directly or indirectly, more than 65% of, respectively, the then outstanding shares of common stock and the combined voting power of the then outstanding voting securities entitled to vote generally in the election of directors, as the case may be, of the entity resulting from such Business Combination (including, without limitation, an entity that as a result of such transaction owns the Company or all or substantially all of the Company’s assets either directly or through one or more subsidiaries), (B) no Person (excluding any employee benefit plan (or related trust) of the Company, the Company or such entity resulting from such Business Combination) beneficially owns, directly or indirectly (X) 30% or more, if such Business Combination is approved by the Incumbent Board or (Y) 35% or more, if such Business Combination is not approved by the Incumbent Board, of the combined voting power of the then outstanding securities entitled to vote generally in the election of directors of the entity resulting from such Business Combination and (C) at least a majority of the members of the board of directors of the corporation resulting from such Business Combination were members of the Incumbent Board at the time of the execution of the initial agreement, or of the action of the Board, providing for such Business Combination; or

(iv) approval by the shareholders of the Company of a complete liquidation or dissolution of the Company except pursuant to a Business Combination described in clauses (A), (B) and (C) of subsection (iii), above.

(f) “Employee Benefits” means the benefits and service credit for benefits as provided under any and all employee retirement income and welfare benefit policies, plans, programs or arrangements in which Executive is entitled to participate, including without limitation any stock

purchase, savings, pension, supplemental executive retirement, or other retirement income or welfare benefit, deferred compensation, group or other life, health, medical/hospital or other insurance (whether funded by actual insurance or self-insured by the Company or an Affiliate of the Company), disability, expense reimbursement and other employee benefit policies, plans, programs or arrangements.

(g) “Incentive Pay” means the annual bonus, incentive or other payment of compensation under the Management Incentive Plan or, if such Management Incentive Plan is no longer in effect, the annual bonus, incentive or other payment of compensation in addition to Base Pay, made or to be made in regard to services rendered in any year or other period pursuant to any bonus, incentive, profit-sharing, performance, discretionary pay or similar agreement, policy, plan, program or arrangement (whether or not funded) of the Company or an Affiliate of the Company, or any successor thereto.

(h) “Retirement Plans” means the benefit plans (including the defined contribution and defined benefit plans) of the Company that are intended to be qualified under Section 401(a) of the Internal Revenue Code of 1986, as amended (the “Code”) if the Executive was a participant in such Retirement Plan on the date of the occurrence of the Change in Control.

(i) “Severance Period” means the period of time commencing on the date of the first occurrence of a Change in Control and continuing until the earlier of (i) the second anniversary of the occurrence of the Change in Control, or (ii) the Executive’s death; *provided, however*, that commencing on each anniversary of the Change in Control, the Severance Period will automatically be extended for an additional year unless, not later than 90 calendar days prior to such anniversary date, either the Company or the Executive shall have given written notice to the other that the Severance Period is not to be so extended.

(j) “Subsidiary” means an entity in which the Company directly or indirectly beneficially owns 50% or more of the Outstanding Company Voting Securities.

(k) “Term” means the period commencing as of the date hereof and expiring on the close of business on December 31, 20\_\_; *provided, however*, that (i) commencing on January 1, 20\_\_ and each January 1 thereafter, the Term will automatically be extended for an additional year unless, not later than September 30 of the immediately preceding year, the Company or the Executive shall have given notice that it or the Executive, as the case may be, does not wish to have the Term extended; (ii) if a Change in Control occurs during the Term, the Term shall expire and this Agreement will terminate at the expiration of the Severance Period; and (iii) subject to the last sentence of Section 9, if, prior to a Change in Control, the Executive ceases for any reason to be an employee of the Company and any Affiliate of the Company, thereupon without further action the Term shall be deemed to have expired and this Agreement will immediately terminate and be of no further effect. For purposes of this Section 1(k), the Executive shall not be deemed to have ceased to be an employee of the Company and any Affiliate of the Company by reason of the transfer of Executive’s employment between the Company and any Affiliate of the Company, or among any Affiliates of the Company.

(l) “Termination Date” means the date on which the Executive’s employment is terminated (the effective date of which shall be the date of termination, or such other date that may be specified by the Executive if the termination is pursuant to Section 3(b)), provided that in each case such date constitutes a “separation from service,” as defined for purposes of Section 409A of the Code.

2. Operation of Agreement. This Agreement will be effective and binding immediately upon its execution, but, anything in this Agreement to the contrary notwithstanding, except as provided in Section 9, this Agreement will not be operative unless and until a Change in Control occurs. Upon the occurrence of a Change in Control at any time during the Term, without further action, this Agreement shall become immediately operative.

3. Termination Following a Change in Control.

(a) In the event of the occurrence of a Change in Control during the Term, the Executive’s employment may be terminated by the Company or an Affiliate of the Company during the Severance Period and the Executive shall be entitled to the benefits provided by Section 4 unless such termination is the result of the occurrence of one or more of the following events:

(i) The Executive’s death;

(ii) If the Executive becomes permanently disabled within the meaning of, and begins actually to receive disability benefits pursuant to, the long-term disability plan in effect for, or applicable to, Executive immediately prior to the Change in Control; or

(iii) Cause.

(b) In the event of the occurrence of a Change in Control during the Term, the Executive may terminate employment with the Company and any Affiliate of the Company during the Severance Period with the right to severance compensation as provided in Section 4 upon the occurrence of one or more of the following events (regardless of whether any other reason, other than Cause as hereinabove provided, for such termination exists or has occurred, including without limitation other employment):

(i) Failure to elect or reelect or otherwise to maintain the Executive in the office or the position, or a substantially equivalent or better office or position, of or with the Company and/or an Affiliate of the Company (or any successor thereto by operation of law or otherwise), as the case may be, which the Executive held immediately prior to a Change in Control, or the removal of the Executive as a Director of the Company and/or an Affiliate of the Company (or any successor thereto) if the Executive shall have been a Director of the Company and/or an Affiliate of the Company immediately prior to the Change in Control;

(ii) (A) A significant adverse change in the nature or scope of the authorities, powers, functions, responsibilities or duties attached to the position with the Company and any Affiliate of the Company which the Executive held immediately prior to the Change in Control, (B) a reduction in the aggregate of the Executive's Base Pay and Incentive Pay opportunity received from the Company and any Affiliate of the Company, or (C) the termination or denial of the Executive's rights to Employee Benefits or any long-term, stock option, performance share, performance unit, or similar equity or equity-based award opportunity or a reduction in the scope or value thereof, any of which is not remedied by the Company within 10 calendar days after receipt by the Company of written notice from the Executive of such change, reduction or termination, as the case may be;

(iii) The liquidation, dissolution, merger, consolidation or reorganization of the Company or the transfer of all or substantially all of its business and/or assets, unless the successor or successors (by liquidation, merger, consolidation, reorganization, transfer or otherwise) to which all or substantially all of its business and/or assets have been transferred (by operation of law or otherwise) assumed all duties and obligations of the Company under this Agreement pursuant to Section 11(a);

(iv) The Company relocates its principal executive offices (if such offices are the principal location of Executive's work), or requires the Executive to have his principal location of work changed, to any location that, in either case, is in excess of 50 miles from the location thereof immediately prior to the Change in Control, or requires the Executive to travel away from his office in the course of discharging his responsibilities or duties hereunder at least 20% more (in terms of aggregate days in any calendar year or in any calendar quarter when annualized for purposes of comparison to any prior year) than was required of Executive in any of the three full years immediately prior to the Change in Control without, in either case, his prior written consent; or

(v) Without limiting the generality or effect of the foregoing, any material breach of this Agreement by the Company or any successor thereto which is not remedied by the Company within 10 calendar days after receipt by the Company of written notice from the Executive of such breach.

(c) A termination by the Company pursuant to Section 3(a) or by the Executive pursuant to Section 3(b) will not affect any rights that the Executive may have pursuant to any agreement, policy, plan, program or arrangement of the Company or an Affiliate of the Company providing Employee Benefits or covering long-term or equity (or equity-based) awards (except as provided in Section 4(a) and Annex A), which rights shall be governed by the terms thereof.

#### 4. Severance Compensation.

(a) If, following the occurrence of a Change in Control during the Term, the Company or an Affiliate of the Company terminates the Executive's employment during the Severance Period other than pursuant to Section 3(a)(i), 3(a)(ii) or 3(a)(iii), or if the Executive terminates his employment pursuant to Section 3(b) (if Section 3(b) is operative), the Company (subject to Section 4(d)) will pay to the Executive the lump sum payment amounts described in Annex A within five business days after the Termination Date (the "Payment Date") and will continue to provide to the Executive the benefits described in Annex A for the periods described therein. There shall be no duplication of amounts paid or benefits provided under this Agreement and long-term or equity (or equity-based) awards.

(b) Notwithstanding any provision of this Agreement to the contrary, the parties' respective rights and obligations under this Section 4 and under Sections 5, 7, 8, 9 and 13 will survive any termination or expiration of this Agreement or the termination of the Executive's employment following a Change in Control for any reason whatsoever.

(c) Unless otherwise expressly provided by the applicable plan, program or agreement, after the occurrence of a Change in Control during the Term, the Company shall pay in cash to the Executive a lump sum amount equal to the value of any annual bonus (including, without limitation, incentive-based annual cash bonuses and performance units, but not including any long-term or equity-based compensation or compensation provided under a qualified plan) earned or accrued with respect to the Executive's service during the performance period or periods that includes the date on which the Change in Control occurred, disregarding any applicable vesting requirements; *provided that* such amount shall be calculated at the plan target or payout rate, but prorated to base payment only on the portion of the Executive's service that had elapsed during the applicable performance period. Such payment shall take into account service rendered through the Termination Date. To the extent such payment is exempt under Section 409A of the Code, it shall be made on the Payment Date. To the extent such payment constitutes "deferred compensation" under Section 409A of the Code, it shall be made at the same time it would have been made in the absence of the Change in Control.

(d) Notwithstanding the foregoing provisions of this Section 4 and Annex A, if the Executive is a "specified employee," determined

pursuant to procedures adopted by the Company in compliance with Section 409A of the Code, on his Termination Date, amounts that would otherwise be payable pursuant to this Agreement during the six-month period immediately following the Executive's Termination Date (the "Delayed Payments") and benefits that would otherwise be provided pursuant to this Agreement (except for the benefits described in Paragraph 6 of Annex A) (the "Delayed Benefits") during the six-month period immediately following the Executive's Termination Date (such period, the "Delay Period") will instead be paid or made available on the earlier of (i) the first business day of the seventh month after Executive's Termination Date, or (ii) the Executive's death (the applicable date, the "Permissible Payment Date").

(e) Each payment to be made to the Executive under the provisions of this Section 4 and Annex A shall be considered to be a separate payment and not one of a series of payments for purposes of Section 409A of the Code. Further, coverages provided during one taxable year shall not affect the degree to which coverages will be provided in any other taxable year.

5. Limitation on Payments and Benefits. If any amount or benefit to be paid or provided under this Agreement or otherwise pursuant to or by reason of any other agreement, policy, plan, program or arrangement, including without limitation any stock option, performance share, performance unit, stock appreciation right or similar right, or the lapse or termination of any restriction on or the vesting or exercisability of any of the foregoing would be an "Excess Parachute Payment" within the meaning of Section 280G of the Code (or any successor provision thereto), but for the application of this sentence, then the payments and benefits to be paid or provided under this Agreement or otherwise shall be reduced to the minimum extent necessary (but in no event to less than zero) so that no portion of any such payment or benefit, as so reduced, constitutes an Excess Parachute Payment; *provided, however*, that the foregoing reduction shall be made only if and to the extent that such reduction would result in an increase in the aggregate payments and benefits to be provided, determined on an after-tax basis (taking into account the excise tax imposed pursuant to Section 4999 of the Code, or any successor provision thereto, any tax imposed by a comparable provision of state law, and any applicable federal, state and local income taxes ("Excise Tax")). The determination of whether any reduction in such payments or benefits to be provided under this Agreement or otherwise is required pursuant to the preceding sentence shall be made by an independent accounting firm selected by the Company (the "Accounting Firm"), which Accounting Firm shall provide detailed supporting calculations both to the Company and the Executive within 15 business days of the Termination Date or such earlier time as is requested by the Company and, if requested by the Executive, an opinion that he has substantial authority not to report any Excise Tax on the Executive's Federal income tax return with respect to the Excess Parachute Payments. Any such determination by the Accounting Firm will be binding upon the Company and the Executive. The fact that the Executive's right to payments or benefits may be reduced by reason of the limitations contained in this Section 5 shall not of itself limit or otherwise affect any other rights of the Executive. In the event that any payment or benefit intended to be provided under this Agreement or otherwise is required to be reduced pursuant to this Section 5, the Company shall reduce the Executive's payments and/or benefits, to the extent required, in the following order: (i) the lump sum payment described in paragraph (1) of Annex A; (ii) the lump sum payment described in Section 4(c) of this Agreement; (iii) the benefits described in Paragraph (5) of Annex A; (v) the benefits described in Paragraph (2) of Annex A; and (vi) the accelerated vesting of long-term and equity or equity-based awards (if any) described in Paragraph (3) of Annex A.

6. No Mitigation Obligation. The Company hereby acknowledges that it will be difficult and may be impossible for the Executive to find reasonably comparable employment following the Termination Date. Accordingly, the payment of the severance compensation by the Company to the Executive in accordance with the terms of this Agreement is hereby acknowledged by the Company to be reasonable, and the Executive will not be required to mitigate the amount of any payment provided for in this Agreement by seeking other employment or otherwise, nor will any profits, income, earnings or other benefits from any source whatsoever create any mitigation, offset, reduction or any other obligation on the part of the Executive hereunder or otherwise, except as expressly provided in the last sentence of Paragraph 2(a) set forth on Annex A.

7. Legal Fees and Expenses.

(a) It is the intent of the Company that the Executive not be required to incur legal fees and the related expenses associated with the reasonable interpretation, enforcement or defense of Executive's rights under this Agreement by litigation or otherwise because the reasonable cost and expense thereof would substantially detract from the benefits intended to be extended to the Executive hereunder. Accordingly, if it should appear to the Executive that the Company has failed to comply with any of its obligations under this Agreement or in the event that the Company or any other person takes or threatens to take any action to declare this Agreement void or unenforceable, or institutes any litigation or other action or proceeding designed to deny, or to recover from, the Executive the benefits provided or intended to be provided to the Executive hereunder, the Company irrevocably authorizes the Executive from time to time to retain counsel of Executive's choice, at the reasonable expense of the Company as hereafter provided, to advise and represent the Executive in connection with any such reasonable interpretation, enforcement or defense, including without limitation the initiation or defense of any litigation or other legal action, whether by or against the Company or any Director, officer, stockholder or other person affiliated with the Company, in any jurisdiction. Notwithstanding any existing or prior attorney-client relationship between the Company and such counsel, the Company irrevocably consents to the Executive's entering into an attorney-client relationship with such counsel, and in that connection the Company and the Executive agree that a confidential relationship shall exist between the Executive and such counsel. Without respect to whether the Executive prevails, in whole or in part, in connection with any of the foregoing, the Company will pay and be solely financially responsible for any and all reasonable attorneys' and related fees and reasonable expenses incurred by the Executive in connection with any of the foregoing. Such payments shall be made no later than December 31 of the year following the year in the which the Executive incurs the expenses, provided that in no event will the amount of expenses eligible for reimbursement in one year affect the

amount of expenses to be reimbursed, or in-kind benefits to be provided, in any other taxable year.

(b) Without limiting the obligations of the Company pursuant to Section 7(a) hereof, in the event a Change in Control occurs during the Term, the performance of the Company's obligations under this Agreement, including, without limitation, this Section 7 and Annex A, shall be secured by amounts deposited or to be deposited in trust pursuant to certain trust agreements to which the Company shall be a party providing that the benefits to be provided hereunder and the reasonable fees and expenses of counsel selected from time to time by the Executive pursuant to Section 7(a) shall be paid, or reimbursed to the Executive if paid by the Executive, either in accordance with the terms of such trust agreements, or, if not so provided, on a regular, periodic basis upon presentation by the Executive to the trustee of a statement or statements prepared by such counsel in accordance with its customary practices. Any failure by the Company to satisfy any of its obligations under this Section 7(b) shall not limit the rights of the Executive hereunder. Subject to the foregoing, the Executive shall have the status of a general unsecured creditor of the Company and shall have no right to, or security interest in, any assets of the Company or any Affiliate of the Company. Notwithstanding anything contained in this Agreement to the contrary, in no event shall any amount be transferred to a trust described in this Section 7(b) if, pursuant to Section 409A(b)(3)(A) of the Code, such amount would, for purposes of Section 83 of the Code, be treated as property transferred in connection with the performance of services.

8. Competitive Activity; Confidentiality; Nonsolicitation.

(a) Acknowledgements and Agreements. The Executive hereby acknowledges and agrees that in the performance of the Executive's duties to the Company during the Term, the Executive will be brought into frequent contact, either in person, by telephone or through the mails, with existing and potential customers of the Company located globally. The Executive also agrees that trade secrets and confidential information of the Company, more fully described in Section 8(j) of this Agreement, gained by the Executive during the Executive's association with the Company, have been developed by the Company through substantial expenditures of time, effort and money and constitute valuable and unique property of the Company. The Executive further understands and agrees that the foregoing makes it necessary for the protection of the business of the Company that the Executive not compete with the Company during the Term and not compete with the Company for a reasonable period thereafter, as further provided in the following subsections.

(b) Covenants During the Term. During the Term and prior to the Termination Date, the Executive will not compete with the Company. In accordance with this restriction, but without limiting its terms, during the term of the Executive's employment, the Executive will not:

- (i) enter into or engage in any business which competes with the business of the Company;
- (ii) solicit customers, business, patronage or orders for, or sell, any products and services in competition with, or for any business that competes with, the business of the Company;
- (iii) divert, entice or otherwise take away any customers, business, patronage or orders of the Company or attempt to do so; or
- (iv) promote or assist, financially or otherwise, any person, firm, association, partnership, corporation or other entity engaged in any business which competes with the business of the Company.

(c) Covenants Following Termination. For a period of two (2) years following the Termination Date, if the Executive has received or is receiving benefits under this Agreement, the Executive will not:

- (i) enter into or engage in any business which competes with the Company's business within the Restricted Territory (as defined in Section 8(g));
- (ii) solicit customers, business, patronage or orders for, or sell, any products and services in competition with, or for any business, wherever located, that competes with, the Company's business within the Restricted Territory;
- (iii) divert, entice or otherwise take away any customers, business, patronage or orders of the Company within the Restricted Territory, or attempt to do so; or
- (iv) promote or assist, financially or otherwise, any person, firm, association, partnership, corporation or other entity engaged in any business which competes with the Company's business within the Restricted Territory.

(d) Indirect Competition. For the purposes of Sections 8(b) and 8(c), inclusive, but without limitation thereof, the Executive will be in violation thereof if the Executive engages in any or all of the activities set forth therein directly as an individual on the Executive's own account, or indirectly as a partner, joint venturer, employee, agent, salesperson, consultant, officer and/or director of any firm, association, partnership, corporation or other entity, or as a stockholder of any corporation in which the Executive or the Executive's spouse, child or parent owns, directly or indirectly, individually or in the aggregate, more than five percent (5%) of the outstanding stock.

(e) The Company. For the purposes of this Section 8, the Company shall include any and all direct and indirect subsidiary, parent,

affiliated, or related companies of the Company for which the Executive worked or had responsibility at the time of termination of the Executive's employment and at any time during the two (2) year period prior to such termination.

(f) The Company's Business. For the purposes of Sections 8(b), 8(c), 8(k) and 8(l), inclusive, the Company's business is defined to be the manufacture, marketing and sale of high performance engineered materials serving global telecommunications, computer, automotive electronics, industrial components and optical media markets, as further described in any and all manufacturing, marketing and sales manuals and materials of the Company as the same may be altered, amended, supplemented or otherwise changed from time to time, or of any other products or services substantially similar to or readily substitutable for any such described products and services.

(g) Restricted Territory. For the purposes of Section 8(c), the Restricted Territory shall be defined as and limited to:

(i) any geographic areas serviced by the Company during the two (2) year period following the Termination Date as to any business segment, product, service, or activity for which the Executive worked, to which the Executive was assigned or had any responsibility (either direct or supervisory), in which the Executive was involved in research and/or development, or about which the Executive had access to any trade secrets or confidential business and technical information of the Company, at the time of the Termination Date and at any time during the two (2) year period prior to the Termination Date; and

(ii) all of the specific customer accounts, whether within or outside of the geographic area described in (i) above, with which the Executive had any contact or for which the Executive was assigned or had any responsibility (either direct or supervisory), in which the Executive was involved in solicitation or development, or about which the Executive had access to any trade secrets or confidential business and technical information of the Company, at the time of Termination Date and at any time during the two (2) year period prior to the Termination Date.

(h) Extension. If it shall be judicially determined that the Executive has violated any of the Executive's obligations under Section 8(c), then the period applicable to each obligation that the Executive shall have been determined to have violated shall automatically be extended by a period of time equal in length to the period during which such violation(s) occurred.

(i) Non-Solicitation. The Executive will not directly or indirectly, during the period of two (2) years following the Termination Date, solicit or induce or attempt to solicit or induce any employee(s), sales representative(s), agent(s) or consultant(s) of the Company and/or of its parent, or its other subsidiary, affiliated or related companies to terminate their employment, representation or other association with the Company and/or its parent or its other subsidiary, affiliated or related companies.

(j) Further Covenants.

(i) The Executive will keep in strict confidence, and will not, directly or indirectly, at any time during or after the Executive's employment with the Company, disclose, furnish, disseminate, make available or, except in the course of performing the Executive's duties of employment, use any trade secrets or confidential business and technical information of the Company or its customers or vendors, including without limitation as to when or how the Executive may have acquired such information. Such confidential information shall include, without limitation, the Company's unique selling, manufacturing and servicing methods and business techniques, training, service and business manuals, promotional materials, training courses and other training and instructional materials, vendor and product information, customer and prospective customer lists, other customer and prospective customer information and other business information. The Executive specifically acknowledges that all such confidential information, whether reduced to writing, maintained on any form of electronic media, or maintained in the Executive's mind or memory and whether compiled by the Company, and/or the Executive, derives independent economic value from not being readily known to or ascertainable by proper means by others who can obtain economic value from its disclosure or use, that reasonable efforts have been made by the Company to maintain the secrecy of such information, that such information is the sole property of the Company and that any retention and use of such information by the Executive during the Executive's employment with the Company (except in the course of performing the Executive's duties and obligations to the Company) or after the termination of the Executive's employment shall constitute a misappropriation of the Company's trade secrets.

(ii) The Executive agrees that upon termination of the Executive's employment with the Company, for any reason, the Executive shall return to the Company, in good condition, all property of the Company, including without limitation, the originals and all copies of any materials which contain, reflect, summarize, describe, analyze or refer or relate to any items of information listed in Section 8(j)(i) of this Agreement. In the event that such items are not so returned, the Company will have the right to charge the Executive for all reasonable damages, costs, attorneys' fees and other expenses incurred in searching for, taking, removing and/or recovering such property.

(k) Discoveries and Inventions; Work Made for Hire.

(i) The Executive hereby assigns and agrees to assign to the Company, its successors, assigns or nominees, all of the Executive's rights to any discoveries, inventions and improvements, whether patentable or not, made, conceived or suggested, either solely or jointly

with others, by the Executive while in the Company's employ, whether in the course of the Executive's employment with the use of the Company's time, material or facilities or that is in any way within or related to the existing or contemplated scope of the Company's business. Any discovery, invention or improvement relating to any subject matter with which the Company was concerned during the Executive's employment and made, conceived or suggested by the Executive, either solely or jointly with others, within two (2) years following termination of the Executive's employment under this Agreement or any successor agreements shall be irrebuttably presumed to have been so made, conceived or suggested in the course of such employment with the use of the Company's time, materials or facilities. Upon request by the Company with respect to any such discoveries, inventions or improvements, the Executive will execute and deliver to the Company, at any time during or after the Executive's employment, all appropriate documents for use in applying for, obtaining and maintaining such domestic and foreign patents as the Company may desire, and all proper assignments therefor, when so requested, at the expense of the Company, but without further or additional consideration.

(ii) The Executive acknowledges that, to the extent permitted by law, all work papers, reports, documentation, drawings, photographs, negatives, tapes and masters therefor, prototypes and other materials (hereinafter, "items"), including without limitation, any and all such items generated and maintained on any form of electronic media, generated by the Executive during the Executive's employment with the Company shall be considered a "work made for hire" and that ownership of any and all copyrights in any and all such items shall belong to the Company. The item will recognize the Company as the copyright owner, will contain all proper copyright notices, e.g., "(creation date) Materion Corporation, All Rights Reserved," and will be in condition to be registered or otherwise placed in compliance with registration or other statutory requirements throughout the world.

(l) Communication of Contents of Agreement. During the Executive's employment and for two (2) years thereafter, the Executive will communicate the contents of this Section 8 of this Agreement to any person, firm, association, partnership, corporation or other entity which the Executive intends to be employed by, associated with, or represent and which is engaged in a business that is competitive to the business of the Company.

(m) Relief. The Executive acknowledges and agrees that the remedy at law available to the Company for breach of any of the Executive's obligations under this Agreement would be inadequate. The Executive therefore agrees that, in addition to any other rights or remedies that the Company may have at law or in equity, temporary and permanent injunctive relief may be granted in any proceeding which may be brought to enforce any provision contained in Sections 8(b), 8(c), 8(i), 8(j), 8(k) and 8(l), inclusive, of this Agreement, without the necessity of proof of actual damage.

(n) Reasonableness. The Executive acknowledges that the Executive's obligations under this Section 8 are reasonable in the context of the nature of the Company's business and the competitive injuries likely to be sustained by the Company if the Executive was to violate such obligations. The Executive further acknowledges that this Agreement is made in consideration of, and is adequately supported by the agreement of the Company to perform its obligations under this Agreement and by other consideration, which the Executive acknowledges constitutes good, valuable and sufficient consideration.

9. Employment Rights. Nothing expressed or implied in this Agreement will create any right or duty on the part of the Company or the Executive to have the Executive remain in the employment of the Company or any Affiliate of the Company prior to or following any Change in Control. Any termination of employment of the Executive or the removal of the Executive from the office or position in the Company or any Affiliate of the Company that occurs following the commencement of any discussion with a third person that ultimately results in a Change in Control, shall be deemed to be a termination or removal of the Executive after a Change in Control for purposes of this Agreement.

10. Withholding of Taxes. The Company may withhold from any amounts payable under this Agreement all federal, state, city or other taxes as the Company is required to withhold pursuant to any applicable law, regulation or ruling.

11. Successors and Binding Agreement.

(a) The Company will require any successor (whether direct or indirect, by purchase, merger, consolidation, reorganization or otherwise) to all or substantially all of the business or assets of the Company, by agreement in form and substance reasonably satisfactory to the Executive, expressly to assume and agree to perform this Agreement in the same manner and to the same extent the Company would be required to perform if no such succession had taken place. This Agreement will be binding upon and inure to the benefit of the Company and any successor to the Company, including without limitation any persons acquiring directly or indirectly all or substantially all of the business or assets of the Company whether by purchase, merger, consolidation, reorganization or otherwise (and such successor shall thereafter be deemed the "Company" for the purposes of this Agreement), but will not otherwise be assignable, transferable or delegable by the Company.

(b) This Agreement will inure to the benefit of and be enforceable by the Executive's personal or legal representatives, executors, administrators, successors, heirs, distributees and legatees.

(c) This Agreement is personal in nature and neither of the parties hereto shall, without the consent of the other, assign, transfer or delegate



this Agreement or any rights or obligations hereunder except as expressly provided in Sections 11(a) and 11(b). Without limiting the generality or effect of the foregoing, the Executive's right to receive payments hereunder will not be assignable, transferable or delegable, whether by pledge, creation of a security interest, or otherwise, other than by a transfer by Executive's will or by the laws of descent and distribution and, in the event of any attempted assignment or transfer contrary to this Section 11(c), the Company shall have no liability to pay any amount so attempted to be assigned, transferred or delegated.

12. Notices. For all purposes of this Agreement, all communications, including without limitation notices, consents, requests or approvals, required or permitted to be given hereunder will be in writing and will be deemed to have been duly given when hand delivered or dispatched by electronic facsimile transmission (with receipt thereof orally confirmed), or five business days after having been mailed by United States registered or certified mail, return receipt requested, postage prepaid, or three business days after having been sent by a nationally recognized overnight courier service such as FedEx or UPS, addressed to the Company (to the attention of the Secretary of the Company) at its principal executive office and to the Executive at his principal residence, or to such other address as any party may have furnished to the other in writing and in accordance herewith, except that notices of changes of address shall be effective only upon receipt.

13. Compliance with Section 409A of the Code. To the extent applicable, it is intended that this Agreement comply with the provisions of Section 409A of the Code. This Agreement shall be administered in a manner consistent with this intent. References to Section 409A shall include any proposed, temporary or final regulation, or any other formal guidance, promulgated with respect to such section by the U.S. Department of Treasury or the Internal Revenue Service.

14. Governing Law; Choice of Forum. The validity, interpretation, construction and performance of this Agreement will be governed by and construed in accordance with the substantive laws of the State of Ohio, without giving effect to the principles of conflict of laws of such State. Further, any litigation arising out of this Agreement shall be venued in a court of competent jurisdiction located in Cuyahoga County, Ohio. In executing this Agreement, the Executive acknowledges that the Executive has purposefully availed himself or herself of the benefits and privileges of the jurisdictions of such courts, that the Executive waives any objections of the basis of forum, venue, and/or jurisdiction, and that the Executive willfully and knowingly submits himself or herself to the jurisdiction of such courts. The Executive further agrees that any litigation concerning, in whole or in part, Section 8 of this Agreement shall be filed either in the United States District Court for the Northern District of Ohio located in Cleveland, Ohio or in the Cuyahoga County Court of Common Pleas, Commercial Docket located in Cleveland, Ohio.

15. Validity. If any provision of this Agreement or the application of any provision hereof to any person or circumstance is held invalid, unenforceable or otherwise illegal, the remainder of this Agreement and the application of such provision to any other person or circumstance will not be affected, and the provision so held to be invalid, unenforceable or otherwise illegal will be reformed to the extent (and only to the extent) necessary to make it enforceable, valid or legal.

16. Miscellaneous. No provision of this Agreement may be modified, waived or discharged unless such waiver, modification or discharge is agreed to in writing signed by the Executive and the Company. No waiver by either party hereto at any time of any breach by the other party hereto or compliance with any condition or provision of this Agreement to be performed by such other party will be deemed a waiver of similar or dissimilar provisions or conditions at the same or at any prior or subsequent time. No agreements or representations, oral or otherwise, expressed or implied with respect to the subject matter hereof have been made by either party which are not set forth expressly in this Agreement. References to Sections are to Sections of this Agreement.

17. Counterparts. This Agreement may be executed in one or more counterparts, each of which shall be deemed to be an original but all of which together will constitute one and the same agreement.

18. Prior Agreements. This Agreement amends and supersedes, as of the date first above written, the Prior Agreements between the Company and the Executive. The Executive agrees that he or she has no further rights under the Prior Agreements.

IN WITNESS WHEREOF, the parties have caused this Agreement to be duly executed and delivered as of the date first above written.

MATERION CORPORATION

By:

Name

Title:

[Executive]

Annex A

## SEVERANCE COMPENSATION

(1) A lump sum payment in an amount equal to two times the sum of (A) Base Pay (at the highest rate in effect for any period prior to the Termination Date), plus (B) Incentive Pay (in an amount equal to not less than the higher of (1) the average aggregate Incentive Pay earned in the three fiscal years immediately preceding the year in which the Termination Date occurred or (2) the plan target opportunity amount for the year in which the Termination Date occurred).

(2) (a) For a period of 24 months following the Termination Date (the “Continuation Period”), the Company will arrange to provide the Executive with Employee Benefits that are welfare benefits including, without limitation, medical and life insurance (but not perquisites, stock option, performance share, performance unit, stock purchase, stock appreciation or similar compensatory benefits or benefits covered by Paragraph (4) below) substantially similar (except with respect to the cost of health care benefits) to those that the Executive was receiving or entitled to receive immediately prior to the Termination Date (or, if greater, immediately prior to the reduction, termination, or denial described in Section 3(b)(ii)). If and to the extent that any benefit described in this Paragraph 2 is not or cannot be paid or provided under any policy, plan, program or arrangement of the Company or any Affiliate of the Company, as the case may be, then the Company will itself pay or provide for the payment to the Executive, his dependents and beneficiaries, of such Employee Benefits along with, in the case of any benefit described in this Paragraph 2 which is subject to tax because it is not or cannot be paid or provided under any such policy, plan, program or arrangement of the Company or any Affiliate of the Company, an additional amount such that after payment by the Executive, or his dependents or beneficiaries, as the case may be, of all taxes so imposed, the recipient retains an amount equal to such taxes. Without otherwise limiting the purposes or effect of Section 6, Employee Benefits otherwise receivable by the Executive pursuant to this Paragraph 2 will be reduced to the extent comparable welfare benefits are actually received by the Executive from another employer during the Continuation Period following the Executive’s Termination Date, and any such benefits actually received by the Executive shall be reported by the Executive to the Company.

(b) The Executive will pay the full cost for health care continuation coverage (including medical, dental and vision coverage) described in Paragraph 2(a) on an after-tax basis. On the Payment Date and on January 2 of the following year, the Company will make a payment (the “Health Plans Premium Reimbursement”) to the Executive equal to the difference between (i) the amount the Executive will be required to pay during the calendar year of payment for such health care continuation coverage, and (ii) the amount the Executive would have been required to pay if the Executive were only required to pay the amount a similarly situated active employee would pay for such coverage, provided that the Company will not provide any payment pursuant to this Paragraph 2(b) after the date on which the Executive becomes employed (other than on a part-time or temporary basis) by any other person or entity that makes health care coverage available to the Executive and his eligible dependents. The Company shall reimburse the amount of any federal, state and local taxes imposed on the Executive as a result of the Health Plans Premium Reimbursement or the receipt of benefits under the health care continuation coverage, such reimbursement to be made subject to Section 4(d) and no later than December 31 of the year following the year in which the Executive remits the applicable taxes.

(c) Notwithstanding the foregoing, or any other provision of the Agreement, for purposes of determining the period of continuation coverage to which the Executive or any of his dependents is entitled pursuant to Section 4980B of the Code (or any successor provision thereto) under the Company’s medical, dental and other group health plans, or successor plans, the Executive’s “qualifying event” shall be the termination of the Continuation Period. Further, for purposes of the immediately preceding sentence and for any other purpose including, without limitation, the calculation of service or age to determine Executive’s eligibility for benefits under any retiree medical benefits or life insurance plan or policy, the Executive shall be considered to have remained actively employed on a full-time basis through the termination of the Continuation Period.

(3) Upon the occurrence of a Change in Control, the provisions of the applicable long-term and equity (or equity-based) award agreements and plans, or any other documents or arrangements applicable at such time that provide for the treatment of such long-term and equity (or equity-based) awards in connection with or after a change in control, will govern the treatment of all long-term and equity (or equity-based) awards held by the Executive.

(4) Reasonable fees for outplacement services, by a firm selected by the Executive, at the expense of the Company in an amount not in excess of \$20,000; provided that Executive incurs such outplacement services no later than December 31 of the second year following the year in which Executive’s Termination Date occurs, and provided further that the payment of fees for outplacement services will not be made any later than the last day of the third year following the year in which Executive’s Date of Termination occurs.





**MATERION and SUBSIDIARIES  
MANAGEMENT INCENTIVE SUBPLAN FOR  
2016 PLAN YEAR**

**I. INTRODUCTION**

Materion Corporation (the "Company") maintains and operates the Materion Corporation Management Incentive Plan (the "MIP"), which is a shareholder-approved short-term incentive plan. The Management Incentive Sub-plan for 2016 Plan Year (the "Plan") has been established by the Compensation Committee (the "Compensation Committee") of the Company's Board of Directors as a Sub-plan under the MIP to provide incentive compensation to certain eligible employees based principally on annual financial performance. Plan awards have a significant portion based on Company performance and potentially Business Unit performance ("Financial Performance") and a remaining component that recognizes individual and combined contributions toward personal/team objectives ("Personal/Team Performance").

The awards provided under the Plan are not intended to be Qualified Performance-Based Awards. Terms used in the Plan with initial capital letters that are not defined in the Plan shall have the meanings assigned to them in the MIP. The terms of the Plan and awards made under the Plan are subject to the terms and provisions of the MIP.

**II. DEFINITIONS**

**Base Compensation:**

The Participant's annual base salary in effect on September 30 of the Plan Year

**Plan Year:**

2016, which is the fiscal year for which Financial Performance and Personal/Team Performance, and any Plan awards, will be calculated

**Business Unit Performance:**

The Compensation Committee has delegated authority to the Company's Executive Staff to designate the Company's business units/subsidiaries (and their eligible employees) that are eligible for participation in the Plan for the Plan Year. Each business unit has defined Financial Performance measures, which have in turn been approved by the Compensation Committee and/or the Executive Staff. For each of these Financial Performance measures, a minimum goal, target goal and maximum goal will be established. Plan awards include a Financial Performance component based on Company Performance alone, or Company Performance and/or Business Unit Performance.

**Company Performance:**

The Company performance portion of the Financial Performance component of Plan awards will consist of an Operating Profit measure (weighted at 85%) and a Growth in Value-added Sales measure (weighted at 15%).

**Operating Profit ("OP"):**

Operating Profit is defined as profit or loss, before interest and taxes, and for domestic and international operations; OP will include accrued performance or incentive compensation. Any adjustment to exclude the effect of any extraordinary, unusual or non-reoccurring items will be subject to review and approval by the Compensation Committee.

**Growth in Value-added Sales ("VAS"):**

Growth in Value-added Sales is defined as the percent increase in VAS for the Plan Year over the prior year. VAS is the amount equal to (1) the Company's sales for the Plan Year minus (2) the aggregate cost to the Company for the Plan Year of gold, silver, platinum, palladium and copper. The Compensation Committee will approve a minimum goal, target goal and maximum goal for this VAS measure.

**Working Capital (WC) as a Percent of Sales**

WC as a percent of Sales is an annual measurement of the average working capital (using quarter end balances – five points) divided by annual sales. Working capital is defined as third-party trade accounts receivable plus net LIFO inventory less trade accounts payable.

**Other Metrics:**

From time to time, other metrics may be adopted that are aligned with a business unit's strategy and market challenges. These metrics will be defined and tracked by the corporate accounting department, subject to approval by the Executive Staff.

**Personal/Team Performance:**

An assessment is made of an individual's achievements and his/her contributions to work/project teams during the Plan Year. This assessment is expressed as a percentage of base compensation. The Personal/Team Performance component is distinct from the Financial Performance component.

**Performance Objectives:**

"Performance Objectives" shall mean the measurable performance objective or objectives established for Participants under the Plan for the Plan Year. The Compensation Committee may provide for such adjustments in the Performance Objectives or their evaluation as it may deem necessary or appropriate for purposes of administering this Plan.

**III. PARTICIPATION**

At the beginning of the Plan Year, the Executive Staff will, based on delegated authority from the Compensation Committee, identify exempt, salaried employees whose responsibilities affect progress on critical issues facing the Company, and those employees will participate in the Plan for the Plan Year. Those individuals selected by the Executive Staff will be notified of their participation in the Plan, their performance compensation grade, performance compensation opportunity, and applicable business unit designation.

Following the beginning of the Plan Year, the Executive Staff may admit new hires or individuals who are promoted or assigned additional and significant responsibilities to also participate in the Plan for the Plan Year. The Executive Staff may also alter performance compensation grade assignments to reflect changed responsibilities of participants during the Plan Year.

An employee who replaces or otherwise assumes the job functions or role of another employee does not automatically assume the Plan participation characteristics that had applied to such other employee. Rather, participation by the new or replacing employee must be individually considered and approved by the Executive Staff.

Participants who are newly employed before April 1 of the Plan Year are eligible for full participation in the Plan for such Plan Year. Participants who are newly employed on or after April 1 of the Plan Year and before July 1 of the Plan Year are eligible for half of any Plan award available based on Personal/Team Performance and Financial Performance for the Plan Year.

Plan awards for Participants who transfer from the Exempt Salaried Performance Compensation Plan to the Plan for purposes of the Plan Year will be prorated to the beginning of the month following the employee's transfer to the Plan. The transferred employee's eligibility under the Exempt Salaried Performance Compensation Plan will cease for the Plan Year.

Changes in performance compensation grade assignments will result in prorated participation for Plan awards.

The eligibility of employees hired or with changed job responsibilities after June 30 of the Plan Year will not be considered for participation in the Plan until a possible, subsequent Plan Year.

Normally, employees who participate in any other annual incentive, commission or performance compensation plan of the Company or as a subsidiary are not eligible. The Executive Staff may consider prorated participation in the Plan for the Plan Year under special circumstances.

With two exceptions, Participants must be employed on the day award payments are issued in order to be eligible for any Plan award. For a Participant who becomes eligible for and who elects a severance option under the Chronic Beryllium Disease Policy as amended, any award under the Plan will be prorated to the beginning of the month after the employee exercises the severance option. The second exception pertains to either the death of a Participant or the retirement (at age 65, or at age 55 or older with 10 years of service) of a Participant, in which case, any Plan award will be prorated to the beginning of the month following the employee's death or the employee's retirement date, as applicable. In no event will a prorated Plan award be earned where the proration percent is less than a third (1/3)..

Participants who have been on a leave of absence in excess of 13 weeks during the Plan Year will have their Plan award reduced on a pro-rata basis to reflect their actual contribution.

#### **IV. PLAN AWARD OPPORTUNITY FOR FINANCIAL PERFORMANCE COMPONENT**

The Compensation Committee (or the Executive Staff) will establish minimum goals, target goals and maximum goals for each Financial Performance component of a Plan award opportunity. The Executive Staff will assign Participants to a specific business unit/subsidiary for the Financial Performance component of Plan awards.

Below is a summary of the Plan award target opportunities (as percentage of Base Compensation) for the Plan Year:

Grade	Financial Performance	Personal/Team Performance
D	20%	0-14%
E	10%	0-14%
EE	5%	0-7%

Plan award opportunities for Participants in Grades A, B and C will be individualized as determined by the Compensation Committee or the Executive Staff.

Unless the minimum level goal for Operating Profit has been met, no other Financial Performance component of Plan awards (Business Unit, Company, sub-unit, and/or other measurement), will result in an award greater than 100% of the target opportunity for that measure. Performance that reaches or exceeds the maximum goal of a measure will result in an award at 200 percent of target opportunity for that measure. Award amounts for levels of achievement between minimum and target goals, at target goals, and between target and maximum goals will be prorated according to the level of achievement.

The Financial Performance portion of awards will be prorated for transfers between units (or between business unit and Corporate) according to the length of service by months in each unit during the Plan Year.

#### **V. PLAN AWARD OPPORTUNITY FOR PERSONAL/TEAM PERFORMANCE COMPONENT**

An Operating Profit "threshold" may be established, which must be achieved in order to make available the award opportunity to recognize the Personal/Team performance component. If such threshold is established, meeting this threshold would result in a Personal/Team opportunity payout. This threshold can be different than the minimum Operating Profit level necessary to create a Financial Performance opportunity. No awards for Personal/Team performance will be paid if a threshold is established and is not met.

The total pool for Personal/Team performance component of Plan awards for participants in Grades A through E would typically average 10 percent of the Base Compensation of participants, if the OP meets or exceeds target. The total pool for Personal/Team performance component for participants in Grade EE would typically average 5 percent of the Base Compensation of participants, if the OP meets or exceeds target. Performance below target could result in the total pool being reduced to a lesser amount. The Business Unit Executive and the Executive Staff will decide allocation of the pool among eligible participants based on their performance throughout the Plan year relative to achieving established goals and objectives.

#### **VI. PAYMENT**

Distribution of any payouts for Plan awards earned under the Plan to Participants will be on or before March 15 of the year following the Plan Year.

**VIII. GENERAL PROVISIONS**

The Executive Staff has authority to make administrative decisions regarding the Plan.

The Company's Board of Directors, through the Compensation Committee, shall have final and conclusive authority for interpretation, application, and possible modification of this Plan or established targets. The Board of Directors, through the Compensation Committee, reserves the right to amend or terminate the Plan at any time. Subject to the preceding sentences, any determination by the Company's independent accountants shall be final and conclusive as it relates to the calculation of financial results.

This Plan is not a contract of employment.



[APPROVED February 3, 2016 RSU STOCK-SETTLED; DOUBLE-TRIGGER]

**MATERION CORPORATION**

**Restricted Stock Units Agreement (Stock-Settled)**

WHEREAS, \_\_\_\_\_, (the "Grantee") is an employee of Materion Corporation, an Ohio corporation (the "Corporation") or a Subsidiary; and

WHEREAS, the execution of an agreement in the form hereof (this "Agreement") has been authorized by a resolution of the Compensation Committee (the "Committee") of the Board of Directors of the Corporation that was duly adopted on \_\_\_\_\_, 2016.

NOW, THEREFORE, pursuant to the Materion Corporation 2006 Stock Incentive Plan (As Amended and Restated as of May 7, 2014) (the "Plan"), the Corporation hereby confirms to the Grantee the grant, effective on \_\_\_\_\_, 2016 (the "Date of Grant"), of \_\_\_\_\_ Restricted Stock Units (as defined in the Plan) ("RSUs"), subject to the terms and conditions of the Plan and the following additional terms, conditions, limitations and restrictions:

Article I

DEFINITIONS

All terms used herein with initial capital letters that are defined in the Plan shall have the meanings assigned to them in the Plan when used herein with initial capital letters.

ARTICLE II

CERTAIN TERMS OF RESTRICTED STOCK UNITS

1. RSUs Not Transferable. The RSUs covered by the Agreement shall not be transferable other than by will or pursuant to the laws of descent and distribution prior to payment.

2. Vesting and Payment of RSUs.

(a) General. Subject to the provisions of Sections 2(b), 2(c) and 2(d) ~~and 2(e)~~ of this Article II, all of the RSUs covered by this Agreement shall become nonforfeitable if the Grantee shall have remained in the continuous employ of the Corporation or a Subsidiary for three years from the Date of Grant and shall be payable by the issuance of Common Shares to the Grantee on such date.

(b) Death or Disability. Notwithstanding the provisions of Section 2(a) of this Article II, all of the RSUs covered by this Agreement shall immediately become nonforfeitable and shall be immediately payable if the Grantee dies or becomes permanently disabled (as hereinafter defined) while in the employ of the Corporation or a Subsidiary during the three-year period from the Date of Grant. The Grantee shall be considered to have become permanently disabled if the Grantee has suffered a permanent disability within the meaning of the long-term disability plan in effect for, or applicable to, the Grantee and is "disabled" within the meaning of Section 409A(a)(2)(C) of the Code.

(c) Retirement.

(i) If the Grantee should Retire (as hereinafter defined) after the Date of Grant, the RSUs covered by this Agreement shall be forfeited, unless the Committee determines that, notwithstanding the requirement of continuous employment contained in Section 2(a) of this Article II, such RSUs will continue to vest and become payable three years from the Date of Grant, provided that if the Committee makes such a determination, the RSUs will also be paid on any earlier date when payment would

otherwise have been made under Section 2 of this Article II if the Grantee had continued employment through such date.

(ii) "Retire" shall mean the Grantee's retirement from the Corporation or a Subsidiary at (A) age 65 or older or (B) at age 55 or older with 10 or more years of continuous employment with the Corporation or a Subsidiary.

(d) Change in Control.

(i) Notwithstanding Section 2(a) of this Article II above, the RSUs granted hereby shall immediately become nonforfeitable and payable if at any time during the employment of the Grantee and prior to the end of the three-year vesting period:

(A) a Change in Control shall occur after the Date of Grant; and

(B) within two years following the Change in Control the Grantee's employment with the Corporation or a Subsidiary is terminated by the Grantee as a Termination for Good Cause (as defined in Section 2(f) of this Article) or the Grantee is terminated by the Corporation other than as a Termination for Cause (as defined in Section 2(e) of this Article II). If the Change in Control constitutes a "change in control" for purposes of Section 409A of the Code and if the Grantee incurs a "separation from service" for purposes of Section 409A of the Code within two years following such Change in Control, payment for any RSUs which are no longer subject to a substantial risk of forfeiture will be made upon the Grantee's separation from service, provided however, that if at such time the Grantee is a "specified employee" as determined pursuant to the identification methodology adopted by the Corporation in compliance with Section 409A of the Code, the date of payment for the RSUs shall be the first business day of the seventh month after the date of the Grantee's separation from service (or if earlier the Grantee's death). If payment is not made pursuant to the preceding sentence because the Change in Control does not constitute a "change in control" for purposes of Section 409A of the Code, then payment shall be made at the earliest date that payment otherwise would have been made under Section 2 of this Article II if no Change in Control had occurred, assuming continued employment through such date.

(ii) Notwithstanding anything in this Section 2(d) to the contrary, in connection with a Business Combination, the result of which is that the Outstanding Company Voting Securities are exchanged for or become exchangeable for securities of another entity, cash or a combination thereof, if the entity resulting from such Business Combination does not assume the RSUs evidenced hereby and the Corporation's obligations hereunder, or replace the RSUs evidenced hereby with a substantially equivalent security of the entity resulting from such Business Combination, then the RSUs evidenced hereby shall become nonforfeitable as of immediately prior to such Business Combination. Payment for any RSUs which are no longer subject to a substantial risk of forfeiture as determined under the original terms of this award will be upon the Change in Control; provided, however, if the Change in Control does not constitute a "change in control" for purposes of Section 409A(a)(2)(A)(v) of the Code, then payment for the RSUs will be made upon the date that payment otherwise would have been made under Section 2 of this Article II if no Change in Control had occurred, assuming continued employment through such date.

(e) Retirement.

(i) If the Grantee should Retire (as hereinafter defined) after the Date of Grant, notwithstanding the requirement of

continuous employment contained in Section 2(a) of this Article II, the RSUs covered by this Agreement shall be forfeited, unless the Committee determines that such RSUs will continue to vest and become nonforfeitable three years from the Date of Grant.

(ii) "Retire" shall mean the Grantee's retirement from the Corporation or a Subsidiary at (A) age 65 or older or (B) at age 55 or older with 10 or more years of continuous employment with the Corporation or a Subsidiary.

(f) "Termination for Cause" means a termination of Grantee's employment by the Corporation for "Cause" (as defined in Section 7(f) of this Article II).

(g) "Termination for Good Cause" shall mean the Grantee's termination of the Grantee's employment with the Corporation or a Subsidiary as a result of the occurrence of any of the following:

(i) a change in the Grantee's principal location of employment that is greater than 50 miles from its location as of the date hereof without the Grantee's consent; provided, however, that the Grantee hereby acknowledges that the Grantee may be required to engage in travel in connection with the performance of the Grantee's duties hereunder and that such travel shall not constitute a change in the Grantee's principal location of employment for purposes hereof;

(ii) a material diminution in the Grantee's base compensation;

(iii) a change in the Grantee's position with the Corporation without the Grantee's consent such that there is a material diminution in the Grantee's authority, duties or responsibilities; or

(iv) any other action or inaction that constitutes a material breach by the Corporation of the agreement under which the Grantee provides services.

Notwithstanding the foregoing, the Grantee's termination of the Grantee's employment with the Corporation as a result of the occurrence of any of the foregoing shall not constitute a "Termination for Good Cause" unless (A) the Grantee gives the Corporation written notice of such occurrence within 90 days of such occurrence and such occurrence is not cured by the Corporation within 30 days of the date on which such written notice is received by the Corporation and (B) the Grantee actually terminates his or her employment with the Corporation prior to the 365th day following such occurrence.

3. Form and Time of Payment of RSUs. Except as otherwise provided for in Section 2 of Article III, payment for the RSUs shall be made in form of the Common Shares at the time the RSUs vest and become nonforfeitable or otherwise become payable in accordance with Section 2 of this Article II. To the extent that the Corporation is required to withhold federal, state, local or foreign taxes in connection with the delivery of Common Shares to the Grantee or any other person under this Agreement, the number of Common Shares to be delivered to the Grantee or such other person shall be reduced (based on the Market Value per Share) as of the date the RSUs are reduced) to provide for the taxes required to be withheld, with any fractional shares that would otherwise be delivered being rounded up to the next nearest whole share. The Committee may, at its discretion, adopt any alternative method of providing for taxes required to be withheld.

4. Forfeiture of RSUs. The RSUs shall be forfeited, except as otherwise provided in Section 2(b), 2(c) or 2(d) of this Article II above, if the Grantee ceases to be employed by the Corporation or a Subsidiary prior to three years from the Date of Grant.

5. Dividend Equivalents. From and after the Date of Grant and until the earlier of (a) the time when the RSUs vest and become nonforfeitable and payable in accordance with Section 2 of this Article II or (b) the time when the Grantee's right to receive Common Shares in payment of the RSUs is forfeited in accordance with Section 4 of this Article II, on the date that the Corporation pays a cash dividend

(if any) to holders of Common Shares generally, the Grantee shall be entitled to a deferred cash payment equal to the value of the product of (i) the dollar amount of the cash dividend paid per Common Share on such date and (ii) the total number of RSUs covered by this Agreement. Such dividend equivalents (if any) shall be paid in cash, and shall be subject to such other applicable terms and conditions (including payment or forfeitability) as the RSUs to which the dividend equivalents were credited.

6. Effect of Detrimental Activity. Notwithstanding anything herein to the contrary, if the Grantee, either during employment by the Corporation or a Subsidiary or within one year after termination of such employment, shall engage in any Detrimental Activity, (as hereinafter defined) and the Board shall so find, the Grantee shall:

(a) Forfeit all RSUs held by the Grantee.

(b) Return to the Corporation all Common Shares that the Grantee has not disposed of that were paid out pursuant to this Agreement within a period of one year prior to the date of the commencement of such Detrimental Activity.

(c) With respect to any Common Shares that the Grantee has disposed of that were paid out pursuant to this Agreement within a period of one year prior to the date of the commencement of such Detrimental Activity, pay to the Corporation in cash the value of such Common Shares on the date such Common Shares were paid out.

(d) To the extent that the amounts referred to above in Section 6(b) and 6(c) of this Article II are not paid to the Corporation, the Corporation may set off the amounts so payable to it against any amounts that may be owing from time to time by the Corporation or a Subsidiary to the Grantee, whether as wages, deferred compensation or vacation pay or in the form of any other benefit or for any other reason, except that no setoff shall be permitted against any amount that constitutes "deferred compensation" within the meaning of Section 409A of the Code.

7. For purposes of this Agreement, the term "Detrimental Activity" shall include:

(a) (II) Engaging in any activity in violation of the Section entitled "Competitive Activity; Confidentiality; Nonsolicitation" in the Severance Agreement between the Corporation and the Grantee, if such agreement is in effect at the date hereof, or in violation of any corresponding provision in any other agreement between the Corporation and the Grantee in effect on the date hereof providing for the payment of severance compensation; or

(ii) If no such severance agreement is in effect as of the date hereof or if a severance agreement does not contain a Section corresponding to "Competitive Activity; Confidentiality; Nonsolicitation":

(A) Competitive Activity During Employment. Competing with the Corporation anywhere within the United States during the term of the Grantee's employment, including, without limitation:

(I) entering into or engaging in any business which competes with the business of the Corporation;

(II) soliciting customers, business, patronage or orders for, or selling, any products or services in competition with, or for any business that competes with, the business of the Corporation;

(III) diverting, enticing or otherwise taking away any customers, business, patronage or orders of the Corporation or attempting to do so; or

(IV) promoting or assisting, financially or otherwise, any person, firm, association, partnership, corporation or other entity engaged in any business which competes with the business of the Corporation.

(B) Following Termination. For a period of one year following the Grantee's termination date:

(I) entering into or engaging in any business which competes with the Corporation's business within the Restricted Territory (as hereinafter defined);

(II) soliciting customers, business, patronage or orders for, or selling, any products or services in competition with, or for any business, wherever located, that competes with, the Corporation's business within the Restricted Territory;

(III) diverting, enticing or otherwise taking away any customers, business, patronage or orders of the Corporation within the Restricted Territory, or attempting to do so; or

(IV) promoting or assisting, financially or otherwise, any person, firm, association, partnership, corporation or other entity engaged in any business which competes with the Corporation's business within the Restricted Territory.

For the purposes of Sections 7(a)(ii)(A) and (B) above, inclusive, but without limitation thereof, the Grantee will be in violation thereof if the Grantee engages in any or all of the activities set forth therein directly as an individual on the Grantee's own account, or indirectly as a partner, joint venturer, employee, agent, salesperson, consultant, officer and/or director of any firm, association, partnership, corporation or other entity, or as a stockholder of any corporation in which the Grantee or the Grantee's spouse, child or parent owns, directly or indirectly, individually or in the aggregate, more than five percent (5%) of the outstanding stock.

(C) "The Corporation." For the purposes of this Section 7(a)(ii) of Article II, the "Corporation" shall include any and all direct and indirect subsidiaries, parents, and affiliated, or related companies of the Corporation for which the Grantee worked or had responsibility at the time of termination of the Grantee's employment and at any time during the two year period prior to such termination.

(D) "The Corporation's Business." For the purposes of this Section 7 of Article II inclusive, the Corporation's business is defined to be the integrated production of high performance advanced engineered materials used in a variety of electrical, electronic, thermal and structural applications serving the consumer electronics, industrial components and commercial aerospace, defense and science, medical, energy, automotive electronics, telecommunications infrastructure and appliance markets, as further described in any and all manufacturing, marketing and sales manuals and materials of the Corporation as the same may be altered, amended, supplemented or otherwise changed from time to time, or of any other products or services substantially similar to or readily substitutable for any such described products and services.

(E) "Restricted Territory." For the purposes of Section 7(a)(ii)(B) of Article II, the Restricted Territory shall be defined as and limited to:

(I) the geographic area(s) within a one hundred mile radius of any and all of the Corporation's location(s) in, to, or for which the Grantee worked, to which the Grantee was assigned or had any responsibility (either direct or supervisory) at the time of termination of the Grantee's employment and at any time during the two-year period prior to such termination; and

(II) all of the specific customer accounts, whether within or outside of the geographic area described in (I) above, with which the Grantee had any contact or for which the Grantee had any responsibility (either direct or

supervisory) at the time of termination of the Grantee's employment and at any time during the two-year period prior to such termination.

(F) Extension. If it shall be judicially determined that the Grantee has violated any of the Grantee's obligations under Section 7(a)(ii)(B) of Article II, then the period applicable to each obligation that the Grantee shall have been determined to have violated shall automatically be extended by a period of time equal in length to the period during which such violation(s) occurred.

(b) Non-Solicitation. Except as otherwise provided in Section 7(a)(i) of Article II, Detrimental Activity shall also include directly or indirectly at any time soliciting or inducing or attempting to solicit or induce any employee(s), sales representative(s), agent(s) or consultant(s) of the Corporation and/or of its parents, or its other subsidiaries or affiliated or related companies to terminate their employment, representation or other association with the Corporation and/or its parent or its other subsidiary or affiliated or related companies.

(c) Further Covenants. Except as otherwise provided in Section 7(a)(i) of Article II, Detrimental Activity shall also include:

(i) directly or indirectly, at any time during or after the Grantee's employment with the Corporation, disclosing, furnishing, disseminating, making available or, except in the course of performing the Grantee's duties of employment, using any trade secrets or confidential business and technical information of the Corporation or its customers or vendors, including without limitation as to when or how the Grantee may have acquired such information. Such confidential information shall include, without limitation, the Corporation's unique selling, manufacturing and servicing methods and business techniques, training, service and business manuals, promotional materials, training courses and other training and instructional materials, vendor and product information, customer and prospective customer lists, other customer and prospective customer information and other business information. The Grantee specifically acknowledges that all such confidential information, whether reduced to writing, maintained on any form of electronic media, or maintained in the Grantee's mind or memory and whether compiled by the Corporation, and/or the Grantee, derives independent economic value from not being readily known to or ascertainable by proper means by others who can obtain economic value from its disclosure or use, that reasonable efforts have been made by the Corporation to maintain the secrecy of such information, that such information is the sole property of the Corporation and that any retention and use of such information by the Grantee during the Grantee's employment with the Corporation (except in the course of performing the Grantee's duties and obligations to the Corporation) or after the termination of the Grantee's employment shall constitute a misappropriation of the Corporation's trade secrets.

(ii) Upon termination of the Grantee's employment with the Corporation, for any reason, the Grantee's failure to return to the Corporation, in good condition, all property of the Corporation, including without limitation, the originals and all copies of any materials which contain, reflect, summarize, describe, analyze or refer or relate to any items of information listed in Section 7(c)(i) of Article II of this Agreement.

(d) Discoveries and Inventions. Except as otherwise provided in Section 7(a)(i) of Article II, Detrimental Activity shall also include the failure or refusal of the Grantee to assign to the Corporation, its successors, assigns or nominees, all of the Grantee's rights to any discoveries, inventions and improvements, whether patentable or not, made, conceived or suggested, either solely or jointly with others, by the Grantee while in the Corporation's employ, whether in the course of the Grantee's employment with the use of the Corporation's time, material or facilities or that is in any way within or related to the existing or contemplated scope of the Corporation's

business. Any discovery, invention or improvement relating to any subject matter with which the Corporation was concerned during the Grantee's employment and made, conceived or suggested by the Grantee, either solely or jointly with others, within one year following termination of the Grantee's employment under this Agreement or any successor agreements shall be irrebuttably presumed to have been so made, conceived or suggested in the course of such employment with the use of the Corporation's time, materials or facilities. Upon request by the Corporation with respect to any such discoveries, inventions or improvements, the Grantee will execute and deliver to the Corporation, at any time during or after the Grantee's employment, all appropriate documents for use in applying for, obtaining and maintaining such domestic and foreign patents as the Corporation may desire, and all proper assignments therefor, when so requested, at the expense of the Corporation, but without further or additional consideration.

(e) Work Made For Hire. Except as otherwise provided in Section 7(a)(i) of Article II, Detrimental Activity shall also include violation of the Corporation's rights in any or all work papers, reports, documentation, drawings, photographs, negatives, tapes and masters therefore, prototypes and other materials (hereinafter, "items"), including without limitation, any and all such items generated and maintained on any form of electronic media, generated by Grantee during the Grantee's employment with the Corporation. The Grantee acknowledges that, to the extent permitted by law, all such items shall be considered a "work made for hire" and that ownership of any and all copyrights in any and all such items shall belong to the Corporation. The item will recognize the Corporation as the copyright owner, will contain all proper copyright notices, e.g., "(creation date) [Corporation's Name], All Rights Reserved," and will be in condition to be registered or otherwise placed in compliance with registration or other statutory requirements throughout the world.

(f) Termination for Cause. Except as otherwise provided in Section 8(a)(i) of Article II, Detrimental Activity shall also include activity that results in termination for Cause. For the purposes of this Section, "Cause" shall mean that, the Grantee shall have:

- (i) been convicted of a criminal violation involving fraud, embezzlement, theft or violation of federal antitrust statutes or federal securities laws in connection with his duties or in the course of his employment with the Corporation or any affiliate of the Corporation;
- (ii) committed intentional wrongful damage to property of the Corporation or any affiliate of the Corporation; or
- (iii) committed intentional wrongful disclosure of secret processes or confidential information of the Corporation or any affiliate of the Corporation;

and any such act shall have been demonstrably and materially harmful to the Corporation.

(g) Other Injurious Conduct. Detrimental Activity shall also include any action contributing to a restatement of the Corporation's financials if this award of RSUs to the Grantee is favorably affected by such restatement as provided under Section 10D of the Exchange Act and any applicable rules or regulations promulgated by the Securities and Exchange Commission or any national securities exchange or national securities association on which the Common Shares may be traded, and any other conduct or act determined to be injurious, detrimental or prejudicial to any significant interest of the Corporation or any subsidiary unless the Grantee acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the Corporation.

(h) Reasonableness. The Grantee acknowledges that the Grantee's obligations under this Section 7 of Article II are reasonable in the context of the nature of the Corporation's business and the competitive injuries likely to be sustained by the Corporation if the Grantee were to violate such obligations. The Grantee further acknowledges that this Agreement is made in

consideration of, and is adequately supported by the agreement of the Corporation to perform its obligations under this Agreement and by other consideration, which the Grantee acknowledges constitutes good, valuable and sufficient consideration.

### ARTICLE III

#### GENERAL PROVISIONS

1. Compliance with Law. The Corporation shall make reasonable efforts to comply with all applicable federal and state securities laws.
2. Dilution and Other Adjustments. The Committee shall make such adjustments in the RSUs covered by this Agreement as such Committee in its sole discretion, exercised in good faith, shall determine is equitably required to prevent dilution or enlargement of the rights of the Grantee that otherwise would result from (a) any stock dividend, stock split, combination of shares, recapitalization or other change in the capital structure of the Corporation, or (b) any merger, consolidation, spin-off, reorganization, partial or complete liquidation or other distribution of assets, or issuance of warrants or other rights to purchase securities, or (c) any other corporate transaction or event having an effect similar to any of the foregoing. In the event of any such transaction or event, the Committee shall provide in substitution for this award of RSUs such alternative consideration as it shall in good faith determine to be equitable under the circumstances and shall require in connection therewith the surrender of this award of RSUs so replaced.
3. Continuous Employment. For purposes of this Agreement, the continuous employment of the Grantee with the Corporation or a Subsidiary shall not be deemed to have been interrupted, and the Grantee shall not be deemed to have ceased to be an employee of the Corporation or a Subsidiary, by reason of the transfer of his employment among the Corporation and its Subsidiaries or a leave of absence approved by the Board.
4. No Employment Contract; Right to Terminate Employment. The grant of the RSUs to the Grantee is a voluntary, discretionary award being made on a one-time basis and it does not constitute a commitment to make any future awards. The grant of the RSUs and any payments made hereunder will not be considered salary or other compensation for purposes of any severance pay or similar allowance, except as otherwise required by law. Nothing in this Agreement will give the Grantee any right to continue employment with the Corporation or any Subsidiary, as the case may be, or interfere in any way with the right of the Corporation or a Subsidiary to terminate the employment of the Grantee at any time.
5. Relation to Other Benefits. Any economic or other benefit to the Grantee under this Agreement or the Plan shall not be taken into account in determining any benefits to which the Grantee may be entitled under any profit-sharing, retirement or other benefit or compensation plan maintained by the Corporation or a Subsidiary and shall not affect the amount of any life insurance coverage available to any beneficiary under any life insurance plan covering employees of the Corporation or a Subsidiary.
6. Information. Information about the Grantee and the Grantee's participation in the Plan may be collected, recorded and held, used and disclosed for any purpose related to the administration of the Plan. The Grantee understands that such processing of this information may need to be carried out by the Corporation and its Subsidiaries and by third party administrators whether such persons are located within the Grantee's country or elsewhere, including the United States of America. The Grantee consents to the processing of information relating to the Grantee and the Grantee's participation in the Plan in any one or more of the ways referred to above.
7. Amendments. Any amendment to the Plan shall be deemed to be an amendment to this Agreement to the extent that the amendment is applicable hereto; provided, however, that no amendment shall adversely affect the rights of the Grantee under this Agreement



without the Grantee's consent. Notwithstanding the foregoing, the limitation requiring the consent of a Grantee to certain amendments shall not apply to any amendment that is deemed necessary by the Corporation to ensure compliance with Section 409A of the Code.

8. Severability. In the event that one or more of the provisions of this Agreement shall be invalidated for any reason by a court of competent jurisdiction, any provision so invalidated shall be deemed to be separable from the other provisions hereof, and the remaining provisions hereof shall continue to be valid and fully enforceable.

9. Governing Law. This agreement is made under, and shall be construed in accordance with, the internal substantive laws of the State of Ohio.

10. Compliance with Section 409A of the Code. To the extent applicable, it is intended that this Agreement and the Plan comply with the provisions of Section 409A of the Code, so that the income inclusion provisions of Section 409A(a)(1) of the Code do not apply to the Grantee. This Agreement and the Plan shall be administered in a manner consistent with this intent. Reference to Section 409A of the Code is to Section 409A of the Internal Revenue Code of 1986, as amended, and will also include any regulations or any other formal guidance promulgated with respect to such Section by the U.S. Department of the Treasury or the Internal Revenue Service.

11. Relation to Severance Agreement. Section 2(d) of Article II hereof shall supersede the provisions of any Severance Agreement between the Grantee and the Corporation, in effect at the Date of Grant, providing for earlier vesting of the RSUs granted hereby in the event of a Change in Control.

The undersigned Grantee hereby accepts the award granted pursuant to this Agreement on the terms and conditions set forth herein.

Dated: \_\_\_\_

Grantee

Executed in the name of and on behalf of the Corporation at Mayfield Heights, Ohio as of this \_\_\_\_ day of \_\_\_\_\_, 2016.

MATERION CORPORATION

By \_\_\_\_

Vice President, Treasurer & Secretary

Michael C. Hasychak

[Approved February 22, 2016. 2016 Cash-Settled PRSUs]

## MATERION CORPORATION

### Performance-Based Restricted Stock Units Agreement

WHEREAS, \_\_\_\_\_ (the “Grantee”) is an employee of Materion Corporation, an Ohio corporation (the “Corporation”), or a Subsidiary; and

WHEREAS, the execution of an agreement in the form hereof (this “Agreement”) has been authorized by resolution of the Compensation Committee (the “Committee”) of the Board of Directors of the Corporation that was duly adopted on \_\_\_\_\_, 2016.

NOW, THEREFORE, pursuant to the Materion Corporation 2006 Stock Incentive Plan (As Amended and Restated as of May 7, 2014) (the “Plan”), and subject to the terms and conditions thereof and the terms and conditions hereinafter set forth, the Corporation hereby confirms to the Grantee the grant of (1) a targeted number of \_\_\_\_\_ performance-based Restricted Stock Units to be earned, if at all, on the basis of the achievement of the portion of the Management Objectives measured by ROIC goals during the Performance Period (as defined below) (the “ROIC PRSUs”) and (2) a targeted number of \_\_\_\_\_ performance-based Restricted Stock Units to be earned, if at all, on the basis of the achievement of the portion of the Management Objectives measured by RTSR goals during the Performance Period (the “RTSR PRSUs” and, together with the ROIC PRSUs, the “PRSUs”), effective on \_\_\_\_\_, 2016 (the “Date of Grant”). Subject to the attainment of the Management Objectives described in Section 3 of Article II of this Agreement and the Statement of Management Objectives as approved by the Compensation Committee with respect to the PRSUs on the Date of Grant (the “Statement of Management Objectives”), the Grantee may earn from 0% to 200% of the ROIC PRSUs and from 0% to 200% of the RTSR PRSUs.

## ARTICLE I

### DEFINITIONS

All terms used herein with initial capital letters that are defined in the Plan shall have the meanings assigned to them in the Plan, and the following additional terms, when used herein with initial capital letters, shall have the following meanings:

1. “Committee Determination Date” means the date following the end of the Performance Period on which the Committee determines the level of attainment of the Management Objectives for the Performance Period.
2. “Management Objectives” means the threshold, target and maximum goals established by the Committee for the Performance Period with respect to both ROIC and RTSR as described in the Statement of Management Objectives. No adjustment of the Management Objectives shall be permitted in respect of any PRSUs granted to the Participant if at the Date of Grant he or she is, or is determined by the Committee to be likely to become, a “covered employee” within the meaning of Section 162(m) of the Code (or any successor provision) if such adjustment would result in the loss of an otherwise available exemption under Section 162(m) of the Code.
3. “Performance Period” means the three-year period commencing January 1, 2016 and ending on December 31, 2018.
4. “Relative Total Shareholder Return” or “RTSR” has the meaning as set forth in the Statement of Management Objectives.
5. “Return on Invested Capital” or “ROIC” has the meaning as set forth in the Statement of Management Objectives.

## ARTICLE II

## CERTAIN TERMS OF PRSUS

1. Payment of PRSUs. The PRSUs covered by this Agreement shall become payable to the Grantee if they become nonforfeitable in accordance with Sections 3, 4, 5 or 6 of Article II.
2. PRSUs Non-Transferable. The PRSUs covered by this Agreement and any interest therein may be transferred or assigned only by will or pursuant to the laws of descent and distribution prior to payment therefor.
3. Normal Vesting of PRSUs. Subject to the terms and conditions of Sections 4, 5 and 6 of Article II, the Grantee's right to receive a cash payment for the PRSUs shall become nonforfeitable with respect to (a) 0% to 200% of the ROIC PRSUs on the basis of the achievement of the portion of the Management Objectives measured by ROIC goals during the Performance Period, and (b) from 0% to 200% of the RTSR PRSUs on the basis of the achievement of the portion of the Management Objectives measured by RTSR goals during the Performance Period, in each case as set forth in the Statement of Management Objectives. Except as otherwise provided herein, the Grantee's right to receive any cash payment for the PRSUs is contingent upon his or her remaining in the continuous employ of the Company or a Subsidiary until the end of the Performance Period.
4. Effect of Termination due to Death or Disability. Notwithstanding the provisions of Section 3 of Article II, 100% of the PRSUs shall immediately become nonforfeitable and payable at the time described in Section 8 of Article II if the Grantee dies or becomes permanently disabled while in the employ of the Corporation or a Subsidiary before the Committee Determination Date. The Grantee shall be considered to have become permanently disabled if the Grantee has suffered a permanent disability within the meaning of the long-term disability plan in effect for, or applicable to, the Grantee and is "disabled" within the meaning of Section 409A(a)(2)(C) of the Code.
5. Effect of Termination due to Retirement. Notwithstanding the continuous employment provision of Section 3 of Article II above, but subject to the provisions of Section 6 of Article II below, if the Grantee is at the time of such termination (a) at least age 65 or (b) at least age 55 and has completed at least 10 years of continuous employment with the Corporation or a Subsidiary, the PRSUs covered by this Agreement shall continue to be eligible to become nonforfeitable in accordance with Section 3 of this Article (and payable in accordance with Section 8 of Article II) as if the Grantee continued to be employed until the end of the Performance Period.
6. Change in Control. Notwithstanding Sections 3 and 5 of Article II above, the following alternative nonforfeitability provisions will apply to the PRSUs in the event of a Change in Control occurring after the Date of Grant and prior to the PRSUs becoming nonforfeitable in accordance with Section 3 of Article II:
  - (a) Upon the Change in Control, 100% of the PRSUs shall become nonforfeitable and payable in accordance with Section 8 of Article II, except to the extent that an award meeting the requirements of Section 6(b) of Article II (a "Replacement Award") is provided to the Grantee in accordance with Section 6(b) of Article II to replace or adjust the award of PRSUs covered by this Agreement (the "Replaced Award").
  - (b) For purposes of this Agreement, a "Replacement Award" means an award (i) of the same type ( *e.g.* , performance-based restricted stock units) as the Replaced Award, (ii) that has a value at least equal to the value of the Replaced Award, (iii) that relates to publicly traded equity securities of the Corporation or its successor in the Change in Control or another entity that is affiliated with the Corporation or its successor following the Change in Control, (iv) if the Grantee holding the Replaced Award is subject to U.S. federal income tax under the Code, the tax consequences of which to such Grantee under the Code are not less favorable to such Grantee than the tax consequences of the Replaced Award,

and (v) the other terms and conditions of which are not less favorable to the Grantee holding the Replaced Award than the terms and conditions of the Replaced Award (including the provisions that would apply in the event of a subsequent Change in Control). A Replacement Award may be granted only to the extent it does not result in the Replaced Award or Replacement Award failing to comply with or be exempt from Section 409A of the Code. Without limiting the generality of the foregoing, the Replacement Award may take the form of a continuation of the Replaced Award if the requirements of the two preceding sentences are satisfied. The determination of whether the conditions of this Section 6(b) of Article II are satisfied will be made by the Committee, as constituted immediately before the Change in Control, in its sole discretion.

(c) If, upon receiving a Replacement Award, the Grantee's employment with the Corporation or a Subsidiary (or any of their successors) (as applicable, the "Successor") is terminated by the Grantee as a Termination for Good Cause or if the Grantee is terminated by the Successor other than as a Termination for Cause within a period of two years after the Change in Control, 100% of the Replacement Award will become nonforfeitable and payable in accordance with Section 8 of Article II with respect to the performance-based restricted stock units covered thereby.

(d) "Termination for Cause" means a termination of Grantee's employment by the Successor for "Cause" (as defined in Section 10(f) of Article II).

(e) "Termination for Good Cause" shall mean the Grantee's termination of the Grantee's employment with the Successor as a result of the occurrence of any of the following:

(i) a change in the Grantee's principal location of employment that is greater than 50 miles from such location as of the date of this Agreement without the Grantee's consent; provided, however, that the Grantee hereby acknowledges that the Grantee may be required to engage in travel in connection with the performance of the Grantee's duties hereunder and that such travel shall not constitute a change in the Grantee's principal location of employment for purposes hereof;

(ii) a material diminution in the Grantee's base compensation;

(iii) a change in the Grantee's position with the Successor without the Grantee's consent such that there is a material diminution in the Grantee's authority, duties or responsibilities; or

(iv) any other action or inaction that constitutes a material breach by the Successor of the agreement, if any, under which the Grantee provides services to the Successor or its subsidiaries.

Notwithstanding the foregoing, the Grantee's termination of the Grantee's employment with the Successor as a result of the occurrence of any of the foregoing shall not constitute a "Termination for Good Cause" unless (A) the Grantee gives the Successor written notice of such occurrence within 90 days of such occurrence and such occurrence is not cured by the Successor within 30 days of the date on which such written notice is received by the Successor and (B) the Grantee actually terminates his or her employment with the Successor prior to the 365th day following such occurrence.

(f) If a Replacement Award is provided, notwithstanding anything in this Agreement to the contrary, any outstanding PRSUs which at the time of the Change in Control are not subject to a "substantial risk of forfeiture" (within the meaning of Section 409A of the Code) will be deemed to be nonforfeitable at the time of such Change in Control and will be paid as provided for in Section 8(b) of Article II.

7. Forfeiture of PRSUs. The PRSUs shall be forfeited to the extent they fail to become nonforfeitable as of the Committee Determination Date and, except as otherwise provided in Sections 4, 5 or 6 of Article II, if the Grantee ceases to be employed by the Corporation or a Subsidiary at

any time prior to such PRSUs becoming nonforfeitable, or to the extent they are forfeited as provided in Section 9 of Article II.

8. Form and Time of Payment of PRSUs.

(a) General. Except as otherwise provided for in Section 2 of Article III, and subject to Section 7 and Section 8(b) of Article II, payment for the PRSUs that have become nonforfeitable in accordance with Sections 3, 4, 5 or 6 of Article II shall be made in form of cash between January 1, 2019 and March 15, 2019. The cash payment will be equal to the Market Value per Share on the date the PRSUs become nonforfeitable times the number of such PRSUs plus any dividend equivalents accrued on such PRSUs since the Date of Grant (as provided below in Section 11 of this Article II). Payments will be made in local currency, less applicable taxes.

(b) Alternative Payment Events. Notwithstanding Section 8(a) of Article II, and except as otherwise provided for in Section 2 of Article III, to the extent that PRSUs have become nonforfeitable, then the cash payment for the PRSUs will be made on an earlier date as follows:

(i) Death. To the extent that PRSUs are nonforfeitable on the date of Grantee's death, payment for the PRSUs will be made on the date of Grantee's death;

(ii) Disability. To the extent that PRSUs are nonforfeitable on the date the Grantee becomes "disabled" within the meaning of Section 409A(a)(2)(C) of the Code, payment for the PRSUs will be made on the date the Grantee becomes disabled;

(iii) Separation from Service. To the extent that PRSUs are nonforfeitable on the date of Grantee's "separation from service" (determined in accordance with Section 409A of the Code), payment for the PRSUs will be made on the date of Grantee's "separation from service"; provided, however, that if the Grantee on the date of separation from service is a "specified employee" (within the meaning of Section 409A of the Code determined using the identification methodology selected by the Company from time to time), payment for the PRSUs will be made on the first day of the seventh month after the date of Grantee's separation from service or, if earlier, the date of Grantee's death; and

(iv) Change of Control. To the extent that PRSUs are nonforfeitable on the date of a Change in Control, payment for the PRSUs will be made on the date of the Change of Control; provided, however, that if such Change in Control would not qualify as a permissible date of distribution under Section 409A(a)(2)(A) of the Code, and the regulations thereunder, and where Section 409A of the Code applies to such distribution, payment will be made on the date that would have otherwise applied pursuant to Section 8.

9. Effect of Detrimental Activity. Notwithstanding anything herein to the contrary (other than Section 11 of Article III), if the Grantee, either during employment by the Corporation or a Subsidiary or within one year after termination of such employment, shall engage in any Detrimental Activity (as defined in Section 10 below) and the Board shall so find, then the Grantee shall, upon notice of such finding:

(a) Forfeit all PRSUs held by the Grantee.

(b) With respect to any PRSUs that became nonforfeitable and for which payment was made under this Agreement, pay to the Corporation in cash an amount equal to the payment Grantee received for such PRSUs.

(c) To the extent that such amounts are not paid to the Corporation, the Corporation may, to the extent permitted by law, set off the amounts so payable to it against any amounts that may be owing from time to time by the Corporation or a Subsidiary to the Grantee, whether as wages, deferred compensation or vacation pay or in the form of any other benefit or for any other reason, except that no such set-off shall be

permitted against any amount that constitutes “deferred compensation” within the meaning of Section 409A of the Code.

10. Definition of Detrimental Activity. For purposes of this Agreement, the term “Detrimental Activity” shall include:

(a) (1) Engaging in any activity in violation of the section entitled “Competitive Activity; Confidentiality; Nonsolicitation” in the Severance Agreement between the Corporation and the Grantee, if any such agreement is in effect on the date of this Agreement, or in violation of any corresponding provision in any other agreement between the Corporation and the Grantee in effect on the date of this Agreement providing for the payment of severance compensation; or

(v) If no such severance agreement is in effect as of the date of this Agreement, or if such severance agreement does not contain a section corresponding to “Competitive Activity; Confidentiality; Nonsolicitation”:

A. Competitive Activity During Employment. Competing with the Corporation anywhere within the United States during the term of the Grantee’s employment, including, without limitation:

- (1) entering into or engaging in any business which competes with the business of the Corporation;
- (2) soliciting customers, business, patronage or orders for, or selling, any products or services in competition with, or for any business that competes with, the business of the Corporation;
- (3) diverting, enticing or otherwise taking away any customers, business, patronage or orders of the Corporation or attempting to do so; or
- (4) promoting or assisting, financially or otherwise, any person, firm, association, partnership, corporation or other entity engaged in any business which competes with the business of the Corporation.

B. Following Termination. For a period of one year following the Grantee’s termination date:

- (1) entering into or engaging in any business which competes with the Corporation’s business within the Restricted Territory (as hereinafter defined);
- (2) soliciting customers, business, patronage or orders for, or selling, any products or services in competition with, or for any business, wherever located, that competes with, the Corporation’s business within the Restricted Territory;
- (3) diverting, enticing or otherwise taking away any customers, business, patronage or orders of the Corporation within the Restricted Territory, or attempting to do so; or
- (4) promoting or assisting, financially or otherwise, any person, firm, association, partnership, corporation or other entity engaged in any business which competes with the Corporation’s business within the Restricted Territory.

For the purposes of Sections 10(a)(ii)(A) and (B) above, inclusive, but without limitation thereof, the Grantee will be in violation thereof if the Grantee engages in any or all of the activities set forth therein directly as an individual on the Grantee’s own account, or indirectly as a partner, joint venturer, employee, agent, salesperson, consultant, officer and/or director of any firm, association, partnership, corporation or other entity, or as a stockholder of any corporation in which the Grantee or the Grantee’s spouse, child or parent owns, directly or indirectly, individually or in the aggregate, more than five percent (5%) of the outstanding stock.

C. The “Corporation”. For the purposes of this Section 10(a)(ii) of Article II, the “Corporation” shall include any and all direct

and indirect subsidiaries, parents, and affiliated, or related companies of the Corporation for which the Grantee worked or had responsibility at the time of termination of the Grantee's employment and at any time during the two-year period prior to such termination.

- D. The "Corporation's Business." For the purposes of this Section 10 of Article II inclusive, the Corporation's business is defined to be the integrated production of high performance advanced engineered materials used in a variety of electrical, electronic, thermal and structural applications serving the consumer electronics, industrial components and commercial aerospace, defense and science, medical, energy, automotive electronics, telecommunications infrastructure and appliance markets, as further described in any and all manufacturing, marketing and sales manuals and materials of the Corporation as the same may be altered, amended, supplemented or otherwise changed from time to time, or of any other products or services substantially similar to or readily substitutable for any such described products and services.
- E. "Restricted Territory." For the purposes of Section 10(a)(ii)(B) of Article II, the "Restricted Territory" shall be defined as and limited to:
- (1) the geographic area(s) within a one hundred mile radius of any and all Corporation location(s) in, to, or for which the Grantee worked, to which the Grantee was assigned or had any responsibility (either direct or supervisory) at the time of termination of the Grantee's employment and at any time during the two-year period prior to such termination; and
  - (2) all of the specific customer accounts, whether within or outside of the geographic area described in (1) above, with which the Grantee had any contact or for which the Grantee had any responsibility (either direct or supervisory) at the time of termination of the Grantee's employment and at any time during the two-year period prior to such termination.
- F. "Extension." If it shall be judicially determined that the Grantee has violated any of the Grantee's obligations under Section 10(a)(ii)(B) of Article II of this Agreement, then the period applicable to each obligation that the Grantee shall have been determined to have violated shall automatically be extended by a period of time equal in length to the period during which such violation(s) occurred.
- (b) Non-Solicitation. Except as otherwise provided in Section 10(a)(i) of Article II, Detrimental Activity shall also include directly or indirectly at any time soliciting or inducing or attempting to solicit or induce any employee(s), sales representative(s), agent(s) or consultant(s) of the Corporation and/or of its parents, or its other subsidiaries or affiliated or related companies to terminate their employment, representation or other association with the Corporation and/or its parent or its other subsidiary or affiliated or related companies.
- (c) Further Covenants. Except as otherwise provided in Section 10(a)(i) of Article II, Detrimental Activity shall also include:
- (i) directly or indirectly, at any time during or after the Grantee's employment with the Corporation, disclosing, furnishing, disseminating, making available or, except in the course of performing the Grantee's duties of employment, using any trade secrets or confidential business and technical information of the Corporation or its customers or vendors, including without limitation as to when or how the Grantee may have acquired such information. Such confidential information shall include, without limitation, the Corporation's unique selling, manufacturing and servicing methods and business techniques, training, service and business manuals, promotional materials, training courses and other training and instructional materials, vendor and product information, customer and

prospective customer lists, other customer and prospective customer information and other business information. The Grantee specifically acknowledges that all such confidential information, whether reduced to writing, maintained on any form of electronic media, or maintained in the Grantee's mind or memory and whether compiled by the Corporation, and/or the Grantee, derives independent economic value from not being readily known to or ascertainable by proper means by others who can obtain economic value from its disclosure or use, that reasonable efforts have been made by the Corporation to maintain the secrecy of such information, that such information is the sole property of the Corporation and that any retention and use of such information by the Grantee during the Grantee's employment with the Corporation (except in the course of performing the Grantee's duties and obligations to the Corporation) or after the termination of the Grantee's employment shall constitute a misappropriation of the Corporation's trade secrets.

(ii) Upon termination of the Grantee's employment with the Corporation, for any reason, the Grantee's failure to return to the Corporation, in good condition, all property of the Corporation, including without limitation, the originals and all copies of any materials which contain, reflect, summarize, describe, analyze or refer or relate to any items of information listed in Section 10(c)(i) of Article II.

(d) Discoveries and Inventions. Except as otherwise provided in Section 10(a)(i) of Article II, Detrimental Activity shall also include the failure or refusal of the Grantee to assign to the Corporation, its successors, assigns or nominees, all of the Grantee's rights to any discoveries, inventions and improvements, whether patentable or not, made, conceived or suggested, either solely or jointly with others, by the Grantee while in the Corporation's employ, whether in the course of the Grantee's employment with the use of the Corporation's time, material or facilities or that is in any way within or related to the existing or contemplated scope of the Corporation's business. Any discovery, invention or improvement relating to any subject matter with which the Corporation was concerned during the Grantee's employment and made, conceived or suggested by the Grantee, either solely or jointly with others, within one year following termination of the Grantee's employment under this Agreement or any successor agreements shall be irrebuttably presumed to have been so made, conceived or suggested in the course of such employment with the use of the Corporation's time, materials or facilities. Upon request by the Corporation with respect to any such discoveries, inventions or improvements, the Grantee will execute and deliver to the Corporation, at any time during or after the Grantee's employment, all appropriate documents for use in applying for, obtaining and maintaining such domestic and foreign patents as the Corporation may desire, and all proper assignments therefor, when so requested, at the expense of the Corporation, but without further or additional consideration.

(e) Work Made For Hire. Except as otherwise provided in Section 10(a)(i) of Article II, Detrimental Activity shall also include violation of the Corporation's rights in any or all work papers, reports, documentation, drawings, photographs, negatives, tapes and masters therefor, prototypes and other materials (hereinafter, "items"), including without limitation, any and all such items generated and maintained on any form of electronic media, generated by Grantee during the Grantee's employment with the Corporation. The Grantee acknowledges that, to the extent permitted by law, all such items shall be considered a "work made for hire" and that ownership of any and all copyrights in any and all such items shall belong to the Corporation. The item will recognize the Corporation as the copyright owner, will contain all proper copyright notices, e.g. , "(creation date) [Corporation Name], All Rights Reserved," and will be in condition to be registered or otherwise placed in compliance with registration or other statutory requirements throughout the world.



(f) Termination for Cause. Except as otherwise provided in Section 10(a)(i) of Agreement, Detrimental Activity shall also include activity that results in termination for Cause. For the purposes of this Section 10, “Cause” shall mean that, the Grantee shall have:

(i) been convicted of a criminal violation involving fraud, embezzlement, theft or violation of federal antitrust statutes or federal securities laws in connection with his duties or in the course of his employment with the Corporation or any affiliate of the Corporation;

(ii) committed intentional wrongful damage to property of the Corporation or any affiliate of the Corporation; or

(iii) committed intentional wrongful disclosure of secret processes or confidential information of the Corporation or any affiliate of the Corporation;

and any such act shall have been demonstrably and materially harmful to the Corporation.

(g) Other Injurious Conduct. Detrimental Activity shall also include any other conduct or act determined to be injurious, detrimental or prejudicial to any significant interest of the Corporation or any subsidiary unless the Grantee acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the Corporation.

(h) Reasonableness. The Grantee acknowledges that the Grantee’s obligations under this Section 10 of Article II of this Agreement are reasonable in the context of the nature of the Corporation’s business and the competitive injuries likely to be sustained by the Corporation if the Grantee were to violate such obligations. The Grantee further acknowledges that this Agreement is made in consideration of, and is adequately supported by the agreement of the Corporation to perform its obligations under this Agreement and by other consideration, which the Grantee acknowledges constitutes good, valuable and sufficient consideration.

11. Dividend Equivalents. From and after the Date of Grant and until the earlier of (a) the time when the PRSUs become nonforfeitable and are paid in accordance with Sections 3 and 8 of Article II or (b) the time when the Grantee’s right to receive cash in payment of the PRSUs is forfeited in accordance with Section 7 of Article II, on the date that the Corporation pays a cash dividend (if any) to holders of Common Shares generally, the Grantee shall be entitled to a deferred cash payment equal to the value of the product of (i) the dollar amount of the cash dividend paid per Common Share on such date and (ii) the total number of PRSUs covered by this Agreement. Such dividend equivalents (if any) shall be paid in cash, and shall be subject to such other applicable terms and conditions (including payment or forfeitability) as the PRSUs to which the dividend equivalents were credited.

12. Relation to Severance Agreement. Sections 6 and 8 of Article II shall supersede the provisions of any severance agreement between the Grantee and the Corporation in effect on the Date of Grant that provide for earlier vesting or payment of the PRSUs covered by this Agreement in the event of a Change in Control.

### ARTICLE III

#### GENERAL PROVISIONS

1. Compliance with Law. The Corporation shall make reasonable efforts to comply with all applicable federal and state securities laws.

2. Dilution and Other Adjustments. Subject to the terms of the Plan, the Committee shall make or provide for such adjustments in the Management Objectives and/or PRSUs covered by this Agreement as the Committee in its sole discretion, exercised in good faith, shall determine is

equitably required to prevent dilution or enlargement of the rights of the Grantee that otherwise would result from (a) any stock dividend, stock split, combination of shares, recapitalization or other change in the capital structure of the Corporation, or (b) any merger, consolidation, spin-off, spin-out, split-off, split-up, reorganization, partial or complete liquidation or other distribution of assets, or issuance of warrants or other rights to purchase securities, or (c) any other corporate transaction or event having an effect similar to any of the foregoing. In the event of any such transaction or event, the Committee shall provide in substitution for the PRSUs such alternative consideration (including cash) as it shall in good faith determine to be equitable under the circumstances and shall require in connection therewith the surrender of the PRSUs so replaced.

3. Withholding Taxes. If the Corporation or any Subsidiary shall be required to withhold any federal, state, local or foreign tax in connection with any issuance, vesting or payment of cash pursuant to this Agreement, the Grantee shall pay the tax or make arrangements that are satisfactory to the Corporation or such Subsidiary for the payment thereof.

4. Continuous Employment. For purposes of this Agreement, the continuous employment of the Grantee with the Corporation or a Subsidiary shall not be deemed to have been interrupted, and the Grantee shall not be deemed to have ceased to be an employee of the Corporation or a Subsidiary, by reason of the transfer of his employment among the Corporation and its Subsidiaries or a leave of absence approved by the Board.

5. No Employment Contract; Right to Terminate Employment. The grant of the PRSUs covered by this Agreement to the Grantee is a voluntary, discretionary award being made on a one-time basis and it does not constitute a commitment to make any future awards. The grant of the PRSUs under this Agreement and any payments made hereunder will not be considered salary or other compensation for purposes of any severance pay or similar allowance, except as otherwise required by law. Nothing in this Agreement will give the Grantee any right to continue employment with the Corporation or any Subsidiary, as the case may be, or interfere in any way with the right of the Corporation or a Subsidiary to terminate the employment of the Grantee at any time.

6. Information. Information about the Grantee and the Grantee's participation in the Plan may be collected, recorded and held, used and disclosed for any purpose related to the administration of the Plan. The Grantee understands that such processing of this information may need to be carried out by the Corporation and its Subsidiaries and by third party administrators whether such persons are located within the Grantee's country or elsewhere, including the United States of America. The Grantee consents to the processing of information relating to the Grantee and the Grantee's participation in the Plan in any one or more of the ways referred to above.

7. Amendments. Any amendment to the Plan shall be deemed to be an amendment to this Agreement to the extent that the amendment is applicable hereto; provided, however, that no amendment shall adversely affect the rights of the Grantee under this Agreement without the Grantee's consent ( provided, however, that the Grantee's consent shall not be required to an amendment that is deemed necessary by the Corporation to comply with Section 409A of the Code).

8. Severability. In the event that one or more of the provisions of this Agreement shall be invalidated for any reason by a court of competent jurisdiction, any provision so invalidated shall be deemed to be separable from the other provisions hereof, and the remaining provisions hereof shall continue to be valid and fully enforceable.

9. Governing Law. This agreement is made under, and shall be construed in accordance with, the internal substantive laws of the State of Ohio.

10. Compliance with Section 409A of the Code. To the extent applicable, it is intended that this Agreement and the Plan comply with the provisions of Section 409A of the Code, so that the income inclusion provisions of Section 409A(a)(1) of the Code do not apply to the Grantee. This Agreement and the Plan shall be administered in a manner consistent with this intent. Reference to Section 409A of the Code is to Section 409A of the Internal Revenue Code of 1986, as amended, and will also include any proposed, temporary or final regulations, or any other guidance promulgated with respect to such Section by the U.S. Department of the Treasury or the Internal Revenue Service.

11. Subject to Clawback Policy. Notwithstanding anything in this Agreement to the contrary, subject to any contrary determination by the Committee, the Grantee acknowledges and agrees that this Agreement and the PRSUs covered by this Agreement are subject to the terms and provisions of the Corporation's clawback policy (if any) as may be in effect from time to time to the extent provided for under such policies, including specifically to implement Section 10D of the Exchange Act and any applicable rules or regulations promulgated thereunder (including applicable rules and regulations of any national securities exchange on which the Common Shares may be traded) (the "Compensation Recovery Policy"), and that Section 9 of Article II and this Section 11 of Article III shall be deemed superseded by and subject to the terms and conditions of the Compensation Recovery Policy from and after the effective date thereof.

**[SIGNATURES ON NEXT PAGE]**

The undersigned Grantee hereby accepts the awards covered by this Performance-Based Restricted Stock Units Agreement on the terms and conditions set forth herein.

Dated: \_\_\_\_

Grantee

Executed in the name of and on behalf of the Corporation at Mayfield Heights, Ohio as of this \_\_\_\_ day of \_\_\_\_\_, 2016.

**MATERION CORPORATION**

By \_\_\_\_

Michael C. Hasychak  
Vice President, Treasurer and Secretary

**Statement of Management Objectives**

This Statement of Management Objectives applies to the performance-based Restricted Stock Units granted to the Grantee on the Date of Grant and applies with respect to the Performance-Based Restricted Stock Units Agreement between the Company and the Grantee (the "**Agreement**"). Capitalized terms used in the Agreement that are not specifically defined in this Statement of Management Objectives have the meanings assigned to them in the Agreement or in the Plan, as applicable.

Section 1. Definitions. For purposes hereof:

- (a) "**Peer Group**" means, of a benchmark group of 20 entities, the names of which are attached hereto as Annex A, those entities that remain in the Peer Group as of the end of the Performance Period after application of the Peer Group Adjustment Protocol.
- (b) "**Peer Group Adjustment Protocol**" means: (i) if an entity listed in Annex A files for bankruptcy and/or liquidation, is operating under bankruptcy protection, or is delisted from its primary stock exchange because it fails to meet the exchange listing requirement, then such entity will remain in the Peer Group, but RTSR for the Performance Period will be calculated as if such entity achieved Total Shareholder Return placing it at the bottom (chronologically, if more than one such entity) of the Peer Group; (ii) if, by the last day of the Performance Period, an entity listed in Annex A has been acquired and/or is no longer existing as a public company that is traded on its primary stock exchange (other than for the reasons as described in subsection (i) above, then such entity will not remain

in the Peer Group and RTSR for the Performance Period will be calculated as if such entity had never been a member of the Peer Group; and (iii) except as otherwise described in subsection (i) and (ii) above, for purposes of this Statement of Management Objectives, for each of the entities listed in Annex A, such entity shall be deemed to include any successor to all or substantially all of the primary business of such entity at end of the Performance Period.

- (c) “**Relative Total Shareholder Return**” or “**RTSR**” means the percentile rank of the Corporation’s Total Shareholder Return among the Total Shareholder Returns of all members of the Peer Group, ranked in descending order, at the end of the Performance Period. Percentile will be calculated using the Microsoft Excel Percentile Function method.
- (d) “**Return on Invested Capital**” or “**ROIC**” means the Corporation’s annual adjusted operating profit before tax divided by the sum of short-term debt, long-term debt and equity. “Equity” excludes the items within other comprehensive income (namely, pension valuation adjustment, derivative valuation adjustment and the cumulative translation adjustment). The measurement of the 2018 ROIC will be the average ROIC for 2016, 2017 and 2018 using the beginning (December 31 of the previous year) and ending (December 31 of the current year) invested capital.
- (e) “**Total Shareholder Return**” means, with respect to each of the Common Shares and the common stock of each of the members of the Peer Group, a rate of return reflecting stock price appreciation, plus the reinvestment of dividends in additional shares of stock, from the beginning of the Performance Period through the end of the Performance Period. For purposes of calculating Total Shareholder Return for each of the Company and the members of the Peer Group, the beginning stock price will be based on the average closing stock price for the 30 calendar days immediately preceding January 1, 2016 on the principal stock exchange on which the stock then traded and the ending stock price will be based on the average closing stock price for the 30 calendar days immediately preceding January 1, 2019 on the principal stock exchange on which the stock then trades.

## Section 2. Performance Matrices.

From 0% to 200% of the ROIC PRSUs will be earned based on achievement of the portion of the Management Objectives measured by ROIC goals during the Performance Period, and from 0% to 200% of the RTSR PRSUs will be earned based on achievement of the portion of the Management Objectives measured by RTSR goals during the Performance Period, in each case as follows:

Performance Level	Return on Invested Capital	ROIC PRSUs Earned
Below Threshold	Below 6.0%	0%
Threshold	6.0%	25%
Target	7.5%	100%
Maximum	9.0% or greater	200%

Performance Level	Relative Total Shareholder Return	RTSR PRSUs Earned
Below Threshold	Ranked below 25 <sup>th</sup> percentile	0%
Threshold	Ranked at 25 <sup>th</sup> percentile	50%
Target	Ranked at 50 <sup>th</sup> percentile	100%
Maximum	Ranked at or above 80 <sup>th</sup> percentile	200%

Section 3. Number of PRSUs Earned. Following the Performance Period, on the Committee Determination Date, the Committee shall determine whether and to what extent the goals relating to the Management Objectives have been satisfied for the Performance Period and shall determine the number of PRSUs that shall become nonforfeitable hereunder and under the Agreement on the basis of the following:

- (a) Below Threshold. If, upon the conclusion of the Performance Period, (i) ROIC for the Performance Period falls below the threshold level, as set forth in the Performance Matrices, no ROIC PRSUs shall become nonforfeitable and (ii) RTSR for the Performance Period falls below the threshold level, as set forth in the Performance Matrices, no RTSR PRSUs shall become nonforfeitable.
- (b) Threshold. If, upon the conclusion of the Performance Period, (i) ROIC for the Performance Period equals the threshold level, as set forth in the Performance Matrices, 25% of the ROIC PRSUs (rounded down to the nearest whole number of ROIC PRSUs) shall become nonforfeitable, and (ii) RTSR for the Performance Period equals the threshold level, as set forth in the Performance Matrices, 50% of the RTSR PRSUs (rounded down to the nearest whole number of RTSR PRSUs) shall become nonforfeitable.
- (c) Between Threshold and Target. If, upon the conclusion of the Performance Period, (i) ROIC for the Performance Period exceeds the threshold level, but is less than the target level, as set forth in the Performance Matrices, a percentage between 25% and 100% (determined on the basis of straight-line mathematical interpolation) of the ROIC PRSUs (rounded down to the nearest whole number of ROIC PRSUs) shall become nonforfeitable, and (ii) RTSR for the Performance Period exceeds the threshold level, but is less than the target level, as set forth in the Performance Matrices, a percentage between 50% and 100% (determined on the basis of straight-line mathematical interpolation) of the RTSR PRSUs (rounded down to the nearest whole number of RTSR PRSUs) shall become nonforfeitable.
- (d) Target. If, upon the conclusion of the Performance Period, (i) ROIC for the Performance Period equals the target level, as set forth in

the Performance Matrices, 100% of the ROIC PRSUs shall become nonforfeitable, and (ii) RTSR for the Performance Period equals the target level, as set forth in the Performance Matrices, 100% of the RTSR PRSUs shall become nonforfeitable.

- (e) Between Target and Maximum. If, upon the conclusion of the Performance Period, (i) ROIC for the Performance Period exceeds the target level, but is less than the maximum level, as set forth in the Performance Matrices, a percentage between 100% and 200% (determined on the basis of straight-line mathematical interpolation) of the ROIC PRSUs (rounded down to the nearest whole number of ROIC PRSUs) shall become nonforfeitable, and (ii) RTSR for the Performance Period exceeds the target level, but is less than the maximum level, as set forth in the Performance Matrices, a percentage between 100% and 200% (determined on the basis of straight-line mathematical interpolation) of the RTSR PRSUs (rounded down to the nearest whole number of RTSR PRSUs) shall become nonforfeitable.
- (f) Equals or Exceeds Maximum. If, upon the conclusion of the Performance Period, (i) ROIC for the Performance Period equals or exceeds the maximum level, as set forth in the Performance Matrices, 200% of the ROIC PRSUs shall become nonforfeitable, and (ii) RTSR for the Performance Period equals or exceeds the maximum level, as set forth in the Performance Matrices, 200% of the RTSR PRSUs shall become nonforfeitable.

Before all or any portion of any Qualified Performance-Based Award of PRSUs shall become nonforfeitable or paid in accordance with this Statement of Management Objectives or the Agreement, the Committee shall determine in writing that the Management Objectives have been satisfied.

## Annex A

### Peer Group

Company Name	Ticker Symbol
II-VI Incorporated	IIVI
Atmel Corporation	ATML
Cabot Corporation	CBT
Carpenter Technology Corporation	CRS
A. M. Castle & Co.	CAS
Coherent, Inc.	COHR
CTS Corporation	CTS
Chemtura Corporation	CHMT
Entegris, Inc.	ENTG
Ferro Corporation	FOE
Haynes International, Inc.	HAYN
Integrated Device Technology, Inc.	IDTI
Horsehead Holding Corporation	ZINC
Kemet Corporation	KEM

Kraton Performance Polymers, Inc.	KRA
Minerals Technologies Inc.	MTX
Olympic Steel Inc.	ZEUS
PolyOne Corporation	POL
Quaker Chemical Corporation	KWR
Rogers Corporation	ROG

**EXHIBIT A**

**MATERION CORPORATION**

**BENEFICIARY DESIGNATIONS**

In accordance with the terms and conditions of the Materion Corporation 2006 Stock Incentive Plan (As Amended and Restated as of May 7, 2014) (the “Plan”), I hereby designate the person(s) indicated below as my beneficiary(ies) to receive any amounts payable under said Plan after my death.

Name \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Social Sec. Nos. of Beneficiary(ies) \_\_

Relationship(s) \_\_

Date(s) of Birth \_\_

In the event that the above-named beneficiary(ies) predecease(s) me, I hereby designate the following person as beneficiary(ies);

Name \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Social Sec. Nos. of Beneficiary(ies) \_\_

Relationship(s) \_\_

Date(s) of Birth \_\_

I hereby expressly revoke all prior designations of beneficiary(ies), reserve the right to change the beneficiary(ies) herein designated and agree that the rights of said beneficiary(ies) shall be subject to the terms of the Plan. In the event that there is no beneficiary living at the time of my death, I understand that the amounts payable under the Plan will be paid to my estate.

\_\_\_\_\_  
Date (Signature)

\_\_\_\_\_  
(Print or type n

[Approved February 22, 2016. 2016 Stock & Cash-Settled PRSUs]

## MATERION CORPORATION

### Performance-Based Restricted Stock Units Agreement

WHEREAS, \_\_\_\_\_ (the “Grantee”) is an employee of Materion Corporation, an Ohio corporation (the “Corporation”), or a Subsidiary; and

WHEREAS, the execution of an agreement in the form hereof (this “Agreement”) has been authorized by resolution of the Compensation Committee (the “Committee”) of the Board of Directors of the Corporation that was duly adopted on \_\_\_\_\_, 2016.

NOW, THEREFORE, pursuant to the Materion Corporation 2006 Stock Incentive Plan (As Amended and Restated as of May 7, 2014) (the “Plan”), and subject to the terms and conditions thereof and the terms and conditions hereinafter set forth, the Corporation hereby confirms to the Grantee the grant of (1) a targeted number of \_\_\_\_\_ performance-based Restricted Stock Units to be earned, if at all, on the basis of the achievement of the portion of the Management Objectives measured by ROIC goals during the Performance Period (as defined below) (the “ROIC PRSUs”), and (2) a targeted number of \_\_\_\_\_ performance-based Restricted Stock Units to be earned, if at all, on the basis of the achievement of the portion of the Management Objectives measured by RTSR goals during the Performance Period (the “RTSR PRSUs” and, together with the ROIC PRSUs, the “PRSUs”), effective on \_\_\_\_\_, 2016 (the “Date of Grant”). Subject to the attainment of the Management Objectives described in Section 3 of Article II of this Agreement and the Statement of Management Objectives as approved by the Compensation Committee with respect to the PRSUs on the Date of Grant (the “Statement of Management Objectives”), the Grantee may earn from 0% and 200% of the ROIC PRSUs and from 0% and 200% of the RTSR PRSUs.

## ARTICLE I

### DEFINITIONS

All terms used herein with initial capital letters that are defined in the Plan shall have the meanings assigned to them in the Plan, and the following additional terms, when used herein with initial capital letters, shall have the following meanings:

1. “Committee Determination Date” means the date following the end of the Performance Period on which the Committee determines the level of attainment of the Management Objectives for the Performance Period.
2. “Management Objectives” means the threshold, target and maximum goals established by the Committee for the Performance Period with respect to both ROIC and RTSR as described in the Statement of Management Objectives. No adjustment of the Management Objectives shall be permitted in respect of any PRSUs granted to the Participant if at the Date of Grant he or she is, or is determined by the Committee to be likely to become, a “covered employee” within the meaning of Section 162(m) of the Code (or any successor provision) if such adjustment would result in the loss of an otherwise available exemption under Section 162(m) of the Code.
3. “Performance Period” means the three-year period commencing January 1, 2016 and ending on December 31, 2018.
4. “Relative Total Shareholder Return” or “RTSR” has the meaning as set forth in the Statement of Management Objectives.
5. “Return on Invested Capital” or “ROIC” has the meaning as set forth in the Statement of Management Objectives.

## ARTICLE II

### CERTAIN TERMS OF PRSUS

1. Payment of PRSUs. The PRSUs covered by this Agreement shall become payable to the Grantee if they become nonforfeitable in accordance with Sections 3, 4, 5 or 6 of Article II.

2. PRSUs Non-Transferable. The PRSUs covered by this Agreement and any interest therein may be transferred or assigned only by will or pursuant to the laws of descent and distribution prior to payment therefor.

3. Normal Vesting of PRSUs. Subject to the terms and conditions of Sections 4, 5 and 6 of Article II, the Grantee's right to receive Common Shares (and possibly a cash payment) for the ROIC PRSUs and/or Common Shares (and possibly a cash payment) for the RTSR PRSUs, as applicable, shall become nonforfeitable with respect to (a) 0% to 200% of the ROIC PRSUs on the basis of the achievement of the portion of the Management Objectives measured by ROIC goals during the Performance Period, and (b) 0% and 200% of the RTSR PRSUs on the basis of the achievement of the portion of the Management Objectives measured by RTSR goals during the Performance Period, in each case as set forth in the Statement of Management Objectives. Except as otherwise provided herein, the Grantee's right to receive Common Shares (and possibly a cash payment) for the ROIC PRSUs and/or Common Shares (and possibly a cash payment) for the RTSR PRSUs, as applicable, is contingent upon his or her remaining in the continuous employ of the Company or a Subsidiary until the end of the Performance Period.

4. Effect of Termination due to Death or Disability. Notwithstanding the provisions of Section 3 of Article II, 100% of the PRSUs shall immediately become nonforfeitable and payable at the time described in Section 8 of Article II if the Grantee dies or becomes permanently disabled while in the employ of the Corporation or a Subsidiary before the Committee Determination Date. The Grantee shall be considered to have become permanently disabled if the Grantee has suffered a permanent disability within the meaning of the long-term disability plan in effect for, or applicable to, the Grantee and is "disabled" within the meaning of Section 409A(a)(2)(C) of the Code.

5. Effect of Termination due to Retirement. Notwithstanding the continuous employment provision of Section 3 of Article II above, but subject to the provisions of Section 6 of Article II below, if the Grantee is at the time of such termination (a) at least age 65 or (b) at least age 55 and has completed at least 10 years of continuous with the Corporation or a Subsidiary, the PRSUs covered by this Agreement shall continue to be eligible to become nonforfeitable in accordance with Section 3 of this Article (and payable in accordance with Section 8 of Article II) as if the Grantee continued to be employed until the end of the Performance Period.

6. Change in Control. Notwithstanding Sections 3 and 5 of Article II above, the following alternative nonforfeitability provisions will apply to the PRSUs in the event of a Change in Control occurring after the Date of Grant and prior to the PRSUs becoming nonforfeitable in accordance with Section 3 of Article II:

(a) Upon the Change in Control, 100% of the PRSUs shall become nonforfeitable and payable in accordance with Section 8 of Article II, except to the extent that an award meeting the requirements of Section 6(b) of Article II (a "Replacement Award") is provided to the Grantee in accordance with Section 6(b) of Article II to replace or adjust the award of PRSUs covered by this Agreement (the "Replaced Award").

(b) For purposes of this Agreement, a "Replacement Award" means an award (i) of the same type ( *e.g.* , performance-based restricted stock units) as the Replaced Award, (ii) that has a value at least equal to the value of the Replaced Award, (iii) that relates to publicly traded equity securities of the Corporation or its successor in the Change in Control or another entity that is affiliated with the Corporation or its successor following the Change in Control, (iv) if the Grantee holding the Replaced Award is subject to U.S. federal income tax under the Code, the tax consequences of which to such Grantee under the Code are not less favorable to such Grantee than the tax consequences of the Replaced Award, and (v) the other terms and conditions of which are not less favorable to the Grantee holding the Replaced Award than the terms and conditions of the Replaced Award (including the provisions that would apply in the event of a subsequent Change in Control). A Replacement Award may be granted only to the extent it does not result in the Replaced Award or Replacement Award failing to comply with or be exempt from



Section 409A of the Code. Without limiting the generality of the foregoing, the Replacement Award may take the form of a continuation of the Replaced Award if the requirements of the two preceding sentences are satisfied. The determination of whether the conditions of this Section 6(b) of Article II are satisfied will be made by the Committee, as constituted immediately before the Change in Control, in its sole discretion.

(c) If, upon receiving a Replacement Award, the Grantee's employment with the Corporation or a Subsidiary (or any of their successors) (as applicable, the "Successor") is terminated by the Grantee as a Termination for Good Cause or if the Grantee is terminated by the Successor other than as a Termination for Cause within a period of two years after the Change in Control, 100% of the Replacement Award will become nonforfeitable and payable in accordance with Section 8 of Article II with respect to the performance-based restricted stock units covered thereby.

(d) "Termination for Cause" means a termination of Grantee's employment by the Successor for "Cause" (as defined in Section 10(f) of Article II).

(e) "Termination for Good Cause" shall mean the Grantee's termination of the Grantee's employment with the Successor as a result of the occurrence of any of the following:

- (i) a change in the Grantee's principal location of employment that is greater than 50 miles from such location as of the date of this Agreement without the Grantee's consent; provided, however, that the Grantee hereby acknowledges that the Grantee may be required to engage in travel in connection with the performance of the Grantee's duties hereunder and that such travel shall not constitute a change in the Grantee's principal location of employment for purposes hereof;
- (ii) a material diminution in the Grantee's base compensation;
- (iii) a change in the Grantee's position with the Successor without the Grantee's consent such that there is a material diminution in the Grantee's authority, duties or responsibilities; or
- (iv) any other action or inaction that constitutes a material breach by the Successor of the agreement, if any, under which the Grantee provides services to the Successor or its subsidiaries.

Notwithstanding the foregoing, the Grantee's termination of the Grantee's employment with the Successor as a result of the occurrence of any of the foregoing shall not constitute a "Termination for Good Cause" unless (A) the Grantee gives the Successor written notice of such occurrence within 90 days of such occurrence and such occurrence is not cured by the Successor within 30 days of the date on which such written notice is received by the Successor and (B) the Grantee actually terminates his or her employment with the Successor prior to the 365th day following such occurrence.

(f) If a Replacement Award is provided, notwithstanding anything in this Agreement to the contrary, any outstanding PRSUs which at the time of the Change in Control are not subject to a "substantial risk of forfeiture" (within the meaning of Section 409A of the Code) will be deemed to be nonforfeitable at the time of such Change in Control and will be paid as provided for in Section 8(b) of Article II.

7. Forfeiture of PRSUs. The PRSUs shall be forfeited to the extent they fail to become nonforfeitable as of the Committee Determination Date and, except as otherwise provided in Sections 4, 5 or 6 of Article II, if the Grantee ceases to be employed by the Corporation or a Subsidiary at any time prior to such PRSUs becoming nonforfeitable, or to the extent they are forfeited as provided in Section 9 of Article II.

8. Form and Time of Payment of PRSUs.

(a) General. Except as otherwise provided for in Section 2 of Article III, and subject to Section 7 and Section 8(b) of Article II, payment for the PRSUs that have become nonforfeitable in accordance with Sections 3, 4, 5 or 6 of Article II shall be made in the form of (i) Common Shares for up to 100% of the ROIC and RTSR PRSUs, and (ii) cash for greater than 100% of the ROIC and RTSR PRSUs, in each case between January 1, 2019 and March 15, 2019. Any cash payment for the PRSUs will be equal to the Market Value per Share on the date the applicable PRSUs become nonforfeitable times the number of such PRSUs, plus any dividend equivalents accrued on such PRSUs since the Date of

Grant (as provided below in Section 11 of this Article II). The cash payment will be made in local currency, less applicable taxes.

(b) Alternative Payment Events. Notwithstanding Section 8(a) of Article II, and except as otherwise provided for in Section 2 of Article III, to the extent that PRSUs have become nonforfeitable, then any issuance of the Common Shares underlying such PRSUs (or payment of any other form of consideration into which the Common Shares underlying such PRSUs may have been converted) and any cash payment for the PRSUs will be made on an earlier date as follows:

(i) Death. To the extent that PRSUs are nonforfeitable on the date of Grantee's death, payment for the PRSUs will be made on the date of Grantee's death;

(ii) Disability. To the extent that PRSUs are nonforfeitable on the date the Grantee becomes "disabled" within the meaning of Section 409A(a)(2)(C) of the Code, payment for the PRSUs will be made on the date the Grantee becomes disabled;

(iii) Separation from Service. To the extent that PRSUs are nonforfeitable on the date of Grantee's "separation from service" (determined in accordance with Section 409A of the Code), payment for the PRSUs will be made on the date of Grantee's "separation from service"; provided, however, that if the Grantee on the date of separation from service is a "specified employee" (within the meaning of Section 409A of the Code determined using the identification methodology selected by the Company from time to time), payment for the PRSUs will be made on the first day of the seventh month after the date of Grantee's separation from service or, if earlier, the date of Grantee's death; and

(iv) Change of Control. To the extent that PRSUs are nonforfeitable on the date of a Change in Control, payment for the PRSUs will be made on the date of the Change of Control; provided, however, that if such Change in Control would not qualify as a permissible date of distribution under Section 409A(a)(2)(A) of the Code, and the regulations thereunder, and where Section 409A of the Code applies to such distribution, payment will be made on the date that would have otherwise applied pursuant to Section 8.

9. Effect of Detrimental Activity. Notwithstanding anything herein to the contrary (other than Section 11 of Article III), if the Grantee, either during employment by the Corporation or a Subsidiary or within one year after termination of such employment, shall engage in any Detrimental Activity (as defined in Section 10 below) and the Board shall so find, then the Grantee shall, upon notice of such finding:

(a) Forfeit all PRSUs held by the Grantee.

(b) With respect to any PRSUs that became nonforfeitable and for which a cash payment was made under this Agreement, pay to the Corporation in cash an amount equal to the payment Grantee received for such PRSUs.

(c) With respect to any PRSUs that became nonforfeitable and were paid pursuant to this Agreement, return to the Corporation any and all Common Shares that were paid out under this Agreement that the Grantee has not then disposed of.

(d) With respect to any and all Common Shares subject to the PRSUs covered by this Agreement that (i) became nonforfeitable and were paid pursuant to this Agreement within a period of one year prior to the date of the commencement of such Detrimental Activity and (ii) the Grantee has disposed of, pay to the Corporation the cash value of such Common Shares on the date the respective PRSUs were paid.

(e) To the extent that such amounts are not paid to the Corporation, the Corporation may, to the extent permitted by law, set off the amounts so payable to it against any amounts that may be owing from time to time by the Corporation or a Subsidiary to the Grantee, whether as wages, deferred compensation or vacation pay or in the form of any other benefit or for any other reason, except that no such set-off shall be

permitted against any amount that constitutes “deferred compensation” within the meaning of Section 409A of the Code.

10. Definition of Detrimental Activity. For purposes of this Agreement, the term “Detrimental Activity” shall include:

(a) (1) Engaging in any activity in violation of the section entitled “Competitive Activity; Confidentiality; Nonsolicitation” in the Severance Agreement between the Corporation and the Grantee, if any such agreement is in effect on the date of this Agreement, or in violation of any corresponding provision in any other agreement between the Corporation and the Grantee in effect on the date of this Agreement providing for the payment of severance compensation; or

(i) If no such severance agreement is in effect as of the date of this Agreement, or if such severance agreement does not contain a section corresponding to “Competitive Activity; Confidentiality; Nonsolicitation”:

A. Competitive Activity During Employment. Competing with the Corporation anywhere within the United States during the term of the Grantee’s employment, including, without limitation:

- (1) entering into or engaging in any business which competes with the business of the Corporation;
- (2) soliciting customers, business, patronage or orders for, or selling, any products or services in competition with, or for any business that competes with, the business of the Corporation;
- (3) diverting, enticing or otherwise taking away any customers, business, patronage or orders of the Corporation or attempting to do so; or
- (4) promoting or assisting, financially or otherwise, any person, firm, association, partnership, corporation or other entity engaged in any business which competes with the business of the Corporation.

B. Following Termination. For a period of one year following the Grantee’s termination date:

- (1) entering into or engaging in any business which competes with the Corporation’s business within the Restricted Territory (as hereinafter defined);
- (2) soliciting customers, business, patronage or orders for, or selling, any products or services in competition with, or for any business, wherever located, that competes with, the Corporation’s business within the Restricted Territory;
- (3) diverting, enticing or otherwise taking away any customers, business, patronage or orders of the Corporation within the Restricted Territory, or attempting to do so; or
- (4) promoting or assisting, financially or otherwise, any person, firm, association, partnership, corporation or other entity engaged in any business which competes with the Corporation’s business within the Restricted Territory.

For the purposes of Sections 10(a)(ii)(A) and (B) above, inclusive, but without limitation thereof, the Grantee will be in violation thereof if the Grantee engages in any or all of the activities set forth therein directly as an individual on the Grantee’s own account, or indirectly as a partner, joint venturer, employee, agent, salesperson, consultant, officer and/or director of any firm, association, partnership, corporation or other entity, or as a stockholder of any corporation in which the Grantee or the Grantee’s spouse, child or parent owns, directly or indirectly, individually or in the aggregate, more than five percent (5%) of the outstanding stock.

- C. The “Corporation.” For the purposes of this Section 10(a)(ii) of Article II, the “Corporation” shall include any and all direct and indirect subsidiaries, parents, and affiliated, or related companies of the Corporation for which the Grantee worked or had responsibility at the time of termination of the Grantee’s employment and at any time during the two-year period prior to such termination.
- D. The “Corporation’s Business.” For the purposes of this Section 10 of Article II inclusive, the Corporation’s business is defined to be the integrated production of high performance advanced engineered materials used in a variety of electrical, electronic, thermal and structural applications serving the consumer electronics, industrial components and commercial aerospace, defense and science, medical, energy, automotive electronics, telecommunications infrastructure and appliance markets, as further described in any and all manufacturing, marketing and sales manuals and materials of the Corporation as the same may be altered, amended, supplemented or otherwise changed from time to time, or of any other products or services substantially similar to or readily substitutable for any such described products and services.
- E. “Restricted Territory.” For the purposes of Section 10(a)(ii)(B) of Article II, the “Restricted Territory” shall be defined as and limited to:
- (5) the geographic area(s) within a one hundred mile radius of any and all Corporation location(s) in, to, or for which the Grantee worked, to which the Grantee was assigned or had any responsibility (either direct or supervisory) at the time of termination of the Grantee’s employment and at any time during the two-year period prior to such termination; and
  - (6) all of the specific customer accounts, whether within or outside of the geographic area described in (1) above, with which the Grantee had any contact or for which the Grantee had any responsibility (either direct or supervisory) at the time of termination of the Grantee’s employment and at any time during the two-year period prior to such termination.
- F. “Extension.” If it shall be judicially determined that the Grantee has violated any of the Grantee’s obligations under Section 10(a)(ii)(B) of Article II of this Agreement, then the period applicable to each obligation that the Grantee shall have been determined to have violated shall automatically be extended by a period of time equal in length to the period during which such violation(s) occurred.
- (b) Non-Solicitation. Except as otherwise provided in Section 10(a)(i) of Article II, Detrimental Activity shall also include directly or indirectly at any time soliciting or inducing or attempting to solicit or induce any employee(s), sales representative(s), agent(s) or consultant(s) of the Corporation and/or of its parents, or its other subsidiaries or affiliated or related companies to terminate their employment, representation or other association with the Corporation and/or its parent or its other subsidiary or affiliated or related companies.
- (c) Further Covenants. Except as otherwise provided in Section 10(a)(i) of Article II, Detrimental Activity shall also include:
- (i) directly or indirectly, at any time during or after the Grantee’s employment with the Corporation, disclosing, furnishing, disseminating, making available or, except in the course of performing the Grantee's duties of employment, using any trade secrets or confidential business and technical information of the Corporation or its customers or vendors, including without limitation as to when or how the Grantee may have acquired such information. Such confidential information shall include, without limitation, the Corporation's unique selling, manufacturing and servicing methods and business techniques, training, service and business manuals,

promotional materials, training courses and other training and instructional materials, vendor and product information, customer and prospective customer lists, other customer and prospective customer information and other business information. The Grantee specifically acknowledges that all such confidential information, whether reduced to writing, maintained on any form of electronic media, or maintained in the Grantee's mind or memory and whether compiled by the Corporation, and/or the Grantee, derives independent economic value from not being readily known to or ascertainable by proper means by others who can obtain economic value from its disclosure or use, that reasonable efforts have been made by the Corporation to maintain the secrecy of such information, that such information is the sole property of the Corporation and that any retention and use of such information by the Grantee during the Grantee's employment with the Corporation (except in the course of performing the Grantee's duties and obligations to the Corporation) or after the termination of the Grantee's employment shall constitute a misappropriation of the Corporation's trade secrets.

(ii) Upon termination of the Grantee's employment with the Corporation, for any reason, the Grantee's failure to return to the Corporation, in good condition, all property of the Corporation, including without limitation, the originals and all copies of any materials which contain, reflect, summarize, describe, analyze or refer or relate to any items of information listed in Section 10(c)(i) of Article II.

(d) Discoveries and Inventions. Except as otherwise provided in Section 10(a)(i) of Article II, Detrimental Activity shall also include the failure or refusal of the Grantee to assign to the Corporation, its successors, assigns or nominees, all of the Grantee's rights to any discoveries, inventions and improvements, whether patentable or not, made, conceived or suggested, either solely or jointly with others, by the Grantee while in the Corporation's employ, whether in the course of the Grantee's employment with the use of the Corporation's time, material or facilities or that is in any way within or related to the existing or contemplated scope of the Corporation's business. Any discovery, invention or improvement relating to any subject matter with which the Corporation was concerned during the Grantee's employment and made, conceived or suggested by the Grantee, either solely or jointly with others, within one year following termination of the Grantee's employment under this Agreement or any successor agreements shall be irrebuttably presumed to have been so made, conceived or suggested in the course of such employment with the use of the Corporation's time, materials or facilities. Upon request by the Corporation with respect to any such discoveries, inventions or improvements, the Grantee will execute and deliver to the Corporation, at any time during or after the Grantee's employment, all appropriate documents for use in applying for, obtaining and maintaining such domestic and foreign patents as the Corporation may desire, and all proper assignments therefor, when so requested, at the expense of the Corporation, but without further or additional consideration.

(e) Work Made For Hire. Except as otherwise provided in Section 10(a)(i) of Article II, Detrimental Activity shall also include violation of the Corporation's rights in any or all work papers, reports, documentation, drawings, photographs, negatives, tapes and masters therefor, prototypes and other materials (hereinafter, "items"), including without limitation, any and all such items generated and maintained on any form of electronic media, generated by Grantee during the Grantee's employment with the Corporation. The Grantee acknowledges that, to the extent permitted by law, all such items shall be considered a "work made for hire" and that ownership of any and all copyrights in any and all such items shall belong to the Corporation. The item will recognize the Corporation as the copyright owner, will contain all proper copyright notices, *e.g.* , "(creation date) [Corporation Name], All Rights Reserved," and will be in condition to be registered or otherwise placed in compliance with

registration or other statutory requirements throughout the world.

(f) Termination for Cause. Except as otherwise provided in Section 10(a)(i) of Agreement, Detrimental Activity shall also include activity that results in termination for Cause. For the purposes of this Section 10, “Cause” shall mean that, the Grantee shall have:

(i) been convicted of a criminal violation involving fraud, embezzlement, theft or violation of federal antitrust statutes or federal securities laws in connection with his duties or in the course of his employment with the Corporation or any affiliate of the Corporation;

(ii) committed intentional wrongful damage to property of the Corporation or any affiliate of the Corporation; or

(iii) committed intentional wrongful disclosure of secret processes or confidential information of the Corporation or any affiliate of the Corporation;

and any such act shall have been demonstrably and materially harmful to the Corporation.

(g) Other Injurious Conduct. Detrimental Activity shall also include any other conduct or act determined to be injurious, detrimental or prejudicial to any significant interest of the Corporation or any subsidiary unless the Grantee acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the Corporation.

(h) Reasonableness. The Grantee acknowledges that the Grantee’s obligations under this Section 10 of Article II of this Agreement are reasonable in the context of the nature of the Corporation’s business and the competitive injuries likely to be sustained by the Corporation if the Grantee were to violate such obligations. The Grantee further acknowledges that this Agreement is made in consideration of, and is adequately supported by the agreement of the Corporation to perform its obligations under this Agreement and by other consideration, which the Grantee acknowledges constitutes good, valuable and sufficient consideration.

11. Dividend Equivalents. From and after the Date of Grant and until the earlier of (a) the time when the PRSUs become nonforfeitable and are paid in accordance with Sections 3 and 8 of Article II or (b) the time when the Grantee’s right to receive Common Shares (or Common Shares and cash) in payment of the PRSUs is forfeited in accordance with Section 7 of Article II, on the date that the Corporation pays a cash dividend (if any) to holders of Common Shares generally, the Grantee shall be entitled to a deferred cash payment equal to the value of the product of (i) the dollar amount of the cash dividend paid per Common Share on such date and (ii) the total number of PRSUs covered by this Agreement. Such dividend equivalents (if any) shall be paid in cash, and shall be subject to such other applicable terms and conditions (including payment or forfeitability) as the PRSUs to which the dividend equivalents were credited.

12. Relation to Severance Agreement. Sections 6 and 8 of Article II shall supersede the provisions of any severance agreement between the Grantee and the Corporation in effect on the Date of Grant that provide for earlier vesting or payment of the PRSUs covered by this Agreement in the event of a Change in Control.

### ARTICLE III GENERAL PROVISIONS

1. Compliance with Law. The Corporation shall make reasonable efforts to comply with all applicable federal and state securities laws; provided, however, notwithstanding any other provision of this Agreement, the Corporation shall not be obligated to issue any Common Shares pursuant to this Agreement if the issuance thereof would result in a violation of any such law.

2. Dilution and Other Adjustments. Subject to the terms of the Plan, the Committee shall make or provide for such adjustments in the Management Objectives and/or PRSUs covered by this Agreement as the Committee in its sole discretion, exercised in good faith, shall determine is equitably required to prevent dilution or enlargement of the rights of the Grantee that otherwise would result from (a) any stock dividend, stock split, combination of shares, recapitalization or other change in the capital structure of the Corporation, or (b) any merger, consolidation, spin-off, spin-out, split-off, split-up, reorganization, partial or complete liquidation or other distribution of assets, or issuance of warrants or other rights to purchase securities, or (c) any other corporate transaction or event having an effect similar to any of the foregoing. In the event of any such transaction or event, the Committee shall provide in substitution for the PRSUs such alternative consideration (including cash) as it shall in good faith determine to be equitable under the circumstances and shall require in connection therewith the surrender of the PRSUs so replaced.

3. Withholding Taxes. If the Corporation or any Subsidiary shall be required to withhold any federal, state, local or foreign tax in connection with any issuance, vesting or payment of Common Shares or other securities, or cash, pursuant to this Agreement, the Grantee shall pay the tax or make arrangements that are satisfactory to the Corporation or such Subsidiary for the payment thereof. With respect to the PRSUs, the Grantee may elect to satisfy all or any part of any such withholding obligation by surrendering to the Corporation or such Subsidiary a portion of the Common Shares subject to the PRSUs that are covered by this Agreement and the Common Shares so surrendered by the Grantee shall be credited against any such withholding obligation at the Market Value per Share of such Common Shares on the date of such surrender. In no event shall the market value of the Common Shares to be withheld and/or delivered pursuant to this Section 3 of Article III to satisfy applicable withholding taxes in connection with the benefit exceed the minimum amount of taxes required to be withheld.

4. Continuous Employment. For purposes of this Agreement, the continuous employment of the Grantee with the Corporation or a Subsidiary shall not be deemed to have been interrupted, and the Grantee shall not be deemed to have ceased to be an employee of the Corporation or a Subsidiary, by reason of the transfer of his employment among the Corporation and its Subsidiaries or a leave of absence approved by the Board.

5. No Employment Contract; Right to Terminate Employment. The grant of the PRSUs covered by this Agreement to the Grantee is a voluntary, discretionary award being made on a one-time basis and it does not constitute a commitment to make any future awards. The grant of the PRSUs under this Agreement and any payments made hereunder will not be considered salary or other compensation for purposes of any severance pay or similar allowance, except as otherwise required by law. Nothing in this Agreement will give the Grantee any right to continue employment with the Corporation or any Subsidiary, as the case may be, or interfere in any way with the right of the Corporation or a Subsidiary to terminate the employment of the Grantee at any time.

6. Information. Information about the Grantee and the Grantee's participation in the Plan may be collected, recorded and held, used and disclosed for any purpose related to the administration of the Plan. The Grantee understands that such processing of this information may need to be carried out by the Corporation and its Subsidiaries and by third party administrators whether such persons are located within the Grantee's country or elsewhere, including the United States of America. The Grantee consents to the processing of information relating to the Grantee and the Grantee's participation in the Plan in any one or more of the ways referred to above.

7. Amendments. Any amendment to the Plan shall be deemed to be an amendment to this Agreement to the extent that the amendment is applicable hereto; provided, however, that no amendment shall adversely affect the rights of the Grantee under this Agreement without the

Grantee's consent ( provided, however, that the Grantee's consent shall not be required to an amendment that is deemed necessary by the Corporation to comply with Section 409A of the Code).

8. Severability. In the event that one or more of the provisions of this Agreement shall be invalidated for any reason by a court of competent jurisdiction, any provision so invalidated shall be deemed to be separable from the other provisions hereof, and the remaining provisions hereof shall continue to be valid and fully enforceable.

9. Governing Law. This agreement is made under, and shall be construed in accordance with, the internal substantive laws of the State of Ohio.

10. Compliance with Section 409A of the Code. To the extent applicable, it is intended that this Agreement and the Plan comply with the provisions of Section 409A of the Code, so that the income inclusion provisions of Section 409A(a)(1) of the Code do not apply to the Grantee. This Agreement and the Plan shall be administered in a manner consistent with this intent. Reference to Section 409A of the Code is to Section 409A of the Internal Revenue Code of 1986, as amended, and will also include any proposed, temporary or final regulations, or any other guidance promulgated with respect to such Section by the U.S. Department of the Treasury or the Internal Revenue Service.

11. Subject to Clawback Policy. Notwithstanding anything in this Agreement to the contrary, subject to any contrary determination by the Committee, the Grantee acknowledges and agrees that this Agreement and the PRSUs covered by this Agreement are subject to the terms and provisions of the Corporation's clawback policy (if any) as may be in effect from time to time to the extent provided for under such policies, including specifically to implement Section 10D of the Exchange Act and any applicable rules or regulations promulgated thereunder (including applicable rules and regulations of any national securities exchange on which the Common Shares may be traded) (the "Compensation Recovery Policy"), and that Section 9 of Article II and this Section 11 of Article III shall be deemed superseded by and subject to the terms and conditions of the Compensation Recovery Policy from and after the effective date thereof.

**[SIGNATURES ON NEXT PAGE]**

The undersigned Grantee hereby accepts the awards covered by this Performance-Based Restricted Stock Units Agreement on the terms and conditions set forth herein.

Dated: \_\_\_\_

Grantee

Executed in the name of and on behalf of the Corporation at Mayfield Heights, Ohio as of this \_\_\_\_ day of \_\_\_\_\_, 2016.

**MATERION CORPORATION**

By \_\_\_\_

Michael C. Hasychak  
Vice President, Treasurer and Secretary

**Statement of Management Objectives**

This Statement of Management Objectives applies to the performance-based Restricted Stock Units granted to the Grantee on the Date of Grant and applies with respect to the Performance-Based Restricted Stock Units Agreement between the Company and the Grantee (the "**Agreement**"). Capitalized terms used in the Agreement that are not specifically defined in this Statement of Management Objectives have the meanings assigned



to them in the Agreement or in the Plan, as applicable.

Section 1. Definitions . For purposes hereof:

- (a) “ **Peer Group** ” means, of a benchmark group of 20 entities, the names of which are attached hereto as Annex A, those entities that remain in the Peer Group as of the end of the Performance Period after application of the Peer Group Adjustment Protocol.
- (b) “ **Peer Group Adjustment Protocol** ” means: (i) if an entity listed in Annex A files for bankruptcy and/or liquidation, is operating under bankruptcy protection, or is delisted from its primary stock exchange because it fails to meet the exchange listing requirement, then such entity will remain in the Peer Group, but RTSR for the Performance Period will be calculated as if such entity achieved Total Shareholder Return placing it at the bottom (chronologically, if more than one such entity) of the Peer Group; (ii) if, by the last day of the Performance Period, an entity listed in Annex A has been acquired and/or is no longer existing as a public company that is traded on its primary stock exchange (other than for the reasons as described in subsection (i) above), then such entity will not remain in the Peer Group and RTSR for the Performance Period will be calculated as if such entity had never been a member of the Peer Group; and (iii) except as otherwise described in subsection (i) and (ii) above, for purposes of this Statement of Management Objectives, for each of the entities listed in Annex A, such entity shall be deemed to include any successor to all or substantially all of the primary business of such entity at end of the Performance Period.
- (c) “ **Relative Total Shareholder Return** ” or “ **RTSR** ” means the percentile rank of the Corporation’s Total Shareholder Return among the Total Shareholder Returns of all members of the Peer Group, ranked in descending order, at the end of the Performance Period. Percentile will be calculated using the Microsoft Excel Percentile Function method.
- (d) “ **Return on Invested Capital** ” or “ **ROIC** ” means the Corporation’s annual adjusted operating profit before tax divided by the sum of short-term debt, long-term debt and equity. “Equity” excludes the items within other comprehensive income (namely, pension valuation adjustment, derivative valuation adjustment and the cumulative translation adjustment). The measurement of the 2018 ROIC will be the average ROIC for 2016, 2017 and 2018 using the beginning (December 31 of the previous year) and ending (December 31 of the current year) invested capital.
- (e) “ **Total Shareholder Return** ” means, with respect to each of the Common Shares and the common stock of each of the members of the Peer Group, a rate of return reflecting stock price appreciation, plus the reinvestment of dividends in additional shares of stock, from the beginning of the Performance Period through the end of the Performance Period. For purposes of calculating Total Shareholder Return for each of the Company and the members of the Peer Group, the beginning stock price will be based on the average closing stock price for the 30 calendar days immediately preceding January 1, 2016 on the principal stock exchange on which the stock then traded and the ending stock price will be based on the average closing stock price for the 30 calendar days immediately preceding January 1, 2019 on the principal stock exchange on which the stock then trades.

Section 2. Performance Matrices .

From 0% to 200% of the ROIC PRSUs will be earned based on achievement of the portion of the Management Objectives measured by ROIC goals during the Performance Period, and from 0% to 200% of the RTSR PRSUs will be earned based on achievement of the portion of the Management Objectives measured by RTSR goals during the Performance Period, in each case as follows:

Performance Level	Return on Invested Capital	ROIC PRSUs Earned
Below Threshold	Below 6.0%	0%
Threshold	6.0%	25%
Target	7.5%	100%
Maximum	9.0% or greater	200%

Performance Level	Relative Total Shareholder Return	RTSR PRSUs Earned
Below Threshold	Ranked below 25 <sup>th</sup> percentile	0%
Threshold	Ranked at 25 <sup>th</sup> percentile	50%
Target	Ranked at 50 <sup>th</sup> percentile	100%
Maximum	Ranked at or above 80 <sup>th</sup> percentile	200%

Section 3. Number of PRSUs Earned . Following the Performance Period, on the Committee Determination Date, the Committee shall determine whether and to what extent the goals relating to the Management Objectives have been satisfied for the Performance Period and shall determine the number of PRSUs that shall become nonforfeitable hereunder and under the Agreement on the basis of the following:

- (a) Below Threshold . If, upon the conclusion of the Performance Period, (i) ROIC for the Performance Period falls below the threshold level, as set forth in the Performance Matrices, no ROIC PRSUs shall become nonforfeitable and (ii) RTSR for the Performance Period falls below the threshold level, as set forth in the Performance Matrices, no RTSR PRSUs shall become nonforfeitable.
- (b) Threshold . If, upon the conclusion of the Performance Period, (i) ROIC for the Performance Period equals the threshold level, as set

forth in the Performance Matrices, 25% of the ROIC PRSUs (rounded down to the nearest whole number of ROIC PRSUs) shall become nonforfeitable, and (ii) RTSR for the Performance Period equals the threshold level, as set forth in the Performance Matrices, 50% of the RTSR PRSUs (rounded down to the nearest whole number of RTSR PRSUs) shall become nonforfeitable.

- (c) Between Threshold and Target. If, upon the conclusion of the Performance Period, (i) ROIC for the Performance Period exceeds the threshold level, but is less than the target level, as set forth in the Performance Matrices, a percentage between 25% and 100% (determined on the basis of straight-line mathematical interpolation) of the ROIC PRSUs (rounded down to the nearest whole number of ROIC PRSUs) shall become nonforfeitable, and (ii) RTSR for the Performance Period exceeds the threshold level, but is less than the target level, as set forth in the Performance Matrices, a percentage between 50% and 100% (determined on the basis of straight-line mathematical interpolation) of the RTSR PRSUs (rounded down to the nearest whole number of RTSR PRSUs) shall become nonforfeitable.
- (d) Target. If, upon the conclusion of the Performance Period, (i) ROIC for the Performance Period equals the target level, as set forth in the Performance Matrices, 100% of the ROIC PRSUs shall become nonforfeitable, and (ii) RTSR for the Performance Period equals the target level, as set forth in the Performance Matrices, 100% of the RTSR PRSUs shall become nonforfeitable.
- (e) Between Target and Maximum. If, upon the conclusion of the Performance Period, (i) ROIC for the Performance Period exceeds the target level, but is less than the maximum level, as set forth in the Performance Matrices, a percentage between 100% and 200% (determined on the basis of straight-line mathematical interpolation) of the ROIC PRSUs (rounded down to the nearest whole number of ROIC PRSUs) shall become nonforfeitable, and (ii) RTSR for the Performance Period exceeds the target level, but is less than the maximum level, as set forth in the Performance Matrices, a percentage between 100% and 200% (determined on the basis of straight-line mathematical interpolation) of the RTSR PRSUs (rounded down to the nearest whole number of RTSR PRSUs) shall become nonforfeitable.
- (f) Equals or Exceeds Maximum. If, upon the conclusion of the Performance Period, (i) ROIC for the Performance Period equals or exceeds the maximum level, as set forth in the Performance Matrices, 200% of the ROIC PRSUs shall become nonforfeitable, and (ii) RTSR for the Performance Period equals or exceeds the maximum level, as set forth in the Performance Matrices, 200% of the RTSR PRSUs shall become nonforfeitable.

Before all or any portion of any Qualified Performance-Based Award of PRSUs shall become nonforfeitable or paid in accordance with this Statement of Management Objectives or the Agreement, the Committee shall determine in writing that the Management Objectives have been satisfied.

## Annex A

### Peer Group

Company Name	Ticker Symbol
II-VI Incorporated	IIVI
Atmel Corporation	ATML
Cabot Corporation	CBT
Carpenter Technology Corporation	CRS
A. M. Castle & Co.	CAS
Coherent, Inc.	COHR
Chemtura Corporation	CHMT
CTS Corporation	CTS
Entegris, Inc.	ENTG

Ferro Corporation	FOE
Haynes International, Inc.	HAYN
Horsehead Holding Corporation	ZINC
Integrated Device Technology, Inc.	IDTI
Kemet Corporation	KEM
Kraton Performance Polymers, Inc.	KRA
Minerals Technologies Inc.	MTX
Olympic Steel Inc.	ZEUS
PolyOne Corporation	POL
Quaker Chemical Corporation	KWR
Rogers Corporation	ROG

**EXHIBIT A**

**MATERION CORPORATION**  
**BENEFICIARY DESIGNATIONS**

In accordance with the terms and conditions of the Materion Corporation 2006 Stock Incentive Plan (As Amended and Restated as of May 7, 2014) (the "Plan"), I hereby designate the person(s) indicated below as my beneficiary(ies) to receive any amounts payable under said Plan after my death.

Name \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Social Sec. Nos. of Beneficiary(ies) \_\_

Relationship(s) \_\_

Date(s) of Birth \_\_

In the event that the above-named beneficiary(ies) predecease(s) me, I hereby designate the following person as beneficiary(ies);

Name \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Social Sec. Nos. of Beneficiary(ies) \_\_

Relationship(s) \_\_

Date(s) of Birth \_\_

I hereby expressly revoke all prior designations of beneficiary(ies), reserve the right to change the beneficiary(ies) herein designated and agree that the rights of said beneficiary(ies) shall be subject to the terms of the Plan. In the event that there is no beneficiary living at the time of my death, I understand that the amounts payable under the Plan will be paid to my estate.

\_\_\_\_\_  
Date (Signature)

\_\_\_\_\_  
(Print or type name)

Subsidiaries of Registrant

The Company has the following subsidiaries, all of which are wholly owned and included in the consolidated financial statements.

Name of Subsidiary	State or Country of Incorporation
Aerospace Metal Composites Limited	England
Egbert Corp.	Ohio
WAM Acquisition Corp.	New York
Zentrix Liquidation Corp. Note A	California
Materion Acquisition Corp.	New York
Materion Advanced Chemicals Inc.	Wisconsin
Materion Advanced Materials Technologies and Services Netherlands BV	Netherlands
Materion Advanced Materials Technologies and Services Suzhou Ltd.	China
Materion Advanced Materials Technologies and Services Corp.	New Mexico
Materion Advanced Materials Technologies and Services Far East PTE Ltd.	Singapore
Materion Advanced Materials Technologies and Services Inc.	New York
Materion Advanced Materials Technologies and Services Taiwan Co. Ltd.	Taiwan
Materion Brewster LLC	New York
Materion Brush (Japan) Ltd.	Japan
Materion Brush (Singapore) PTE Ltd.	Singapore
Materion Brush GmbH	Germany
Materion Brush Inc.	Ohio
Materion Brush International Inc.	Ohio
Materion Brush Ltd.	England
Materion Ceramics Inc.	Arizona
Materion Czech S.R.O.	Czech Republic
Materion Holdings Co. Inc.	New York
Materion Ireland Holdings Ltd.	Ireland
Materion Ireland Ltd.	Ireland
Materion Large Area Coatings LLC	Delaware
Materion Natural Resources Inc.	Utah
Materion Performance Alloys and Composites Netherlands BV	Netherlands
Materion Performance Alloys and Composites Hong Kong Ltd.	China
Materion Performance Alloys and Composites Taiwan Co. Ltd.	Taiwan
Materion Precision Optics (Korea) Limited	Korea
Materion Precision Optics (Shanghai) Limited	China
Materion Precision Optics (Japan) GK	Japan
EIS Optics Limited (U.K.)	England
Materion Precision Optics and Thin Film Coatings Corporation	California
Materion Precision Optics and Thin Film Coatings Inc.	Massachusetts
Materion Services Inc.	Ohio
Materion Technical Materials Inc.	Ohio
Materion Technologies Inc.	Arizona

## Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the following Registration Statements:

- (1) Registration Statement Number 333-88994 on Form S-8 dated May 24, 2002;
- (2) Post-Effective Amendment Number 1 to Registration Statement Number 333-52141 on Form S-8 dated May 17, 2000;
- (3) Registration Statement Number 333-63357 on Form S-8 dated September 14, 1998;
- (4) Registration Statement Number 333-52141 on Form S-8 dated May 5, 1998;
- (5) Post-Effective Amendment Number 3 to Registration Statement Number 2-64080 on Form S-8 dated April 22, 1983;
- (6) Registration Statement Number 333-114147 on Form S-3 dated July 1, 2004;
- (7) Registration Statement Number 333-127130 on Form S-8 dated August 3, 2005;
- (8) Registration Statement Number 333-133428 on Form S-8 dated April 20, 2006;
- (9) Registration Statement Number 333-133429 on Form S-8 dated April 20, 2006;
- (10) Registration Statement Number 333-145149 on Form S-8 dated August 6, 2007;
- (11) Registration Statement Number 333-173915 on Form S-8 dated May 4, 2011;
- (12) Registration Statement Number 333-173916 on Form S-8 dated May 4, 2011;
- (13) Registration Statement Number 333-173917 on Form S-8 dated May 4, 2011;
- (14) Registration Statement Number 333-184723 on Form S-3 dated November 2, 2012;
- (15) Registration Statement Number 333-195761 on Form S-8 dated May 7, 2014; and
- (16) Registration Statement Number 333-195762 on Form S-8 dated May 7, 2014.

of our report dated February 25, 2016, with respect to the consolidated financial statements and schedule of Materion Corporation and subsidiaries and our report dated February 27, 2015, with respect to the effectiveness of internal control over financial reporting of Materion Corporation and subsidiaries both included in this Annual Report (Form 10-K) of Materion Corporation and subsidiaries for the year ended December 31, 2015.

Cleveland, Ohio  
February 25, 2016

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that each of the undersigned directors and officers of MATERION CORPORATION, an Ohio corporation (the “Corporation”), hereby constitutes and appoints Richard J. Hipple, Joseph P. Kelley, Michael C. Hasychak and Michael J. Solecki, and each of them, their true and lawful attorney or attorneys-in-fact, with full power of substitution and revocation, for them and in their names, place and stead, to sign on their behalf as a director or officer, or both, as the case may be, of the Corporation, an Annual Report pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 on Form 10-K for the fiscal year ended December 31, 2015, and to sign any and all amendments to such Annual Report, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission granting unto said attorney or attorneys-in-fact, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as they might or could do in person, hereby ratifying and confirming all that said attorney or attorneys-in-fact or any of them or their substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

IN WITNESS WHEREOF, the undersigned have hereunto set their hands as of the 25th day of February, 2016.

/s/ RICHARD J. HIPPLE

Richard J. Hipple, Chairman of the Board, President,  
Chief Executive Officer and Director  
(Principal Executive Officer)

/s/ JOSEPH P. KELLEY

Joseph P. Kelley, Vice President, Finance  
and Chief Financial Officer  
(Principal Financial and Accounting Officer)

/s/ EDWARD F. CRAWFORD

Edward F. Crawford, Director

/s/ JOSEPH P. KEITHLEY

Joseph P. Keithley, Director

/s/ VINOD M. KHILNANI

Vinod M. Khilnani, Director

/s/ WILLIAM B. LAWRENCE

William B. Lawrence, Director

/s/ N. MOHAN REDDY

N. Mohan Reddy, Director

/s/ CRAIG S. SHULAR

Craig S. Shular, Director

/s/ DARLENE J. S. SOLOMON

Darlene J. S. Solomon, Director

/s/ ROBERT B. TOTH

Robert B. Toth, Director

/s/ GEOFFREY WILD

Geoffrey Wild, Director

CERTIFICATIONS

I, Richard J. Hipple, certify that:

- 1) I have reviewed this annual report on Form 10-K of Materion Corporation (the “registrant”);
- 2) Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
- 3) Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
- 4) The registrant’s other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
  - a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
  - b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - c) evaluated the effectiveness of the registrant’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
  - d) disclosed in this report any change in the registrant’s internal control over financial reporting that occurred during the registrant’s most recent fiscal quarter (the registrant’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant’s internal control over financial reporting; and
- 5) The registrant’s other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant’s auditors and the audit committee of the registrant’s board of directors (or persons performing the equivalent functions):
  - a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant’s ability to record, process, summarize and report financial information; and
  - b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant’s internal control over financial reporting.

Dated: February 25, 2016

/s/ Richard J. Hipple

---

Richard J. Hipple  
Chairman, President and  
Chief Executive Officer



CERTIFICATIONS

I, Joseph P. Kelley, certify that:

- 1) I have reviewed this annual report on Form 10-K of Materion Corporation (the “registrant”);
- 2) Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
- 3) Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
- 4) The registrant’s other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
  - a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
  - b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - c) evaluated the effectiveness of the registrant’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
  - d) disclosed in this report any change in the registrant’s internal control over financial reporting that occurred during the registrant’s most recent fiscal quarter (the registrant’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant’s internal control over financial reporting; and
- 5) The registrant’s other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant’s auditors and the audit committee of the registrant’s board of directors (or persons performing the equivalent functions):
  - a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant’s ability to record, process, summarize and report financial information; and
  - b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant’s internal control over financial reporting.

Dated: February 25, 2016

/s/ Joseph P. Kelley

Joseph P. Kelley

Vice President, Finance and  
Chief Financial Officer

Certification Pursuant to  
18 U.S.C. Section 1350,  
As Adopted Pursuant to  
Section 906 of the Sarbanes-Oxley Act of 2002

Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, in connection with the filing of the Annual Report on Form 10-K of Materion Corporation (the "Company") for the year ended December 31, 2015, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), each of the undersigned officers of the Company certifies, that, to such officer's knowledge:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m or 78o(d)), and
2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company as of the dates and for the periods expressed in the Report.

Dated: February 25, 2016

/s/ Richard J. Hipple

---

Richard J. Hipple  
Chairman of the Board, President and  
Chief Executive Officer

/s/ Joseph P. Kelley

---

Joseph P. Kelley  
Vice President, Finance and  
Chief Financial Officer

**Materion Corporation**

**Mine Safety Disclosure Pursuant to Section 1503(a) of the Dodd-Frank Wall Street Reform and  
Consumer Protection Act for the Year Ended December 31, 2015**

Materion Natural Resources Inc., a wholly owned subsidiary, operates a beryllium mining complex in the State of Utah which is regulated by both the U.S. Mine Safety and Health Administration (“MSHA”) and state regulatory agencies. We endeavor to conduct our mining and other operations in compliance with all applicable federal, state and local laws and regulations. We present information below regarding certain mining safety and health citations which MSHA has levied with respect to our mining operations.

Section 1503(a) of the Dodd-Frank Wall Street Reform and Consumer Protection Act (“Section 1503(a)”) requires the Company to present certain information regarding mining safety in its periodic reports filed with the Securities and Exchange Commission.

The following table reflects citations, orders and notices issued to Materion Natural Resources Inc. by MSHA during the year ended December 31, 2015 (the “Reporting Period”) and contains certain additional information as required by Section 1503(a) and Item 104 of Regulation S-K, including information regarding mining-related fatalities, proposed assessments from MSHA and legal actions (“Legal Actions”) before the Federal Mine Safety and Health Review Commission, an independent adjudicative agency that provides administrative trial and appellate review of legal disputes arising under the Mine Act.

Included below is the information required by Section 1503(a) with respect to the beryllium mining complex (MSHA Identification Number 4200706) for the Reporting Period:

(A)	Total number of alleged violations of mandatory health or safety standards that could significantly and substantially contribute to the cause and effect of a mine safety or health hazard under Section 104 of the Mine Act for which Materion Natural Resources Inc. received a citation from MSHA	3
(B)	Total number of orders issued under Section 104(b) of the Mine Act	0
(C)	Total number of citations and orders for alleged unwarrantable failure by Materion Natural Resources Inc. to comply with mandatory health or safety standards under Section 104(d) of the Mine Act	0
(D)	Total number of alleged flagrant violations under Section 110(b)(2) of the Mine Act	0
(E)	Total number of imminent danger orders issued under Section 107(a) of the Mine Act	0
(F)	Total dollar value of proposed assessments from MSHA under the Mine Act	\$2,950
(G)	Total number of mining-related fatalities	0
(H)	Received notice from MSHA of a pattern of violations under Section 104(e) of the Mine Act	No
(I)	Received notice from MSHA of the potential to have a pattern of violations under Section 104(e) of the Mine Act	No
(J)	Total number of Legal Actions pending as of the last day of the Reporting Period	5
(K)	Total number of Legal Actions instituted during the Reporting Period	5
(L)	Total number of Legal Actions resolved during the Reporting Period	0