

MATERION Corp
Form 10-Q
July 26, 2018
UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-Q
(Mark One)

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

For the quarterly period ended June 29, 2018

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 001-15885

MATERION CORPORATION
(Exact name of Registrant as specified in charter)

Ohio 34-1919973
(State or other jurisdiction of incorporation or organization) (I.R.S. Employer Identification No.)

6070 Parkland Blvd., Mayfield Heights, Ohio 44124
(Address of principal executive offices) (Zip Code)

Registrant's telephone number, including area code:
216-486-4200

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 whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer Accelerated filer
Non-accelerated filer

(Do not check if a smaller reporting company)

Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

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

Number of Shares of Common Stock, without par value, outstanding at June 29, 2018: 20,235,856.

PART 1 - FINANCIAL INFORMATION

Item 1. Financial Statements

Materion Corporation and Subsidiaries
Consolidated Statements of Income
(Unaudited)

	Second Quarter		Six Months Ended	
	June 29, 2018	June 30, 2017	June 29, 2018	June 30, 2017
(Thousands, except per share amounts)				
Net sales	\$309,085	\$295,842	\$612,552	\$536,511
Cost of sales	247,247	241,064	492,434	438,577
Gross margin	61,838	54,778	120,118	97,934
Selling, general, and administrative expense	38,473	37,928	76,935	71,449
Research and development expense	3,860	3,544	7,503	6,674
Other—net	4,313	3,204	7,237	6,022
Operating profit	15,192	10,102	28,443	13,789
Interest expense—net	667	695	1,397	1,188
Other non-operating expense—net	437	368	879	635
Income before income taxes	14,088	9,039	26,167	11,966
Income tax expense	2,944	1,726	4,459	1,603
Net income	\$11,144	\$7,313	\$21,708	\$10,363
Basic earnings per share:				
Net income per share of common stock	\$0.55	\$0.37	\$1.08	\$0.52
Diluted earnings per share:				
Net income per share of common stock	\$0.54	\$0.36	\$1.05	\$0.51
Cash dividends per share	\$0.105	\$0.100	\$0.205	\$0.195
Weighted-average number of shares of common stock outstanding:				
Basic	20,221	20,012	20,178	19,991
Diluted	20,593	20,347	20,583	20,348

The accompanying notes are an integral part of the consolidated financial statements.

Materion Corporation and Subsidiaries
 Consolidated Statements of Comprehensive Income
 (Unaudited)

(Thousands)	Second Quarter Ended		Six Months Ended	
	June 29, 2018	June 30, 2017	June 29, 2018	June 30, 2017
Net income	\$11,144	\$7,313	\$21,708	\$10,363
Other comprehensive income (loss):				
Foreign currency translation adjustment	(944)	275	169	1,378
Derivative and hedging activity, net of tax	1,763	(174)	1,088	(635)
Pension and post-employment benefit adjustment, net of tax	1,296	759	2,574	1,516
Other comprehensive income	2,115	860	3,831	2,259
Comprehensive income	\$13,259	\$8,173	\$25,539	\$12,622

The accompanying notes are an integral part of the consolidated financial statements.

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Materion Corporation and Subsidiaries
Consolidated Balance Sheets

	(Unaudited)	
	June 29, 2018	Dec. 31, 2017
(Thousands)		
Assets		
Current assets		
Cash and cash equivalents	\$ 42,895	\$ 41,844
Accounts receivable	135,699	124,014
Inventories	209,204	220,352
Prepaid and other current assets	19,617	24,733
Total current assets	407,415	410,943
Long-term deferred income taxes	16,588	17,047
Property, plant, and equipment	894,306	891,789
Less allowances for depreciation, depletion, and amortization	(637,730)	(636,211)
Property, plant, and equipment—net	256,576	255,578
Intangible assets—net	7,899	9,847
Other assets	6,991	6,992
Goodwill	90,697	90,677
Total Assets	\$ 786,166	\$ 791,084
Liabilities and Shareholders' Equity		
Current liabilities		
Short-term debt	\$ 798	\$ 777
Accounts payable	46,240	49,059
Salaries and wages	32,299	42,694
Other liabilities and accrued items	27,182	28,044
Income taxes	2,994	1,084
Unearned revenue	7,576	5,451
Total current liabilities	117,089	127,109
Other long-term liabilities	14,203	14,895
Capital lease obligations	15,896	16,072
Retirement and post-employment benefits	80,944	93,225
Unearned income	34,734	36,905
Long-term income taxes	4,896	4,857
Long-term deferred income taxes	210	213
Long-term debt	2,453	2,827
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 27,148 at June 29 and December 31)	230,763	223,484
Retained earnings	553,523	536,116
Common stock in treasury (6,912 shares at June 29 and 7,042 shares at December 31)	(173,825)	(166,128)
Accumulated other comprehensive loss	(99,106)	(102,937)
Other equity transactions	4,386	4,446
Total shareholders' equity	515,741	494,981
Total Liabilities and Shareholders' Equity	\$ 786,166	\$ 791,084

The accompanying notes are an integral part of the consolidated financial statements.

Materion Corporation and Subsidiaries
Consolidated Statements of Cash Flows
(Unaudited)

	Six Months Ended	
(Thousands)	June 29, 2018	June 30, 2017
Cash flows from operating activities:		
Net income	\$21,708	\$10,363
Adjustments to reconcile net income to net cash provided from (used in) operating activities:		
Depreciation, depletion, and amortization	18,349	20,725
Amortization of deferred financing costs in interest expense	514	440
Non-cash compensation expense	5,412	5,816
Deferred income tax expense	429	658
Changes in assets and liabilities net of acquired assets and liabilities:		
Decrease (increase) in accounts receivable	(12,060)	(30,882)
Decrease (increase) in inventories	10,428	(6,498)
Decrease (increase) in prepaid and other current assets	4,928	(9,267)
Increase (decrease) in accounts payable and accrued expenses	(14,189)	15,519
Increase (decrease) in unearned revenue	2,132	1,685
Increase (decrease) in interest and taxes payable	2,084	(1,115)
Domestic pension plan contributions	(13,000)	(4,000)
Other-net	2,569	(3,141)
Net cash provided by operating activities	29,304	303
Cash flows from investing activities:		
Payments for purchase of property, plant, and equipment	(17,153)	(11,252)
Payments for mine development	(3,425)	(509)
Payments for acquisition	—	(16,504)
Proceeds from sale of property, plant, and equipment	27	27
Net cash used in investing activities	(20,551)	(28,238)
Cash flows from financing activities:		
Proceeds from issuance of short-term debt	—	2,387
Proceeds from issuance of long-term debt	—	45,000
Repayment of long-term debt	(383)	(25,362)
Principal payments under capital lease obligations	(425)	(383)
Cash dividends paid	(4,137)	(3,899)
Deferred financing costs	—	(300)
Repurchase of common stock	—	(1,086)
Payments of withholding taxes for stock-based compensation awards	(2,765)	(2,302)
Net cash (used in) provided by financing activities	(7,710)	14,055
Effects of exchange rate changes	8	913
Net change in cash and cash equivalents	1,051	(12,967)
Cash and cash equivalents at beginning of period	41,844	31,464
Cash and cash equivalents at end of period	\$42,895	\$18,497

The accompanying notes are an integral part of the consolidated financial statements.

Materion Corporation and Subsidiaries
Notes to Consolidated Financial Statements
(Unaudited)

Note A — Accounting Policies

Basis of Presentation: In management's opinion, the accompanying consolidated financial statements of Materion Corporation and its subsidiaries (referred to herein as the Company, our, we, or us) contain all of the adjustments necessary to present fairly the financial position, results of operations, and cash flows for the interim periods reported. All adjustments were of a normal and recurring nature. Certain amounts in prior periods have been reclassified to conform to the 2018 consolidated financial statement presentation.

These financial statements should be read in conjunction with the consolidated financial statements and related notes included in the Company's 2017 Annual Report on Form 10-K. The interim period results are not necessarily indicative of the results to be expected for the full year.

New Pronouncements Adopted: In March 2017, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) 2017-07, Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost, which requires an employer to report the service cost component of net benefit cost in the same line item as other compensation costs arising from services rendered by pertinent employees during the period. This ASU requires non-service cost components of net benefit cost to be presented in a caption below the Company's Operating profit and allows only the service cost component to be eligible for capitalization. This ASU is effective for fiscal years beginning after December 15, 2017, including interim periods within those periods, with early adoption permitted. The amendments were applied retrospectively for the presentation of service cost and other components of net benefit cost on the income statement and prospectively for the capitalization of service cost and net periodic postretirement benefits in assets. The application of ASU 2017-07 resulted in an increase to Operating profit of \$0.4 million and \$0.6 million for the second quarter and first six months of 2017, respectively, which was offset by a corresponding increase in Other non-operating expense, net. The adoption of this ASU did not have a material effect on the Company's financial condition or liquidity. The Company utilized this ASU's practical expedient, which permits the Company to use the amounts disclosed in its Pensions and Other Post-employment Benefits note for the prior comparative periods as the estimation basis for applying the retrospective presentation requirements.

In May 2014, the FASB issued ASU 2014-09, Revenue from Contracts with Customers (ASC 606), which supersedes previous revenue recognition guidance. The Company adopted the new standard using the modified retrospective method as of January 1, 2018. Prior periods were not retrospectively adjusted. This approach was applied to all contracts not completed as of January 1, 2018. The new standard primarily impacted the Company's timing of revenue recognition for certain contracts and subcontracts with the United States (U.S.) government that contain termination for convenience clauses, and due to the cumulative impact of adopting ASC 606, the Company recorded a reduction to beginning retained earnings of \$0.4 million, net of tax as summarized below:

(Thousands)	December 31, 2017	Adjustments due to ASC 606	January 1, 2018
Assets			
Unbilled receivables	\$ —	\$ 2,658	\$ 2,658
Inventories	220,352	(2,059)	218,293
Liabilities and Shareholders' Equity			
Other liabilities and accrued items	\$ 28,044	61	28,105
Deferred income taxes	213	113	326

Retained earnings	536,116	425	536,541
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The adoption of the standard did not have a material impact to the Company's consolidated financial statements. Refer to Note B for additional disclosures relating to ASC 606.

Materion Corporation and Subsidiaries
Notes to Consolidated Financial Statements
(Unaudited)

New Pronouncements Issued: In August 2017, the FASB issued ASU 2017-12, Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities, which amends and simplifies existing guidance to allow companies to more accurately present the economic effects of risk management activities in the financial statements. This ASU is effective for fiscal years beginning after December 15, 2018, including interim periods within those periods, with early adoption permitted. The Company is currently evaluating the impact of adopting this new guidance on its consolidated financial statements.

In February 2016, the FASB issued ASU 2016-02, Leases, which eliminates the off-balance-sheet accounting for leases. The new guidance will require lessees to report their operating leases as both an asset and liability on the balance sheet and disclose key information about leasing arrangements. The Company will adopt this ASU on January 1, 2019. In preparation for the adoption, the Company, along with an outside consultant, has executed on its project plan to identify a complete lease population, analyze lease agreements, and evaluate technology solutions. Currently, this ASU is required to be applied on a modified retrospective basis. The FASB has proposed another transition method in addition to the existing requirements to transition to the new lease standard by recognizing a cumulative effect adjustment to the opening balance of retained earnings in the period of adoption. The Company has not decided on its transition method to adopt this new guidance.

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

Note B — Revenue Recognition

Net sales consist primarily of revenue from the sale of precious and non-precious specialty metals, beryllium and copper-based alloys, beryllium composites, and other products into numerous end markets. The Company requires an agreement with a customer that creates enforceable rights and performance obligations. The Company generally recognizes revenue, in an amount that reflects the consideration to which it expects to be entitled, upon satisfaction of a performance obligation by transferring control over a product to the customer. Control over the product is generally transferred to the customer when the Company has a present right to payment, the customer has legal title, the customer has physical possession, the customer has the significant risks and rewards of ownership, and/or the customer has accepted the product.

Shipping and Handling Costs: The Company accounts for shipping and handling activities related to contracts with customers as costs to fulfill our promise to transfer the associated products. Accordingly, customer payments of shipping and handling costs are recorded as a component of net sales, and related costs are recorded as a component of cost of sales.

Taxes Collected from Customers and Remitted to Governmental Authorities: Revenue is recorded net of taxes collected from customers that are remitted to governmental authorities, with the collected taxes recorded as current liabilities until remitted to the relevant government authority.

Product Warranty: Substantially all of the Company's customer contracts contain a warranty that provides assurance that the purchased product will function as expected and in accordance with certain specifications. The warranty is intended to safeguard the customer against existing defects and does not provide any incremental service to the customer.

Transaction Price Allocated to Future Performance Obligations: ASC 606 requires that the Company disclose the aggregate amount of transaction price that is allocated to performance obligations that have not yet been satisfied at June 29, 2018. Remaining performance obligations include noncancelable purchase orders and customer contracts.

The guidance provides certain practical expedients that limit this requirement. As such, the Company does not disclose the value of unsatisfied performance obligations for contracts with an original expected length of one year or less. After considering the practical expedient, at June 29, 2018, the aggregate amount of the transaction price allocated to remaining performance obligations was approximately \$36.0 million, of which \$7.5 million will be recognized in 2018.

Contract Costs: The Company recognizes the incremental costs of obtaining contracts as an expense when incurred if the amortization period of the assets that the Company otherwise would have recognized is one year or less. These costs primarily relate to sales commissions, which are included in selling, general, and administrative expenses.

Materion Corporation and Subsidiaries
Notes to Consolidated Financial Statements
(Unaudited)

Contract Balances: The timing of revenue recognition, billings and cash collections resulted in the following contract assets and contract liabilities:

(Thousands)	June 29, 2018	January 1, 2018	\$ change	% change
Accounts receivable, trade	\$128,450	\$122,393	\$6,057	5 %
Unbilled receivables	6,341	2,658	3,683	139 %
Unearned revenue	7,576	5,451	2,125	39 %

Accounts receivable, trade represents payments due from customers relating to the transfer of the Company's products and services. The Company believes that its receivables are collectible and appropriate allowances for doubtful accounts have been recorded. Impairment losses (bad debt) incurred relating to our receivables were immaterial during the second quarter and first six months of 2018.

Unbilled receivables represent expenditures on contracts, plus applicable profit margin, not yet billed. Unbilled receivables are normally billed and collected within one year. Billings made on contracts are recorded as a reduction of unbilled receivables.

Unearned revenue is recorded for consideration received from customers in advance of satisfaction of the related performance obligations.

As a practical expedient, the Company does not adjust the promised amount of consideration for the effects of a significant financing component because the period between the transfer of a product or service to a customer and when the customer pays for that product or service will be one year or less. The Company does not include extended payment terms in its contracts with customers.

Note C — Acquisitions

On February 28, 2017, the Company acquired the target materials business of the Heraeus Group (HTB), of Hanau, Germany, for \$16.5 million. This business manufactures precious and non-precious metal target materials for the architectural and automotive glass, electronic display, photovoltaic, and semiconductor markets at facilities in Germany, Taiwan, and the United States. This business operates within the Advanced Materials segment, and the results of operations are included as of the date of acquisition.

Materion Corporation and Subsidiaries
Notes to Consolidated Financial Statements
(Unaudited)

The final purchase price allocation for the acquisition is as follows:

(Thousands)	Amount
Assets:	
Inventories	\$7,221
Prepaid and other current assets	2,270
Long-term deferred income taxes	14
Property, plant, and equipment	6,501
Intangible assets	3,649
Goodwill	3,574
Total assets acquired	\$23,229
Liabilities:	
Other liabilities and accrued items	\$984
Other long-term liabilities	449
Retirement and post-employment benefits	5,292
Total liabilities assumed	\$6,725
Total purchase price	\$16,504

No material measurement period adjustments were recorded upon finalizing the purchase price allocation in the first quarter of 2018.

Note D — Segment Reporting

The Company has the following reportable segments: Performance Alloys and Composites, Advanced Materials, Precision Coatings, and Other. The Company's reportable segments represent components of the Company for which separate financial information is available that is utilized on a regular basis by the Chief Executive Officer, the Company's Chief Operating Decision Maker, in determining how to allocate the Company's resources and evaluate performance.

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.

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

The Other reportable segment includes unallocated corporate costs and assets.

(Thousands)	Performance Alloys and Composites	Advanced Materials	Precision Coatings	Other	Total
Second Quarter 2018					
Net sales	\$ 129,765	\$ 150,324	\$ 28,996	\$ —	\$ 309,085
Intersegment sales	3	11,400	—	—	11,403
Value-added sales	110,150	57,267	23,393	(908)	189,902
Operating profit (loss)	12,309	5,572	2,233	(4,922)	15,192
Second Quarter 2017					
Net sales	\$ 108,541	\$ 157,044	\$ 30,257	\$ —	\$ 295,842
Intersegment sales	4	13,247	—	—	13,251
Value-added sales	92,686	62,041	22,613	(1,241)	176,099
Operating profit (loss)	5,548	8,670	2,314	(6,430)	10,102
First Six Months 2018					
Net sales	\$ 248,001	\$ 303,869	\$ 60,682	\$ —	\$ 612,552
Intersegment sales	31	23,052	—	—	23,083
Value-added sales	210,449	115,550	47,034	(1,818)	371,215
Operating profit (loss)	22,170	11,470	5,608	(10,805)	28,443
First Six Months 2017					
Net sales	\$ 201,094	\$ 271,780	\$ 63,637	\$ —	\$ 536,511
Intersegment sales	59	29,694	—	—	29,753
Value-added sales	171,897	109,329	45,914	(2,060)	325,080
Operating profit (loss)	5,737	15,117	4,532	(11,597)	13,789

The following table disaggregates revenue for each segment by end market for the second quarter and first six months of 2018:

(Thousands)	Performance Alloys and Composites	Advanced Materials	Precision Coatings	Other	Total
Second Quarter 2018					
End Market					
Consumer Electronics	\$ 26,469	\$ 88,230	\$ 5,035	\$ —	—\$119,734
Industrial Components	25,025	11,501	2,900	—	39,426
Energy	10,202	16,311	8	—	26,521
Automotive Electronics	19,879	—	469	—	20,348
Defense	14,932	3,353	4,887	—	23,172
Medical	1,816	4,712	14,455	—	20,983
Telecom Infrastructure	10,890	7,968	—	—	18,858
Other	20,552	18,249	1,242	—	40,043
Total	\$ 129,765	\$ 150,324	\$ 28,996	\$ —	—\$309,085
First Six Months 2018					
End Market					
Consumer Electronics	\$ 51,827	\$ 170,280	\$ 9,314	\$ —	—\$231,421
Industrial Components	53,546	24,800	5,392	—	83,738
Energy	18,006	39,747	8	—	57,761
Automotive Electronics	38,849	—	691	—	39,540
Defense	21,554	7,838	9,202	—	38,594
Medical	3,559	9,121	33,525	—	46,205
Telecom Infrastructure	18,984	15,325	59	—	34,368
Other	41,676	36,758	2,491	—	80,925
Total	\$ 248,001	\$ 303,869	\$ 60,682	\$ —	—\$612,552

Intersegment sales are eliminated in consolidation.

Note E — Other-net

Other-net expense for the second quarter and first six months of 2018 and 2017 is summarized as follows:

(Thousands)	Second Quarter		Six Months	
	Ended June 29, 2018	Ended June 30, 2017	Ended June 29, 2018	Ended June 30, 2017
Metal consignment fees	\$2,588	\$2,062	\$5,017	\$3,747
Amortization of intangible assets	561	1,232	1,334	2,277
Foreign currency exchange/translation (gain)	1,230	(336)	1,219	(593)
Net (gain) loss on disposal of fixed assets	(3)	119	23	147
Other items	(63)	127	(356)	444
Total	\$4,313	\$3,204	\$7,237	\$6,022

Materion Corporation and Subsidiaries
Notes to Consolidated Financial Statements
(Unaudited)

Note F — Income Taxes

On December 22, 2017, the Tax Cuts and Jobs Act (TCJA) was signed into law. The TCJA includes a number of provisions, including: (1) the lowering of the U.S. corporate tax rate from 35% to 21%; (2) elimination of the corporate alternative minimum tax (AMT); (3) the creation of the base erosion anti-abuse tax (BEAT, a new minimum tax); (4) a general elimination of the U.S. federal income taxes on dividends from foreign subsidiaries; (5) a new provision designed to tax global intangible low-taxed income (GILTI), which allows for the possibility of using foreign tax credits (FTCs) and a deduction of up to 50% to offset the income tax liability (subject to some limitations); (6) a new limitation on deductible interest expense; (7) the repeal of the domestic production activity deduction; and (8) limitations on the deductibility of certain executive compensation.

The Company recorded income tax expense of \$2.9 million in the second quarter of 2018, an effective tax rate of 20.9% against income before income taxes, and income tax expense of \$1.7 million in the second quarter of 2017, an effective tax rate of 19.1% against income before income taxes.

In the first six months of 2018, income tax expense of \$4.5 million was calculated using an effective tax rate of 17.0%, while income tax expense of \$1.6 million in the first six months of 2017 was calculated using an effective tax rate of 13.4%.

In the second quarter and first six months of 2018, income tax expense differed from the U.S. Federal statutory income tax rate of 21% primarily due to the impact of foreign losses in jurisdictions that will not result in tax benefits, percentage depletion, U.S. research and development credit, the new GILTI income inclusion, the new executive compensation limitations, and a discrete tax adjustment of \$0.1 million. The Company does not expect to incur a new BEAT minimum tax or an interest expense limitation.

In the second quarter and first six months of 2017, income tax expense differed from the U.S. Federal statutory income tax rate of 35% primarily due to the impact of percentage depletion, foreign rate differential, U.S. research and development credit, and a discrete tax benefit of \$0.7 million related to officer compensation and the adoption of ASU 2016-09, Improvements to Employee Share-based Payment Accounting.

As disclosed in Note G (Income Taxes) in the Company's 2017 Annual Report on Form 10-K, the Company was able to reasonably estimate certain TCJA effects and, therefore, recorded provisional adjustments associated with the deemed repatriation transition tax and remeasurement of certain deferred tax asset and liabilities. As of the second quarter of 2018, the Company's accounting for the TCJA is incomplete and the previously disclosed provisional amounts (transition tax and remeasurement of deferred taxes) continue to be provisional.

The Company has not made any additional measurement-period adjustments related to the transition tax during 2018 because the calculation of the total post-1986 earnings and profits (E&P) for these foreign subsidiaries has not yet been completed. Further, the transition tax is based in part on the amount of those earnings held in cash and other specified assets. This amount may change when the Company finalizes the calculation of post-1986 foreign E&P previously deferred from U.S. federal taxation and finalizes the amounts held in cash or other specified assets. The Company is continuing to gather additional information to complete its accounting for these items and expects to complete its accounting within the prescribed measurement period. No additional income taxes have been provided for any remaining undistributed foreign earnings not subject to the transition tax, or any additional outside basis difference inherent in these entities, as these amounts continue to be indefinitely reinvested in foreign operations.

The Company was able to reasonably estimate the remeasurement of certain deferred tax asset and liabilities at an initial provisional amount to be \$5.0 million of additional income tax expense for the year ended December 31, 2017. The total adjustment to tax expense related to the remeasurement of certain deferred tax asset and liabilities that has been recorded to date is \$4.4 million. However, the Company is continuing to gather additional information to more precisely compute the amount of the tax expense related to remeasurement. The accounting for this item is not yet complete because judgment is required with respect to the timing and deductibility of certain expenses in the Company's income tax return.

Materion Corporation and Subsidiaries
Notes to Consolidated Financial Statements
(Unaudited)

Due to the complexity of the new GILTI tax rules, the Company is continuing to evaluate this provision of the TCJA and the application of the Accounting Standards Codification 740, Income Taxes. Under U.S. GAAP, the Company is allowed to make an accounting policy choice of either (1) treating taxes due on future U.S. inclusions in taxable income related to GILTI as a current-period expense when incurred (the period cost method) or (2) factoring such amounts into the Company's measurement of its deferred taxes (the deferred method). The Company's selection of an accounting policy related to the new GILTI tax rules will depend on a number of different aspects of the estimated long-term effects of this provision under the TCJA. Therefore, the Company has not recorded any potential deferred tax effects related to the GILTI in the financial statements and has not made a policy decision regarding whether to record deferred taxes on GILTI or use the period cost method. However, the Company has included an estimate of the 2018 current GILTI impact in the annual effective tax rate for 2018.

Note G — Earnings Per Share (EPS)

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

	Second Quarter Ended		Six Months Ended	
	June 29, 2018	June 30, 2017	June 29, 2018	June 30, 2017
(Thousands, except per share amounts)				
Numerator for basic and diluted EPS:				
Net income	\$11,144	\$7,313	\$21,708	\$10,363
Denominator:				
Denominator for basic EPS:				
Weighted-average shares outstanding	20,221	20,012	20,178	19,991
Effect of dilutive securities:				
Stock appreciation rights	166	125	185	152
Restricted stock units	75	102	85	102
Performance-based restricted stock units	131	108	135	103
Diluted potential common shares	372	335	405	357
Denominator for diluted EPS:				
Adjusted weighted-average shares outstanding	20,593	20,347	20,583	20,348
Basic EPS	\$0.55	\$0.37	\$1.08	\$0.52
Diluted EPS	\$0.54	\$0.36	\$1.05	\$0.51

Securities totaling 65,112 and 349,068 for the quarters ended June 29, 2018 and June 30, 2017, respectively, and 65,112 and 382,426 for the six months ended June 29, 2018 and June 30, 2017, respectively, were excluded from the dilution calculation as their effect would have been anti-dilutive.

Materion Corporation and Subsidiaries
Notes to Consolidated Financial Statements
(Unaudited)

Note H — Inventories

Inventories on the Consolidated Balance Sheets are summarized as follows:

	June 29, 2018	December 31, 2017
(Thousands)		
Raw materials and supplies	\$40,550	\$42,958
Work in process	176,216	187,719
Finished goods	41,017	34,418
Subtotal	\$257,783	\$265,095
Less: LIFO reserve balance	48,579	44,743
Inventories	\$209,204	\$220,352

The liquidation of last in, first out (LIFO) inventory layers increased cost of sales by \$0.1 million in both the second quarter and first six months of 2018. In both the second quarter and first six months of 2017, cost of sales was increased by \$0.2 million.

Note I — Pensions and Other Post-employment Benefits

The following is a summary of the net periodic benefit cost for the second quarter and first six months of 2018 and 2017 for the domestic pension plans (which include the defined benefit pension plan and the supplemental retirement plans) and the domestic retiree medical plan.

	Pension Benefits		Other Benefits	
	Second Quarter Ended	Second Quarter Ended	Second Quarter Ended	Second Quarter Ended
	June 29, 2018	June 30, 2017	June 29, 2018	June 30, 2017
(Thousands)				
Components of net periodic benefit cost (benefit)				
Service cost	\$1,674	\$1,777	\$28	\$23
Interest cost	2,397	2,370	99	99
Expected return on plan assets	(3,697)	(3,378)	—	—
Amortization of prior service benefit	(30)	(73)	(374)	(374)
Amortization of net loss	1,959	1,611	—	—
Net periodic benefit cost (benefit)	\$2,303	\$2,307	\$(247)	\$(252)
	Pension Benefits		Other Benefits	
	Six Months Ended	Six Months Ended	Six Months Ended	Six Months Ended
	June 29, 2018	June 30, 2017	June 29, 2018	June 30, 2017
(Thousands)				
Components of net periodic benefit cost (benefit)				
Service cost	\$3,348	\$3,496	\$56	\$46
Interest cost	4,794	4,726	198	198
Expected return on plan assets	(7,394)	(6,743)	—	—

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Amortization of prior service benefit	(61)	(194)	(749)	(748)
Amortization of net loss	3,919	3,198	—	—
Net periodic benefit cost (benefit)	\$4,606	\$4,483	\$(495)	\$(504)

Materion Corporation and Subsidiaries
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The Company made contributions to the domestic defined benefit pension plan of \$13.0 million and \$4.0 million in the first six months of 2018 and 2017, respectively.

Beginning in 2018, the Company reports the service cost component of net periodic benefit cost in the same line item as other compensation costs in operating expenses and the non-service cost components of net periodic benefit cost in Other non-operating expenses. Additionally, Pension Benefit Guaranty Corporation premiums are reported within expected return on plan assets.

Materion Corporation and Subsidiaries
Notes to Consolidated Financial Statements
(Unaudited)

Note J — Accumulated Other Comprehensive Income (Loss)

Changes in the components of accumulated other comprehensive income, including the amounts reclassified, for the second quarter and first six months of 2018 and 2017 are as follows:

(Thousands)	Gains and Losses on Cash Flow Hedges					
	Foreign Currency	Precious Metals	Total	Pension and Post-Employment Benefits	Foreign Currency Translation	Total
Balance at March 30, 2018	\$326	\$ (238)	\$88	\$ (98,314)	\$ (2,995)	\$ (101,221)
Other comprehensive income (loss) before reclassifications	871	635	1,506	—	(944)	562
Amounts reclassified from accumulated other comprehensive income	42	23	65	1,622	—	1,687
Net current period other comprehensive income (loss) before tax	913	658	1,571	1,622	(944)	2,249
Deferred taxes	(343)	151	(192)	326	—	134
Net current period other comprehensive income (loss) after tax	1,256	507	1,763	1,296	(944)	2,115
Balance at June 29, 2018	\$1,582	\$ 269	\$1,851	\$ (97,018)	\$ (3,939)	\$ (99,106)
Balance at March 31, 2017	\$1,476	\$ (100)	\$1,376	\$ (81,601)	\$ (4,557)	\$ (84,782)
Other comprehensive income (loss) before reclassifications	(629)	393	(236)	—	275	39
Amounts reclassified from accumulated other comprehensive income	47	(88)	(41)	1,156	—	1,115
Net current period other comprehensive income (loss) before tax	(582)	305	(277)	1,156	275	1,154
Deferred taxes	(215)	112	(103)	397	—	294
Net current period other comprehensive income (loss) after tax	(367)	193	(174)	759	275	860
Balance at June 30, 2017	\$1,109	\$ 93	\$1,202	\$ (80,842)	\$ (4,282)	\$ (83,922)

Materion Corporation and Subsidiaries
Notes to Consolidated Financial Statements
(Unaudited)

(Thousands)	Gains and Losses on Cash Flow Hedges					
	Foreign Currency	Precious Metals	Total	Pension and Post-Employment Benefits	Foreign Currency Translation	Total
Balance at December 31, 2017	\$959	\$ (196)	\$763	\$ (99,592)	\$ (4,108)	\$(102,937)
Other comprehensive income (loss) before reclassifications	(327)	444	117	—	169	286
Amounts reclassified from accumulated other comprehensive income	419	159	578	3,248	—	3,826
Net current period other comprehensive income before tax	92	603	695	3,248	169	4,112
Deferred taxes	(531)	138	(393)	674	—	281
Net current period other comprehensive income after tax	623	465	1,088	2,574	169	3,831
Balance at June 29, 2018	\$1,582	\$269	\$1,851	\$ (97,018)	\$ (3,939)	\$(99,106)
Balance at December 31, 2016	\$1,837	\$—	\$1,837	\$ (82,358)	\$ (5,660)	\$(86,181)
Other comprehensive income (loss) before reclassifications	(881)	235	(646)	—	1,378	732
Amounts reclassified from accumulated other comprehensive income	(214)	(88)	(302)	2,309	—	2,007
Net current period other comprehensive income (loss) before tax	(1,095)	147	(948)	2,309	1,378	2,739
Deferred taxes	(367)	54	(313)	793	—	480
Net current period other comprehensive income (loss) after tax	(728)	93	(635)	1,516	1,378	2,259
Balance at June 30, 2017	\$1,109	\$93	\$1,202	\$ (80,842)	\$ (4,282)	\$(83,922)

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. Reclassifications from accumulated other comprehensive income of gains and losses on precious metal cash flow hedges are recorded in Cost of sales in the Consolidated Statements of Income. Refer to Note M 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 I for additional details on pension and post-employment expenses.

Materion Corporation and Subsidiaries
Notes to Consolidated Financial Statements
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Note K — Stock-based Compensation Expense

Stock-based compensation expense, which includes awards settled in shares and in cash, was \$2.7 million and \$5.2 million in the second quarter and first six months of 2018, respectively, compared to \$2.4 million and \$4.7 million in the same periods of 2017.

The Company granted 65,112 stock appreciation rights (SARs) to certain employees during the first six months of 2018. The weighted-average exercise price per share and weighted-average fair value per share of the SARs granted during the six months ended June 29, 2018 were \$50.35 and \$15.73, respectively. The Company estimated the fair value of the SARs using the following weighted-average assumptions in the Black-Scholes model:

Risk-free interest rate	2.58%
Dividend yield	0.8%
Volatility	31.9%
Expected term (in years)	5.5

The Company granted 59,222 stock-settled restricted stock units (RSUs) to certain employees and 14,728 stock-settled RSUs to non-employee directors during the first six months of 2018. The Company measures the fair value of stock-settled RSUs based on the closing market price of a share of Materion common stock on the date of the grant. The weighted-average fair value per share was \$50.35 and \$51.60 for stock-settled RSUs granted to employees and non-employee directors, respectively, during the six months ended June 29, 2018. RSUs are expensed over the vesting period of three years for employees and one year for non-employee directors.

The Company granted stock-settled performance-based restricted stock units (PRSUs) to certain employees in the first six months of 2018. The weighted-average fair value of the stock-settled PRSUs was \$50.35 per share and will be expensed over the vesting period of three years. The final payout to the employees for all PRSUs will be based upon the Company's return on invested capital and the total return to shareholders over the vesting period relative to a peer group's performance over the same period.

At June 29, 2018, unearned compensation cost related to the unvested portion of all stock-based awards was approximately \$9.7 million, and is expected to be recognized over the remaining vesting period of the respective grants.

Note L — Fair Value of Financial Instruments

The Company measures and records financial instruments at fair value. A fair value hierarchy is used for those instruments measured at fair value that distinguishes between assumptions based on 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.

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The following table summarizes the financial instruments measured at fair value in the Consolidated Balance Sheets as of June 29, 2018 and December 31, 2017:

(Thousands)	Total Carrying Value in the Consolidated Balance Sheets		Quoted Prices in Active Markets for Identical Assets (Level 1)		Significant Other Observable Inputs (Level 2)		Significant Unobservable Inputs (Level 3)	
			2018	2017	2018	2017	2018	2017
		2018	2017	2018	2017	2018	2017	2018
Financial Assets								
Deferred compensation investments	\$2,420	\$2,310	\$2,420	\$2,310	\$—	\$—	\$—	\$—
Foreign currency forward contracts	817	254	—	—	817	254	—	—
Precious metal swaps	347	14	—	—	347	14	—	—
Total	\$3,584	\$2,578	\$2,420	\$2,310	\$1,164	\$268	\$—	\$—
Financial Liabilities								
Deferred compensation liability	\$2,420	\$2,310	\$2,420	\$2,310	\$—	\$—	\$—	\$—
Foreign currency forward contracts	23	201	—	—	23	201	—	—
Precious metal swaps	—	269	—	—	—	269	—	—
Total	\$2,443	\$2,780	\$2,420	\$2,310	\$23	\$470	\$—	\$—

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 carrying values of the other working capital items and debt in the Consolidated Balance Sheets approximate fair values as of June 29, 2018 and December 31, 2017.

Note M — Derivative Instruments and Hedging Activity

The Company uses derivative contracts to hedge portions of its foreign currency exposures and uses 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, 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 risk 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.

The use of foreign currency derivative contracts is governed by policies approved by the Audit Committee of the Board of Directors. 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 that exposure within the confines of the policy. 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. Hedge

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contracts are typically layered in at different times for a specified exposure period in order to minimize the impact of rate movements.

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 that 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.

In certain circumstances, the Company also refines metal from the customer and may retain a portion of the refined metal as payment. The Company may elect to enter into a forward contract to sell precious metal to reduce the Company's price exposure.

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.

The Company will only enter into a derivative contract if there is an underlying identified exposure. Contracts are typically held until maturity. The Company does not engage in derivative trading activities and does not use derivatives for speculative purposes. The Company only uses currency hedge contracts that are denominated in the same currency as the underlying exposure and precious metal hedge contracts denominated in the same metal as the underlying exposure.

All derivatives are recorded 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 (OCI) until the hedged item is recognized in earnings. The ineffective portion of a derivative's fair value, if any, is recognized in earnings immediately. If a derivative is not a hedge, changes in the fair value are adjusted through income. The fair values of the outstanding derivatives are recorded on the balance sheet 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 their maturity dates.

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The following table summarizes the notional amount and the fair value of the Company's outstanding derivatives not designated as hedging instruments and balance sheet classification as of June 29, 2018 and December 31, 2017:

(Thousands)	June 29, 2018		December 31, 2017	
	Notional Fair Amount	Fair Value	Notional Fair Amount	Fair Value
Foreign currency forward contracts - euro				
Prepaid expenses	\$25,377	\$ 559	\$13,981	\$ 127
Other liabilities and accrued items	—	—	—	—
Total	\$25,377	\$ 559	\$13,981	\$ 127

These outstanding foreign currency derivatives were related to intercompany loans. Other-net included foreign currency gains relating to these derivatives of \$1.6 million and \$1.1 million during the second quarter and first six months of 2018, respectively, compared to foreign currency losses of \$0.5 million and \$0.6 million during the same periods in 2017, respectively.

The following table summarizes the notional amount and the fair value of the Company's outstanding derivatives designated as cash flow hedges and balance sheet classification as of June 29, 2018 and December 31, 2017:

(Thousands)	June 29, 2018		December 31, 2017	
	Notional Fair Amount	Fair Value	Notional Fair Amount	Fair Value
Prepaid expenses				
Foreign currency forward contracts - yen	\$847	\$29	\$5,673	\$91
Foreign currency forward contracts - euro	9,387	229	5,026	36
Precious metal swaps	8,548	322	—	—
Total	18,782	580	10,699	127
Other assets				
Precious metal swaps	540	25	880	14
Total	540	25	880	14
Other liabilities and accrued items				
Foreign currency forward contracts - yen	2,158	(19)	—	—
Foreign currency forward contracts - euro	819	(4)	13,583	(201)
Precious metal swaps	188	—	10,067	(255)
Total	3,165	(23)	23,650	(456)
Other long-term liabilities				
Precious metal swaps	—	—	789	(14)
Total	\$22,487	\$582	\$36,018	\$(329)

All of these contracts were designated and effective as cash flow hedges. No ineffectiveness expense was recorded in the second quarter and first six months of 2018 or 2017.

Changes in the fair value of outstanding cash flow hedges recorded in OCI for the first six months of 2018 and 2017 totaled an increase of \$0.1 million and a decrease of \$0.6 million, respectively. The Company expects to relieve substantially the entire balance in OCI as of June 29, 2018 to the Consolidated Statements of Income within the next 18-month period. Refer to Note J for additional OCI details.

Materion Corporation and Subsidiaries
Notes to Consolidated Financial Statements
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Note N — Contingencies

Legal Proceedings. For information regarding legal proceedings relating to Chronic Beryllium Disease Claims, refer to Note R ("Contingencies and Commitments") in the Company's 2017 Annual Report on Form 10-K.

Other Litigation. The Company is party to several pending legal proceedings and claims arising in the normal course of business. The Company records a liability when it is both probable that a liability has been incurred and the amount of the loss can be reasonably estimated. In the event the Company determines that a loss is not probable, but is reasonably possible, and it becomes possible to develop what the Company believes to be a reasonable range of possible loss, then the Company will include disclosure related to such matters. To the extent there is a reasonable possibility that the losses could exceed any amounts accrued, the Company will adjust the accrual in the period the determination is made, disclose an estimate of the additional loss or range of loss, indicate that the estimate is immaterial with respect to its financial statements as a whole or, if the amount of such adjustment cannot be reasonably estimated, disclose that an estimate cannot be made.

Environmental Proceedings. The Company has an active environmental compliance program and records reserves for the probable cost of identified environmental remediation projects. The reserves are established based upon analyses conducted by the Company's engineers and outside consultants and are adjusted from time to time based upon ongoing studies, the difference between actual and estimated costs, and other factors. The reserves may also be affected by rulings and negotiations with regulatory agencies. The undiscounted reserve balance was \$6.4 million at June 29, 2018 and \$6.5 million at December 31, 2017. Environmental projects tend to be long-term, and the final actual remediation costs may differ from the amounts currently recorded.

Item 2. 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, defense, medical, automotive electronics, telecommunications infrastructure, energy, commercial aerospace, science, services, and appliance.

RESULTS OF OPERATIONS

Second Quarter

(Thousands, except per share data)	Second Quarter Ended			
	June 29, 2018	June 30, 2017	\$ Change	% Change
Net sales	\$309,085	\$295,842	\$13,243	4 %
Value-added sales	189,902	176,099	13,803	8 %
Gross margin	61,838	54,778	7,060	13 %
Gross margin as a % of value-added sales	33	% 31	% N/A	N/A
Selling, general, and administrative (SG&A) expense	38,473	37,928	545	1 %
SG&A expense as a % of value-added sales	20	% 22	% N/A	N/A
Research and development (R&D) expense	3,860	3,544	316	9 %
R&D expense as a % of value-added sales	2	% 2	% N/A	N/A
Other—net	4,313	3,204	1,109	35 %
Operating profit	15,192	10,102	5,090	50 %
Interest expense—net	667	695	(28)	(4) %
Other non-operating expense—net	437	368	69	19 %
Income before income taxes	14,088	9,039	5,049	56 %
Income tax expense	2,944	1,726	1,218	N/A
Net income	\$11,144	\$7,313	\$3,831	52 %

Diluted earnings per share

\$0.54 \$0.36 \$0.18 50 %

N/A = Not Applicable

Net sales of \$309.1 million in the second quarter of 2018 were \$13.3 million higher than the \$295.8 million recorded in the second quarter of 2017. The increase in net sales was primarily due to new product sales, improved product mix, and end-market demand within our Performance Alloys and Composites segment. Also, the change in precious metal and copper prices of \$6.0 million favorably impacted net sales.

Value-added sales is a non-GAAP financial 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, the most directly comparable GAAP financial measure, to value-added sales is included herein. Value-added sales of \$189.9 million in the second quarter of 2018 increased \$13.8 million, or 8% compared to the second quarter of 2017. The increase in value-added sales was primarily driven by new product sales, improved product mix, and improved end-market demand, particularly in the consumer electronics and defense end markets.

Gross margin in the second quarter of 2018 was \$61.8 million, or \$7.0 million higher than the \$54.8 million gross margin recorded during the second quarter of 2017. Gross margin expressed as a percentage of value-added sales increased to 33% in the second quarter of 2018 from 31% in the second quarter of 2017 primarily due to increased profitability from sales growth and improved product mix.

SG&A expense was \$38.5 million in the second quarter of 2018, compared to \$37.9 million recorded in the second quarter of 2017. The increase in SG&A for the second quarter of 2018 was driven by investments to execute our strategic initiatives. SG&A expense as a percentage of value-added sales decreased to 20% compared to 22% for the second quarter of 2017 due to leveraging growth in net sales.

R&D expense consists primarily of direct personnel costs for pre-production evaluation and testing of new products, prototypes, and applications. R&D expense was flat as a percentage of value-added sales at approximately 2% in the second quarter of both 2018 and 2017.

Other-net was \$4.3 million of expense in the second quarter of 2018, or a \$1.1 million increase from the second quarter of 2017. The increase is primarily due to \$1.2 million of foreign exchange losses recognized in the second quarter of 2018, compared to \$0.3 million of foreign exchange gains recognized in the second quarter of 2017, as well as a \$0.5 million increase in metal consignment fees. These increases were partially offset by a \$0.7 million decrease in intangible asset amortization. Refer to Note E to the Consolidated Financial Statements for details of the major components within Other-net.

Interest expense-net was \$0.7 million in the second quarter of both 2018 and 2017.

Other non-operating expense-net includes components of pension and post-retirement expense other than service costs. Refer to Note I to the Consolidated Financial Statements for details of the components of net periodic benefit costs.

Income tax expense for the second quarter of 2018 was \$2.9 million, compared to \$1.7 million in the second quarter of 2017. The effective tax rate for the second quarter of 2018 was 20.9% compared to an effective tax rate of 19.1% in the prior-year period. The effects of loss jurisdictions, percentage depletion, the foreign rate differential, the research and development credit, discrete benefits, and other items were the primary factors for the difference between the effective and statutory rates in the second quarter of 2018 and 2017. Refer to Note F to the Consolidated Financial Statements for further details on income taxes.

Six Months

(Thousands, except per share data)	Six Months Ended			
	June 29, 2018	June 30, 2017	\$ Change	% Change
Net sales	\$612,552	\$536,511	\$76,041	14 %
Value-added sales	371,215	325,080	46,135	14 %
Gross margin	120,118	97,934	22,184	23 %
Gross margin as a % of value-added sales	32	% 30	% N/A	N/A
SG&A expense	76,935	71,449	5,486	8 %
SG&A expense as a % of value-added sales	21	% 22	% N/A	N/A
R&D expense	7,503	6,674	829	12 %
R&D expense as a % of value-added sales	2	% 2	% N/A	N/A
Other—net	7,237	6,022	1,215	20 %
Operating profit	28,443	13,789	14,654	106 %
Interest expense—net	1,397	1,188	209	18 %
Other non-operating expense—net	879	635	244	38 %
Income before income taxes	26,167	11,966	14,201	119 %
Income tax expense	4,459	1,603	2,856	178 %
Net income	\$21,708	\$10,363	\$11,345	109 %

Diluted earnings per share \$1.05 \$0.51 \$0.54 106 %

N/A = Not Applicable

Net sales of \$612.6 million in the first six months of 2018 were \$76.1 million higher than the \$536.5 million recorded in the first six months of 2017. The increase in net sales was primarily due to new product sales, improved product mix, and end-market demand within our Performance Alloys and Composites segment. Also, during the first six months of 2018, \$30.3 million of incremental net sales were attributable to the high-performance target materials business of the Heraeus Group (HTB). Additionally, the change in precious metal and copper prices of \$15.7 million favorably impacted net sales.

Value-added sales of \$371.2 million in the first six months of 2018 increased \$46.1 million, or 14% compared to the first six months of 2017. The increase was primarily driven by new product sales, improved product mix, and end-market demand, particularly in the consumer electronics, industrial components, energy, and defense end markets. In addition, during the first six months of 2018, the HTB acquisition contributed incremental value-added sales of \$13.5 million.

Gross margin of \$120.1 million in the first half of 2018 was \$22.2 million higher than the \$97.9 million gross margin recorded during the first half of 2017. Gross margin expressed as a percentage of value-added sales increased to 32% in the first half of 2018 from 30% in the first half of 2017 primarily due to increased profitability from sales growth and improved product mix.

SG&A expense was \$76.9 million in the first half of 2018, or \$5.5 million higher than the \$71.4 million recorded in the first half of 2017. The increase in SG&A expense was driven by investments to execute our strategic initiatives and variable costs associated with driving top-line growth. SG&A as a percentage of value-added sales decreased to 21% compared to 22% for the first half of 2017 due to the growth in net sales.

R&D expense was flat as a percentage of value-added sales at approximately 2% in the first six months of both 2018 and 2017.

Other-net was \$7.2 million of expense in the first half of 2018, or a \$1.2 million increase from the first half of 2017. The increase is primarily due to \$1.2 million of foreign exchange losses recognized in the first half of 2018, compared to \$0.6 million of foreign exchange gains recognized in the first half of 2017. Refer to Note E to the Consolidated Financial Statements for details of the major components within Other-net.

Interest expense-net was \$1.4 million and \$1.2 million in the first half of 2018 and 2017, respectively. The increase is primarily due to a capital lease entered into in 2017 in connection with the HTB acquisition.

Other non-operating expense-net. Refer to Note I to the Consolidated Financial Statements for details of the components of net periodic benefit costs.

Income tax expense for the first six months of 2018 was \$4.5 million, compared to \$1.6 million in the first six months of 2017. The effective tax rate for the first half of 2018 was 17.0% compared to an effective tax rate of 13.4% in the prior-year period. The effects of loss jurisdictions, percentage depletion, the foreign rate differential, the research and development credit, discrete benefits, and other items were the primary factors for the difference between the effective and statutory rates in the first half of 2018 and 2017. Refer to Note F to the Consolidated Financial Statements for further details on income taxes.

Value-Added Sales - Reconciliation of Non-GAAP Financial Measure

A reconciliation of net sales to value-added sales, a non-GAAP financial measure, for each reportable segment and for the total Company for the second quarter and first six months of 2018 and 2017 is as follows:

(Thousands)	Second Quarter Ended		Six Months Ended	
	June 29, 2018	June 30, 2017	June 29, 2018	June 30, 2017
Net sales				
Performance Alloys and Composites	\$ 129,765	\$ 108,541	\$ 248,001	\$ 201,094
Advanced Materials	150,324	157,044	303,869	271,780
Precision Coatings	28,996	30,257	60,682	63,637
Other	—	—	—	—
Total	\$ 309,085	\$ 295,842	\$ 612,552	\$ 536,511
Less: pass-through metal costs				
Performance Alloys and Composites	\$ 19,615	\$ 15,855	\$ 37,552	29,197
Advanced Materials	93,057	95,003	188,319	162,451
Precision Coatings	5,603	7,644	13,648	17,723
Other	908	1,241	1,818	2,060
Total	\$ 119,183	\$ 119,743	\$ 241,337	\$ 211,431
Value-added sales				
Performance Alloys and Composites	\$ 110,150	\$ 92,686	\$ 210,449	\$ 171,897
Advanced Materials	57,267	62,041	115,550	109,329
Precision Coatings	23,393	22,613	47,034	45,914
Other	(908)	(1,241)	(1,818)	(2,060)
Total	\$ 189,902	\$ 176,099	\$ 371,215	\$ 325,080

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 is a non-GAAP financial 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. Non-GAAP financial measures, such as value-added sales, have inherent limitations and should not be considered in isolation, or as a substitute for analyses of results as reported under GAAP.

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.

Segment Results

The Company consists of four reportable segments: Performance Alloys and Composites, Advanced Materials, Precision Coatings, and Other. The Other reportable segment includes unallocated corporate costs.

Performance Alloys and Composites

Second Quarter

	Second Quarter Ended			
	June 29, 2018	June 30, 2017	\$ Change	% Change
(Thousands)				
Net sales	\$129,765	\$108,541	\$21,224	20 %
Value-added sales	110,150	92,686	17,464	19 %
Operating profit	12,309	5,548	6,761	122 %

Net sales from the Performance Alloys and Composites segment of \$129.8 million in the second quarter of 2018 were 20% higher than net sales of \$108.5 million in the second quarter of 2017 primarily due to higher sales volume related to the defense, energy, and consumer electronics end markets. In addition, the impact of higher pass-through metal prices favorably impacted net sales by approximately \$1.7 million.

Value-added sales of \$110.2 million in the second quarter of 2018 were 19% higher than value-added sales of \$92.7 million in the second quarter of 2017. The increase in value-added sales was driven by performance improvements in commercial execution and stronger demand in the aforementioned end markets of defense, energy, and consumer electronics.

Performance Alloys and Composites generated operating profit of \$12.3 million in the second quarter of 2018 compared to \$5.5 million in the second quarter of 2017. The increase in operating profit was primarily due to higher sales volume, favorable product mix, and improved manufacturing performance.

Six Months

	Six Months Ended			
	June 29, 2018	June 30, 2017	\$ Change	% Change
(Thousands)				
Net sales	\$248,001	\$201,094	\$46,907	23 %
Value-added sales	210,449	171,897	38,552	22 %
Operating profit	22,170	5,737	16,433	286 %

Net sales from the Performance Alloys and Composites segment of \$248.0 million in the first six months of 2018 were 23% higher than net sales of \$201.1 million in the first six months of 2017 primarily due to higher sales volume related to the industrial components, defense, consumer electronics, and energy end markets. In addition, the impact of higher pass-through metal prices favorably impacted net sales by approximately \$4.0 million.

Value-added sales of \$210.4 million in the first six months of 2018 were 22% higher than value-added sales of \$171.9 million in the first six months of 2017. The increase in value-added sales was driven by performance improvements in commercial execution and stronger demand in the aforementioned end markets of industrial components, defense, consumer electronics, and energy.

Performance Alloys and Composites generated operating profit of \$22.2 million in the first six months of 2018 compared to \$5.7 million in the first six months of 2017. The increase in operating profit was primarily due to higher sales volume, favorable product mix, and improved manufacturing performance.

Advanced Materials

Second Quarter

	Second Quarter Ended			
	June 29, 2018	June 30, 2017	\$ Change	% Change
(Thousands)				
Net sales	\$150,324	\$157,044	(6,720)	(4)%
Value-added sales	57,267	62,041	(4,774)	(8)%
Operating profit	5,572	8,670	(3,098)	(36)%

Net sales from the Advanced Materials segment of \$150.3 million in the second quarter of 2018 were 4% lower than net sales of \$157.0 million in the second quarter of 2017. The favorable impact of pass-through metal prices of \$3.7 million was more than offset by lower sales volume and customer mix.

Value-added sales of \$57.3 million in the second quarter of 2018 were 8% lower than value-added sales of \$62.0 million in the second quarter of 2017, driven by softer demand in certain subsegments of the consumer electronics end market.

The Advanced Materials segment generated operating profit of \$5.6 million in the second quarter of 2018 compared to \$8.7 million in the second quarter of 2017. Operating profit in the second quarter of 2018 was negatively impacted by unfavorable product mix, particularly within the consumer electronics end market, and integration expenses related to the move of the HTB business in Germany to a new state-of-the-art facility.

Six Months

	Six Months Ended			
	June 29, 2018	June 30, 2017	\$ Change	% Change
(Thousands)				
Net sales	\$303,869	\$271,780	32,089	12 %
Value-added sales	115,550	109,329	6,221	6 %
Operating profit	11,470	15,117	(3,647)	(24)%

Net sales from the Advanced Materials segment of \$303.9 million in the first half of 2018 were 12% higher than net sales of \$271.8 million in the first half of 2017 due to incremental net sales from the HTB acquisition of \$30.3 million. The favorable impact of pass-through metal prices of \$10.1 million was offset by lower sales volume in the base business and customer mix.

Value-added sales of \$115.6 million in the first six months of 2018 were 6% higher than value-added sales of \$109.3 million in the first six months of 2017. During the first six months of 2018, the HTB acquisition contributed incremental value-added sales of \$13.5 million. Excluding the HTB acquisition, value-added sales decreased \$7.3 million, driven by softer demand in the consumer electronics end market.

The Advanced Materials segment generated operating profit of \$11.5 million in the first half of 2018 compared to \$15.1 million in the first half of 2017. Operating profit in the first half of 2018 was impacted by unfavorable product mix, particularly within the consumer electronics end market, as well as integration expenses related to the move of the HTB business in Germany to a new state-of-the-art facility.

Precision Coatings

Second Quarter

(Thousands)	Second Quarter Ended			
	June 29, June 30, \$		%	
	2018	2017	Change	Change
Net sales	\$28,996	\$30,257	(1,261)	(4)%
Value-added sales	23,393	22,613	780	3%
Operating profit	2,233	2,314	(81)	(4)%

Net sales from the Precision Coatings segment of \$29.0 million in the second quarter of 2018 were 4% lower than net sales of \$30.3 million in the second quarter of 2017 primarily due to lower sales volume involving precious metals. Value-added sales of \$23.4 million in the second quarter of 2018 were 3% higher than value-added sales of \$22.6 million in the second quarter of 2017. The defense and consumer electronics end markets increased \$2.1 million primarily due to success in new product sales and improved end-market demand. This increase was partially offset by a decrease of \$1.0 million in the medical end market due to lower volume in the blood glucose test strip segment of the medical end market.

The Precision Coatings segment generated operating profit of \$2.2 million in the second quarter of 2018, compared to an operating profit of \$2.3 million in the second quarter of 2017.

Six Months

(Thousands)	Six Months Ended			
	June 29, June 30, \$		%	
	2018	2017	Change	Change
Net sales	\$60,682	\$63,637	(2,955)	(5)%
Value-added sales	47,034	45,914	1,120	2%
Operating profit	5,608	4,532	1,076	24%

Net sales from the Precision Coatings segment of \$60.7 million in the first six months of 2018 were 5% lower than net sales of \$63.6 million in the first six months of 2017 primarily due to lower sales volume involving precious metals. Value-added sales of \$47.0 million in the first six months of 2018 were 2% higher than value-added sales of \$45.9 million in the first six months of 2017. The defense and consumer electronics end markets increased \$3.9 million primarily due to success in new product sales and improved end-market demand. This increase was partially offset by a decrease of \$1.7 million in the medical end market due to lower volume in the blood glucose test strip segment of the medical end market.

The Precision Coatings segment generated operating profit of \$5.6 million in the first six months of 2018, compared to an operating profit of \$4.5 million in the first six months of 2017. The increase in operating profit was driven by a combination of sales growth, cost reduction actions, and improved manufacturing performance.

Other

Second Quarter

(Thousands)	Second Quarter Ended			
	June 29, June 30, \$		%	
	2018	2017	Change	Change
Net sales	\$—	\$—	—	—%
Value-added sales	(908)	1,241	333	(27)%
Operating loss	(4,902)	1,508	(23)	(23)%

The Other reportable segment in total includes unallocated corporate costs.

Corporate costs of \$4.9 million in the second quarter of 2018 decreased \$1.5 million as compared to \$6.4 million in the second quarter of 2017. As a percent of total Company value-added sales, corporate costs decreased to 3% in the second quarter of 2018 from 4% in the prior-year period. The decrease primarily relates to the absence of CEO

transition costs incurred in the prior-year period.

Six Months

(Thousands)	Six Months Ended			
	June 29, 2018	June 30, 2017	\$ Change	% Change
Net sales	\$—	\$—	—	— %
Value-added sales	(1,820)	(60)	242	(12) %
Operating loss	(10,805)	(97)	792	(7) %

Corporate costs of \$10.8 million in the first half of 2018 decreased \$0.8 million as compared to \$11.6 million in the first half of 2017. The absence of CEO transition costs incurred in the prior-year period were partially offset by additional costs to execute our strategic initiatives. Corporate costs were approximately 3% of total Company value-added sales in the first six months of 2018 compared to 4% in the prior-year period.

FINANCIAL POSITION

Cash Flow

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

(Thousands)	Six Months Ended		
	June 29, 2018	June 30, 2017	\$ Change
Net cash provided by operating activities	\$29,304	\$303	\$29,001
Net cash used in investing activities	(20,551)	(28,238)	7,687
Net cash (used in) provided by financing activities	(7,710)	14,055	(21,765)
Effects of exchange rate changes	8	913	(905)
Net change in cash and cash equivalents	\$1,051	\$(12,967)	\$14,018

Net cash provided by operating activities totaled \$29.3 million in the first six months of 2018 versus \$0.3 million in the comparable prior-year period. Higher net income of \$11.3 million and working capital efficiencies resulted in the increase in cash provided by operating activities. Also, cash provided by prepaid and other current assets during the first six months of 2018 was \$4.9 million, or \$14.2 million higher than \$9.3 million of cash used in the first six months of 2017. The majority of the increase was due to prepaid value added taxes.

Working capital requirements used cash of \$15.8 million during the first six months of 2018 compared to a use of \$21.9 million in the first six months of 2017. Cash flows used for accounts receivable were \$18.8 million less than the prior-year period. Our three-month trailing days sales outstanding (DSO) was approximately 41 days at June 29, 2018 versus 37 days at December 31, 2017. Inventory levels decreased, primarily in our Performance Alloys and Composites segment, due to working capital initiatives resulting in cash provided of \$10.4 million at June 29, 2018 versus cash used of \$6.5 million in the prior year-period. Cash flows from accounts payable and accrued expenses used cash of \$14.2 million compared providing cash of \$15.5 million in the prior-year period primarily due to higher incentive compensation payments and the HTB acquisition.

Net cash used in investing activities was \$20.6 million in the first six months of 2018 compared to \$28.2 million in the prior-year period. The decrease is primarily due to the payment for the HTB acquisition, partially offset by higher payments for property, plant, and equipment primarily relating to the our new, state-of-the-art target manufacturing facility in Alzenau, Germany.

Capital expenditures are made primarily for new product development, replacing and upgrading equipment, infrastructure investments, and implementing information technology initiatives. For the full year 2018, the Company expects payments for property, plant, and equipment to be approximately \$30.0 to \$35.0 million and mine development expenditures to be approximately \$5.0 to \$10.0 million.

Net cash used in financing activities totaled \$7.7 million in the first six months of 2018 versus \$14.1 million provided by financing activities in the comparable prior-year period primarily due to higher net borrowings in the first half of

2017 compared to 2018.

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Liquidity

We believe 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 June 29, 2018, cash and cash equivalents held by our foreign operations totaled \$12.1 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 results of operations for the foreseeable future.

A summary of key data relative to our liquidity, including outstanding debt, cash, and available borrowing capacity, as of June 29, 2018 and December 31, 2017 is as follows:

	June 29, 2018	December 31, 2017
(Thousands)		
Total outstanding debt	\$3,434	\$ 3,818
Cash	42,895	41,844
Net debt (cash)	(39,461)	(38,026)
Available borrowing capacity	\$279,054	\$ 254,777

Net debt (cash) is a non-GAAP financial measure reflecting the Company's current liquidity position. It is also a measure our management uses to assess financing and other decisions. We believe that based on our typical cash flow generated from operations, we can support a higher leverage ratio in future periods. Non-GAAP financial measures, such as net debt (cash), have inherent limitations and should not be considered in isolation, or as a substitute for GAAP financial measures.

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 period 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 increase in the available borrowing capacity at June 29, 2018 as compared to December 31, 2017 was due to increased earnings before interest, income taxes, depreciation and amortization on a trailing 12-month basis.

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 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 the prime rate and at varying maturities. The premium resets quarterly according to the terms and conditions available under the Credit 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 June 29, 2018 and December 31, 2017. 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 \$217.9 million as of June 29, 2018. The availability is determined by Board approved levels and actual line capacity.

In January 2014, our Board of Directors approved a plan to repurchase up to \$50.0 million of our common stock. The timing of the share repurchases will depend on several factors, including market and business conditions, our cash

flow, debt levels, and other investment opportunities. There is no minimum quantity requirement to repurchase our common stock for a given year, and the repurchases may be discontinued at any time. In the second quarter and first six months of 2018, we did not

repurchase any of our common shares. Since the approval of the repurchase plan, we have purchased 1,082,264 shares at a total cost of \$34.3 million.

In the second quarter and first six months of 2018, we paid cash dividends of \$2.1 million and \$4.1 million, respectively, on our common stock. We intend to pay a quarterly dividend on an ongoing basis, subject to a determination that the dividend remains in the best interest of our shareholders.

OFF-BALANCE SHEET ARRANGEMENTS AND CONTRACTUAL 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. The notional value of off-balance sheet precious metals and copper was \$332.1 million as of June 29, 2018, versus \$320.0 million as of December 31, 2017. We were in compliance with all of the covenants contained in the consignment agreements as of June 29, 2018 and December 31, 2017. For additional information on our contractual obligations, refer to our Form 10-K for the year ended December 31, 2017.

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. For additional information regarding critical accounting policies, please refer to our 2017 Annual Report on Form 10-K. Significant changes to our critical accounting estimates as a result of adopting Accounting Standards Update 2014-09, Revenue from Contracts with Customers (ASC 606), are discussed below.

Revenue Recognition

Net sales consist primarily of revenue from the sale of precious and non-precious specialty metals, beryllium and copper-based alloys, beryllium composites, and other products into numerous end markets. The Company requires an agreement with a customer that creates enforceable rights and performance obligations. We recognize revenue, in an amount that reflects the consideration to which the Company expects to be entitled, when we satisfy a performance obligation by transferring control of a product to the customer. The core principle of ASC 606 is supported by five steps which are outlined below with management's judgment in applying each.

1) Identify the contract with a customer

A contract with a customer exists when the Company enters into an enforceable contract with a customer that identifies each party's rights regarding the products to be transferred and the related payment terms related to these services, the contract has commercial substance, and the Company determines that collection of substantially all consideration for products that are transferred is probable based on the customer's intent and ability to pay.

Management exercises judgment in its assessment that it is probable that the Company will collect substantially all of the payment attributed to products or services that will be transferred to our customers. We regularly review the creditworthiness of our customers considering such factors as historical collection experience, a customer's current credit standing, the age of accounts receivable balances, and general economic conditions that may affect a customer's ability to pay. If after we have recognized revenue, collectability of an account receivable becomes doubtful, we establish appropriate allowances and reserves against accounts receivable with respect to the previously recognized revenue that remains uncollected. Allowances and reserves against accounts receivable are maintained for estimated probable losses and are sufficient enough to ensure that accounts receivable are stated at amounts that are considered collectible.

If management forms a judgment that a particular customer's financial condition has deteriorated but decides to deliver products or services to the customer, we will defer recognizing revenue relating to products sold to that customer until collectability is reasonably assured, which typically coincides with the collection of cash.

The Company recognizes revenue net of reserves for price adjustments, returns, and prompt payment discounts. Management generally estimates this amount using the expected value method. The Company has sufficient experience with our customers that provide predictive value that the reserves recorded are appropriate.

2) Identify the performance obligations in the contract

Performance obligations promised in a contract are identified based on the products that will be transferred to the customer that are both capable of being distinct, whereby the customer can benefit from the product either on its own or together with other resources that are readily available from third parties or from the Company, and are distinct in the context of the contract, whereby the transfer of the product is separately identifiable from other promises in the contract.

Certain of the Company's contracts with customers contain multiple performance obligations. As a result, management utilizes judgment to determine the appropriate accounting, including whether multiple promised products or services in a contract should be accounted for separately or as a group, how the consideration should be allocated among the performance obligations, and when to recognize revenue upon satisfaction of the performance obligations.

3) Determine the transaction price

The transaction price is determined based on the consideration to which the Company will be entitled in exchange for transferring services to the customer. The vast majority of our contracts contain fixed consideration terms. However, the Company also has contracts with customers that include variable consideration. Volume discounts and rebates are offered as an incentive to encourage additional purchases and customer loyalty. Volume discounts and rebates typically require a customer to purchase a specified quantity of products, after which the price of additional products decreases. These contracts include variable consideration because the total amount to be paid by the customer is not known at contract inception and is affected by the quantity of products ultimately purchased. As a result, management applies judgment to estimate the volume discounts based on experience with similar contracts, customers, and current sales forecasts. Also, the Company has contracts, primarily relating to its precious metal products, where the transaction price includes variable consideration at contract inception because it is calculated based on a commodity index at a specified date. Management exercises judgment to determine the minimum amount to be included in the transaction price. Variable consideration is included in the transaction price if, in the Company's judgment, it is probable that a significant future reversal of cumulative revenue under the contract will not occur.

4) Allocate the transaction price to performance obligations in the contract

If the contract contains a single performance obligation, the entire transaction price is allocated to the single performance obligation. Contracts that contain multiple performance obligations require an allocation of the transaction price to each performance obligation based on the relative standalone selling price. The Company typically determines standalone selling price based on the price at which the performance obligation is sold separately. If the standalone selling price is not observable through past transactions, management uses judgment to estimate the standalone selling price taking into account available information such as market conditions and internally approved pricing guidelines related to the performance obligations.

5) Recognize revenue when or as the Company satisfies a performance obligation

Management applies the principle of control to determine whether the customer obtains control of a product as it is created and if revenue should be recognized over time. The vast majority of the Company's performance obligations are satisfied at a point in time when control of the product transfers to the customer. Control of the product is generally transferred to the customer when the Company has a present right to payment, the customer has legal title, the customer has physical possession, the customer has the significant risks and rewards of ownership, and the customer has accepted the product.

However, for certain contracts, particularly relating to the U.S. government and relating to specialized products with no alternative use, we generally recognize revenue over time as we procure the product because of continuous transfer of control to the customer. This continuous transfer of control to the customer is supported by a termination for convenience clause in the contract that allows the customer to unilaterally terminate the contract, pay the Company for costs incurred plus a reasonable profit, and take control of any work in process. We generally use the cost-to-cost measure of progress for these contracts because it best depicts the transfer of control to the customer which occurs as we incur costs on the related contracts. Under the cost-to-cost measure of progress, the extent of progress towards completion is measured based on the ratio of costs incurred to date to the total estimated costs at completion of the performance obligation. Therefore, revenue is recognized proportionally as costs are incurred for these contracts.

Other considerations

We receive payment from customers equal to the invoice price for most of our sales transactions.

Returned products are generally not accepted unless the customer notifies the Company in writing, and we authorize the product return by the customer.

Unearned revenue is recorded cash consideration from customers in advance of the shipment of the goods, which is a liability on our Consolidated Balance Sheets. This contract liability is subsequently reversed and the revenue, cost of sales, and gross margin are recorded when the Company has transferred control of the product to the customer. 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 relating to contracts 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. Refer to Note B of the Consolidated Financial Statement for additional details on our contract balances.

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 2018;

The global economy, including the impact of tariffs, as well as other government actions;

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, including our ability to effectively integrate the acquisition of the high-performance target materials business of the Heraeus Group;

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;

Other financial and economic 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, credit availability, and the impact of the Company's stock price on the cost of incentive compensation plans;

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

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

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

•The risk factors set forth in Part 1, Item 1A of our 2017 Annual Report on Form 10-K.

Item 3. Quantitative and Qualitative Disclosures about Market Risk

For information regarding market risks, refer to Item 7A. Quantitative and Qualitative Disclosures About Market Risk in our Annual Report on Form 10-K for the year ended December 31, 2017. There have been no material changes in our market risks since the inclusion of this discussion in our Annual Report on Form 10-K.

Item 4. Controls and Procedures

a) Evaluation of Disclosure Controls and Procedures

The Company carried out an evaluation under the supervision and with participation of the Company's 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 June 29, 2018 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 June 29, 2018.

b) Changes in Internal Control over Financial Reporting

There have been no changes in the Company's internal control over financial reporting that occurred during the quarter ended June 29, 2018 that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

The Company adopted the new revenue recognition guidance under ASC 606 on January 1, 2018. Although the adoption of ASC 606 did not have a material impact on the Company's financial results, changes to the Company's processes and controls related to revenue recognition were implemented. These changes included creating new accounting policies based on the five-step model of ASC 606, implementing ongoing contract review requirements, and gathering information necessary for disclosures.

PART II OTHER INFORMATION

Item 1. 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 chronic beryllium disease 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.

The information presented in the Legal Proceedings section of Note N ("Contingencies") of the Notes to Consolidated Financial Statements (Unaudited) is incorporated herein by reference.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds

The following table presents information with respect to repurchases of common stock made by us during the three months ended June 29, 2018.

Period	Total Number of Shares Purchased (1)	Average Price Paid per Share (1)	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs (2)	Approximate Dollar Value of Shares that May Yet Be Purchased Under the Plans or Programs (2)
March 31 through April 4, 2018	8,889	\$ 53.83	—	\$ 15,703,744
April 5 through May 1, 2018	2,743	54.64	—	15,703,744
May 2 through June 29, 2018	65	55.77	—	15,703,744
Total	11,697	\$ 54.03	—	\$ 15,703,744

(1) Includes 8,889, 2,743, and 65 shares surrendered to the Company in April, May, and June, respectively, by employees to satisfy tax withholding obligations on equity awards issued under the Company's

stock
incentive
plan.

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. We
did not

(2) repurchase
any shares
under this
program
during the
second
quarter of
2018. As of
June 29,
2018, \$15.7
million may
still be
purchased
under the
program.

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 quarterly report on Form 10-Q.

Item 6. Exhibits

- 10.1 Form of 2018 Non-Employee Directors Restricted Stock Unit Agreement*
- 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 period ended June 29, 2018*
- 101.INS XBRL Instance Document*
- 101.SCH XBRL Taxonomy Extension Schema Document*
- 101.DEF XBRL Taxonomy Extension Definition Linkbase Document*
- 101.CAL XBRL Taxonomy Extension Calculation Linkbase Document*
- 101.LAB XBRL Taxonomy Extension Label Linkbase Document*
- 101.PRE XBRL Taxonomy Extension Presentation Linkbase Document*

*Submitted electronically herewith.

SIGNATURES

Pursuant to the requirements 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

Dated: July 26, 2018

/s/ Joseph P. Kelley
Joseph P. Kelley
Vice President, Finance and Chief Financial Officer
(Principal Financial and Accounting Officer)