

**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 July 1, 2022

OR

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

For the transition period from to

Commission file number 001-15885

MATERION CORPORATION

(Exact name of Registrant as specified in charter)

Ohio

(State or other jurisdiction of incorporation or organization)

34-1919973

(I.R.S. Employer Identification No.)

6070 Parkland Blvd., Mayfield Heights, Ohio 44124

(Address of principal executive offices) (Zip Code)

Registrant's telephone number, including area code:

(216)-486-4200

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, no par value	MTRN	New York Stock Exchange

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 every Interactive Data File required to be submitted 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 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 ☐ 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 July 1, 2022: 20,523,736.

PART 1 - FINANCIAL INFORMATION

Item 1. Financial Statements

Materion Corporation and Subsidiaries Consolidated Statements of Income (Unaudited)

(Thousands, except per share amounts)	Second Quarter Ended		Six Months Ended	
	July 1, 2022	July 2, 2021	July 1, 2022	July 2, 2021
Net sales	\$ 445,295	\$ 370,999	\$ 894,340	\$ 725,385
Cost of sales	357,868	301,418	731,622	589,008
Gross margin	87,427	69,581	162,718	136,377
Selling, general, and administrative expense	42,047	38,060	83,708	74,836
Research and development expense	7,592	6,604	14,666	12,810
Restructuring expense (income)	—	—	1,076	(378)
Other—net	5,928	4,194	11,801	8,668
Operating profit	31,860	20,723	51,467	40,441
Other non-operating income—net	(1,168)	(1,277)	(2,337)	(2,553)
Interest expense—net	4,701	858	8,437	1,619
Income before income taxes	28,327	21,142	45,367	41,375
Income tax expense	5,072	3,274	8,093	6,740
Net income	\$ 23,255	\$ 17,868	\$ 37,274	\$ 34,635
Basic earnings per share:				
Net income per share of common stock	\$ 1.13	\$ 0.87	\$ 1.82	\$ 1.70
Diluted earnings per share:				
Net income per share of common stock	\$ 1.12	\$ 0.87	\$ 1.80	\$ 1.68
Weighted-average number of shares of common stock outstanding:				
Basic	20,517	20,429	20,491	20,402
Diluted	20,723	20,651	20,743	20,647

See notes to these consolidated financial statements.

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

(Thousands)	Second Quarter Ended		Six Months Ended	
	July 1, 2022	July 2, 2021	July 1, 2022	July 2, 2021
Net income	\$ 23,255	\$ 17,868	\$ 37,274	\$ 34,635
Other comprehensive income (loss):				
Foreign currency translation adjustment	(6,343)	3,193	(8,390)	(5,664)
Derivative and hedging activity, net of tax	1,894	(273)	4,164	972
Pension and post-employment benefit adjustment, net of tax	16	83	(224)	247
Other comprehensive income (loss)	(4,433)	3,003	(4,450)	(4,445)
Comprehensive income	\$ 18,822	\$ 20,871	\$ 32,824	\$ 30,190

See notes to these consolidated financial statements.

Materion Corporation and Subsidiaries
Consolidated Balance Sheets
(Unaudited)

(Thousands)	July 1, 2022	Dec. 31, 2021
Assets		
Current assets		
Cash and cash equivalents	\$ 32,175	\$ 14,462
Accounts receivable, net	222,811	223,553
Inventories, net	422,376	361,115
Prepaid and other current assets	29,606	28,122
Total current assets	706,968	627,252
Deferred income taxes	5,018	5,431
Property, plant, and equipment	1,164,273	1,132,223
Less allowances for depreciation, depletion, and amortization	(739,776)	(723,248)
Property, plant, and equipment, net	424,497	408,975
Operating lease, right-of-use assets	68,045	63,096
Intangible assets, net	148,364	156,736
Other assets	30,228	27,369
Goodwill	319,994	318,620
Total Assets	\$ 1,703,114	\$ 1,607,479
Liabilities and Shareholders' Equity		
Current liabilities		
Short-term debt	\$ 15,333	\$ 15,359
Accounts payable	113,708	86,243
Salaries and wages	22,239	37,544
Other liabilities and accrued items	49,148	53,388
Income taxes	1,700	4,205
Unearned revenue	8,097	7,770
Total current liabilities	210,225	204,509
Other long-term liabilities	15,846	14,954
Operating lease liabilities	62,474	57,099
Finance lease liabilities	14,360	16,327
Retirement and post-employment benefits	30,992	33,394
Unearned income	108,126	97,962
Long-term income taxes	1,206	1,190
Deferred income taxes	28,766	27,216
Long-term debt	481,965	434,388
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 both July 1 st and December 31 st)	281,296	271,978
Retained earnings	725,918	693,756
Common stock in treasury	(218,356)	(209,920)
Accumulated other comprehensive loss	(44,619)	(40,169)
Other equity	4,915	4,795
Total shareholders' equity	749,154	720,440
Total Liabilities and Shareholders' Equity	\$ 1,703,114	\$ 1,607,479

See the notes to these consolidated financial statements.

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

(Thousands)	Six Months Ended	
	July 1, 2022	July 2, 2021
Cash flows from operating activities:		
Net income	\$ 37,274	\$ 34,635
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation, depletion, and amortization	26,070	19,063
Amortization of deferred financing costs in interest expense	780	364
Stock-based compensation expense (non-cash)	3,694	3,512
Deferred income tax expense (benefit)	1,966	367
Changes in assets and liabilities:		
Accounts receivable	(2,566)	(13,941)
Inventory	(67,304)	(40,651)
Prepaid and other current assets	(2,462)	(1,718)
Accounts payable and accrued expenses	8,897	28,403
Unearned revenue	(141)	3,246
Interest and taxes payable	(1,765)	2,868
Unearned income due to customer prepayments	13,059	8,043
Other-net	3,913	(126)
Net cash provided by operating activities	21,415	44,065
Cash flows from investing activities:		
Payments for purchase of property, plant, and equipment	(37,730)	(57,712)
Proceeds from sale of property, plant, and equipment	105	603
Payments for acquisition, net of cash acquired	(2,971)	—
Net cash used in investing activities	(40,596)	(57,109)
Cash flows from financing activities:		
Proceeds from borrowings under revolving credit agreement, net	52,794	22,500
Proceeds from issuance of long-term debt	2,059	—
Repayment of long-term debt	(7,177)	(1,654)
Principal payments under finance lease obligations	(1,334)	(1,512)
Cash dividends paid	(5,112)	(4,791)
Payments of withholding taxes for stock-based compensation awards	(2,812)	(3,021)
Net cash provided by financing activities	38,418	11,522
Effects of exchange rate changes	(1,524)	(11)
Net change in cash and cash equivalents	17,713	(1,533)
Cash and cash equivalents at beginning of period	14,462	25,878
Cash and cash equivalents at end of period	\$ 32,175	\$ 24,345

See notes to these consolidated financial statements.

Materion Corporation and Subsidiaries
Consolidated Statements of Shareholders' Equity
(Unaudited)

(Thousands, except per share amounts)	Common Shares		Shareholders' Equity					
	Common Shares	Common Shares Held in Treasury	Common Stock	Retained Earnings	Common Stock in Treasury	Accumulated Other Comprehensive Loss	Other Equity	Total
Balance at April 1, 2022	20,511	(6,637)	\$ 278,589	\$ 705,255	\$ (217,549)	\$ (40,186)	\$ 4,855	\$ 730,964
Net income	—	—	—	23,255	—	—	—	23,255
Other comprehensive income	—	—	—	—	—	(4,433)	—	(4,433)
Cash dividends declared (\$0.125 per share)	—	—	—	(2,592)	—	—	—	(2,592)
Stock-based compensation activity	13	13	2,671	—	(676)	—	—	1,995
Payments of withholding taxes for stock-based compensation awards	(1)	(1)	—	—	(95)	—	—	(95)
Directors' deferred compensation	—	—	36	—	(36)	—	60	60
Balance at July 1, 2022	<u>20,523</u>	<u>(6,625)</u>	<u>\$ 281,296</u>	<u>\$ 725,918</u>	<u>\$ (218,356)</u>	<u>\$ (44,619)</u>	<u>\$ 4,915</u>	<u>\$ 749,154</u>
Balance at April 2, 2021	20,414	(6,734)	\$ 264,940	\$ 645,468	\$ (206,845)	\$ (46,087)	\$ 3,860	\$ 661,336
Net income	—	—	—	17,868	—	—	—	17,868
Other comprehensive income	—	—	—	—	—	3,003	—	3,003
Cash dividends declared (\$0.120 per share)	—	—	—	(2,453)	—	—	—	(2,453)
Stock-based compensation activity	25	25	3,215	(32)	(1,144)	—	—	2,039
Payments of withholding taxes for stock-based compensation awards	(2)	(2)	—	—	(183)	—	—	(183)
Directors' deferred compensation	1	1	50	—	(682)	—	723	91
Balance at July 2, 2021	<u>20,438</u>	<u>(6,710)</u>	<u>\$ 268,205</u>	<u>\$ 660,851</u>	<u>\$ (208,854)</u>	<u>\$ (43,084)</u>	<u>\$ 4,583</u>	<u>\$ 681,701</u>

(Thousands, except per share amounts)	Common Shares		Shareholders' Equity					Total
	Common Shares	Common Shares Held in Treasury	Common Stock	Retained Earnings	Common Stock in Treasury	Accumulated Other Comprehensive Loss	Other Equity	
Balance at December 31, 2021	20,448	(6,700)	\$ 271,978	\$ 693,756	\$ (209,920)	\$ (40,169)	\$ 4,795	\$ 720,440
Net income	—	—	—	37,274	—	—	—	37,274
Other comprehensive loss	—	—	—	—	—	(4,450)	—	(4,450)
Cash dividends declared (\$0.245 per share)	—	—	—	(5,112)	—	—	—	(5,112)
Stock-based compensation activity	108	108	9,243	—	(5,549)	—	—	3,694
Payments of withholding taxes for stock-based compensation awards	(34)	(34)	—	—	(2,812)	—	—	(2,812)
Directors' deferred compensation	1	1	75	—	(75)	—	120	120
Balance at July 1, 2022	<u>20,523</u>	<u>(6,625)</u>	<u>\$ 281,296</u>	<u>\$ 725,918</u>	<u>\$ (218,356)</u>	<u>\$ (44,619)</u>	<u>\$ 4,915</u>	<u>\$ 749,154</u>
Balance at December 31, 2020	20,328	(6,820)	\$ 258,642	\$ 631,058	\$ (199,187)	\$ (38,639)	\$ 3,756	\$ 655,630
Net income	—	—	—	34,635	—	—	—	34,635
Other comprehensive loss	—	—	—	—	—	(4,445)	—	(4,445)
Cash dividends declared (\$0.235 per share)	—	—	—	(4,791)	—	—	—	(4,791)
Stock-based compensation activity	152	152	9,474	(51)	(5,911)	—	—	3,512
Payments of withholding taxes for stock-based compensation awards	(45)	(45)	—	—	(3,021)	—	—	(3,021)
Directors' deferred compensation	3	3	\$ 89	\$ —	\$ (735)	\$ —	\$ 827	\$ 181
Balance at July 2, 2021	<u>20,438</u>	<u>(6,710)</u>	<u>\$ 268,205</u>	<u>\$ 660,851</u>	<u>\$ (208,854)</u>	<u>\$ (43,084)</u>	<u>\$ 4,583</u>	<u>\$ 681,701</u>

See notes to these consolidated financial statements.

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

Note A — Accounting Policies

Basis of Presentation:

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.

These consolidated financial statements should be read in conjunction with the consolidated financial statements and related notes included in the Company's 2021 Annual Report on Form 10-K. The interim period results are not necessarily indicative of the results to be expected for the full year.

Business Combinations:

The Company records assets acquired and liabilities assumed at the date of acquisition at their respective fair values. Any intangible assets acquired in a business combination are recognized and reported apart from goodwill. Goodwill represents the excess purchase price over the fair value of the tangible net assets and intangible assets acquired in a business combination. Acquisition-related expenses are recognized separately from the business combination and are expensed as incurred.

The amounts reflected in Note B of the consolidated financial statements are the results of a preliminary purchase price allocation and will be updated upon completion of the final valuation. The Company is required to complete the purchase price allocation within 12 months of the acquisition date. If such completion of the allocation results in a change in the preliminary values, the measurement period adjustment will be recognized in the period in which the adjustment amount is determined.

New Pronouncements Adopted:

In March 2020, the FASB issued ASU 2020-04, *Reference Rate Reform (Topic 848): Facilitation of the Effects of Reference Rate Reform on Financial Reporting*. This guidance is intended to provide temporary optional expedients and exceptions to the U.S. GAAP guidance on contract modifications and hedge accounting to ease the financial reporting burden related to the expected market transition from the London Interbank Offered Rate (LIBOR) and other interbank offered rates to alternative reference rates. This guidance is available immediately and may be implemented in any period prior to the guidance expiration on December 31, 2022. The Company has applied this guidance in accounting for the interest rate swap discussed in Note N. Any additional reference rate reform impacts will be accounted for in accordance with ASU 2020-04.

New Accounting Guidance Issued and Not Yet Adopted:

In November 2021, the FASB issued ASU 2021-10, *Government Assistance (Topic 832)*. ASU 2021-10 is intended to increase transparency related to governmental assistance by requiring entities to disclose the types of government assistance, the entity's accounting for government assistance, and the effect of government assistance on an entity's financial statements. This new guidance is effective for all entities for annual reporting periods beginning after December 15, 2021. The Company is in the process of evaluating the impact of the guidance on its annual disclosures.

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.

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

Note B — Acquisition

On November 1, 2021, the Company acquired the industry-leading electronic materials business of H.C. Starck Group GmbH (HCS-Electronic Materials) for a cash purchase price of approximately \$398.9 million, on a cash-free, debt-free basis, subject to a customary purchase price adjustment mechanism. During the six months ended July 1, 2022, acquisition-related inventory step-up expense was \$7.5 million and classified in Cost of Sales and transaction and integration costs were \$2.6 million and classified in Selling, General and Administrative expenses in the accompanying consolidated statements of income. The Company financed the purchase price for the HCS-Electronic Materials acquisition with a new \$300 million five-year term loan pursuant to a delayed draw term loan facility executed in October 2021 and \$103 million of borrowings under its amended revolving credit facility. The maturity date on the revolving credit facility was also extended to October 2026. The interest rate for the term loan is based on LIBOR plus a tiered credit spread that is indexed to the Company's quarterly leverage ratio. This acquired business operates within the Performance Materials and Electronic Materials segments, and the results of operations are included as of the date of acquisition. The combination of Materion and HCS-Electronic Materials enhances the Company's position as the leading supplier to the high growth semiconductor industry.

The fair value estimates of the assets acquired are subject to adjustment during the measurement period (up to one year from the HCS-Electronic Materials Acquisition Date). The primary areas of accounting for the HCS Acquisition that are not yet finalized relate to the fair value of contingencies, income tax accruals, and the impact on residual goodwill. The fair values of these net assets acquired are based on management's estimates and assumptions, as well as other information compiled by management, including valuations that utilize customary valuation procedures and techniques. While we believe that such preliminary estimates provide a reasonable basis for estimating the fair value of assets acquired and liabilities assumed, we will evaluate any additional information prior to finalization of the fair value. During the measurement period, we will adjust preliminary valuations assigned to assets and liabilities if new information is obtained about facts and circumstances that existed as of the HCS Acquisition Date that, if known, would have resulted in revised values for these items as of that date. The impact of all changes, if any, that do not qualify as measurement period adjustments will be included in current period earnings.

During the period subsequent to the HCS-Electronic Materials acquisition, we made certain measurement period adjustments to the acquired assets and liabilities assumed due to clarification of information utilized to determine fair value during the measurement period. Additionally, we paid a working capital true-up of approximately \$3.0 million during the second quarter of 2022 which increased the total purchase price. The preliminary purchase price allocation for the acquisition including these measurement period adjustments is as follows:

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

(Thousands)	Initial Allocation of Consideration	Measurement Period Adjustments	Updated Allocation
Assets:			
Cash and cash equivalents	\$ 3,685	\$ —	\$ 3,685
Accounts receivable	28,352	—	28,352
Inventories	70,681	—	70,681
Prepaid and other current assets	660	(355)	305
Property, plant, and equipment	44,681	355	45,036
Operating lease, right-of-use assets	6,120	—	6,120
Intangible assets	107,800	—	107,800
Other long-term assets	4,528	—	4,528
Goodwill	178,181	3,688	181,869
Total assets acquired	<u>\$ 444,688</u>	<u>\$ 3,688</u>	<u>\$ 448,376</u>
Liabilities:			
Accounts payable	\$ 12,139	\$ —	\$ 12,139
Salaries and wages	2,516	435	2,951
Other liabilities and accrued items	28	—	28
Income taxes	2,183	79	2,262
Other long-term liabilities	5,543	215	5,758
Operating lease liabilities	6,042	—	6,042
Deferred income taxes	20,300	—	20,300
Total liabilities assumed	<u>\$ 48,751</u>	<u>\$ 729</u>	<u>\$ 49,480</u>
Net assets acquired	<u>\$ 395,937</u>	<u>\$ 2,959</u>	<u>\$ 398,896</u>

Assets acquired and liabilities assumed are recognized at their respective fair values as of the acquisition date. The Company engaged specialists to assist in the valuation of inventories, property, plant, and equipment, and intangible assets.

In determining the fair value of the amounts above, inventory is fair valued based on the comparative sales method for work in process and finished goods at the selling price less cost to dispose and remaining manufacturing effort. The remaining working capital accounts' carrying values approximate fair value. For property, plant and equipment and intangible asset values, the Company utilized various forms of the income, cost and market approaches depending on the asset being valued. The Company used a relief from royalty method under the income approach to value its trade names and the developed technology and the multi-period excess earnings method under the income approach to value customer relationships. The significant assumptions used to estimate the fair value of these intangible assets included the discount rate and certain assumptions that form the basis of forecasted future cash flows (including revenue growth rates, royalty rates for trade names and developed technology, and attrition rates for customer relationships). Inputs were generally determined by taking into account independent appraisals and historical data, supplemented by current and anticipated market conditions and are considered Level 3 assets as the assumptions are unobservable inputs developed by the Company.

As part of the acquisition, the Company recorded approximately \$181.9 million of goodwill allocated between its Electronic Materials and Performance Materials segments based on the relative fair values. Goodwill was calculated as the excess of the purchase price over the estimated fair values of the tangible net assets and intangible assets acquired and primarily attributable to the synergies expected to arise after the acquisition dates. The goodwill is not expected to be deductible for U.S. tax purposes.

The following table reports the intangible assets by asset category as of the closing date:

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

(Thousands)	Value at Acquisition	Useful Life
Customer relationships	\$ 50,200	13 years
Technology	35,300	13 years
Trade name	22,300	15 years
Total	<u>\$ 107,800</u>	

The amounts of revenue and income (loss) before taxes of HCS-Electronic Materials in the second quarter of 2022 consolidated statements are \$43.6 million and \$7.6 million, respectively. Full year revenue and income before taxes total \$86.9 million and \$6.0 million, respectively. Income before taxes includes the purchase accounting inventory step-up expense recorded in the first quarter of 2022. Had the HCS-Electronic Materials acquisition occurred as of the beginning of fiscal 2020, the Company's sales and income (loss) before taxes would have been as follows:

	(Unaudited)	
	Three months ended	Six months ended
	July 2, 2021	July 2, 2021
Net Sales	\$ 409,202	\$ 794,586
Profit income (loss) before taxes	\$ 22,138	\$ 41,135

The unaudited pro forma financial information has been calculated after applying our accounting policies and adjusting the historical results with pro forma adjustments that assume the acquisition occurred on January 1, 2020. These unaudited pro forma results do not represent financial results realized, nor are they intended to be a projection of future results. The transaction accounting adjustments and other adjustments are based on available information and assumptions that the Company's management believes are reasonable. Such adjustments are estimates and actual experience may differ from expectations. The pro forma income (loss) before taxes for the second quarter ended and six months ended July 2, 2021 includes approximately \$4.3 million and \$7.2 million, respectively, of additional interest expense related to committed financing to fund the acquisition and acquisition-related intangible asset amortization expense of \$2.0 million and \$4.0 million, respectively, as if the acquisition occurred on January 1, 2020.

Note C — Segment Reporting

The Company changed two segment names during the first quarter of 2022: Performance Alloys and Composites became Performance Materials, and Advanced Materials became Electronic Materials. The Company believes these names better represent the markets served and the advanced next-generation product solutions provided to our customers. Other than the name changes, there were no changes in the composition or structure of the Company's reportable segments in the first half of 2022.

The Company has the following reportable segments: Performance Materials, Electronic Materials, Precision Optics, 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 Materials provides advanced engineered solutions comprised of beryllium and non-beryllium containing alloy systems and custom engineered parts in strip, bulk, rod, plate, bar, tube, and other customized shapes.

Electronic 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 Optics produces thin film coatings, optical filter materials, sputter-coated, and precision-converted thin film materials.

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

The Other reportable segment includes unallocated corporate costs and assets.

Beginning with the first quarter of 2022, the Company began using earnings before interest, taxes, depreciation, depletion and amortization (EBITDA) as the main operating income metric used by management to measure the financial performance of the Company and each segment. The Company made this change because recent acquisitions have resulted in increased purchase accounting amortization expense, which in turn has affected the comparability of results across periods and when compared to other companies. Management believes EBITDA is useful to investors as it better represents the Company's performance excluding the effect of the recent acquisition of significant intangible assets that are now being amortized. EBITDA is not a measurement of financial performance under U.S. GAAP. Although the Company uses EBITDA to assess the performance of its business and for various other purposes, the use of this non-GAAP financial measure as an analytical tool has limitations, and it should not be considered in isolation or as a substitute for analysis of the Company's results of operations as reported in accordance with U.S. GAAP.

The below table presents financial information for each segment and a reconciliation of EBITDA to Net Income (the most directly comparable GAAP financial measure) for the second quarter of 2022 and 2021:

(Thousands)	Second Quarter 2022	Second Quarter 2021	First Six Months Ended 2022	First Six Months Ended 2021
Net sales:				
Performance Materials ⁽¹⁾	\$ 154,889	\$ 125,294	\$ 304,520	\$ 239,437
Electronic Materials ⁽¹⁾	260,971	213,114	531,807	417,758
Precision Optics	29,435	32,591	58,013	68,190
Other	—	—	—	—
Net sales	445,295	370,999	894,340	725,385
Segment EBITDA:				
Performance Materials	\$ 27,229	\$ 22,318	\$ 52,021	\$ 39,110
Electronic Materials	22,337	10,412	34,484	21,342
Precision Optics	3,544	5,547	5,735	13,018
Other	(7,191)	(5,813)	(12,366)	(11,413)
Total Segment EBITDA	45,919	32,464	79,874	62,057
Income tax expense	5,072	3,274	8,093	6,740
Interest expense - net	4,701	858	8,437	1,619
Depreciation, depletion and amortization	12,891	\$ 10,464	\$ 26,070	\$ 19,063
Net income	\$ 23,255	\$ 17,868	\$ 37,274	\$ 34,635

⁽¹⁾ Excludes inter-segment sales of \$0.2 million for the second quarter of 2022 and \$0.5 million for the first six months of 2022 for Performance Materials and \$2.7 million for the second quarter of 2022 and \$8.2 million for the first six months of 2022 for Electronic Materials. Also excludes inter-segment sales of \$3.2 million for the second quarter of 2021 and \$5.9 million for the first six months of 2021 for Electronic Materials. Inter-segment sales are eliminated in consolidation.

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

The following table disaggregates revenue for each segment by end market for the second quarter and first six months of 2022 and 2021:

(Thousands)	Performance Materials	Electronic Materials	Precision Optics	Other	Total
Second Quarter 2022					
End Market					
Semiconductor	\$ 2,446	\$ 213,742	\$ 1,530	\$ —	\$ 217,718
Industrial	41,701	11,957	7,608	—	61,266
Aerospace and defense	27,615	1,284	3,666	—	32,565
Consumer electronics	16,212	280	5,814	—	22,306
Automotive	24,855	1,465	2,708	—	29,028
Energy	10,679	25,361	—	—	36,040
Telecom and data center	16,223	21	—	—	16,244
Other	15,158	6,861	8,109	—	30,128
Total	\$ 154,889	\$ 260,971	\$ 29,435	\$ —	\$ 445,295
Second Quarter 2021					
End Market					
Semiconductor	\$ 1,806	\$ 166,968	\$ 563	\$ —	\$ 169,337
Industrial	30,264	10,687	7,634	—	48,585
Aerospace and defense	19,250	1,660	5,597	—	26,507
Consumer electronics	10,722	266	6,964	—	17,952
Automotive	25,766	1,757	2,107	—	29,630
Energy	4,880	24,216	—	—	29,096
Telecom and data center	13,025	39	—	—	13,064
Other	19,581	7,521	9,726	—	36,828
Total	\$ 125,294	\$ 213,114	\$ 32,591	\$ —	\$ 370,999

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(Thousands)	Performance Materials	Electronic Materials	Precision Optics	Other	Total
First Six Months 2022					
End Market					
Semiconductor	\$ 4,246	\$ 428,664	\$ 2,857	\$ —	\$ 435,767
Industrial	82,520	27,823	16,041	—	126,384
Aerospace and defense	51,299	3,898	8,812	—	64,009
Consumer electronics	29,215	605	11,126	—	40,946
Automotive	47,091	3,122	5,026	—	55,239
Energy	20,778	54,481	—	—	75,259
Telecom and data center	32,303	65	—	—	32,368
Other	37,068	13,149	14,151	—	64,368
Total	\$ 304,520	\$ 531,807	\$ 58,013	\$ —	\$ 894,340
First Six Months 2021					
End Market					
Semiconductor	\$ 2,803	\$ 322,029	\$ 1,034	\$ —	\$ 325,866
Industrial	54,294	23,277	15,009	—	92,580
Aerospace and defense	41,092	3,058	12,173	—	56,323
Consumer electronics	20,766	431	16,424	—	37,621
Automotive	49,273	3,426	4,300	—	56,999
Energy	9,017	51,406	—	—	60,423
Telecom and data center	24,368	109	—	—	24,477
Other	37,824	14,022	19,250	—	71,096
Total	\$ 239,437	\$ 417,758	\$ 68,190	\$ —	\$ 725,385

Note D — 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 a 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.

Transaction Price Allocated to Future Performance Obligations: Accounting Standards Codification 606, *Revenue from Contracts with Customers*, requires that the Company disclose the aggregate amount of transaction price that is allocated to performance obligations that have not yet been satisfied at July 1, 2022. Remaining performance obligations include non-cancelable 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 July 1, 2022, the aggregate amount of the transaction price allocated to remaining performance obligations was approximately \$76.3 million.

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

(Thousands)	July 1, 2022	December 31, 2021	\$ change	% change
Accounts receivable, trade	\$ 213,221	\$ 213,584	\$ (363)	— %
Unbilled receivables	8,916	7,961	955	12 %
Unearned revenue	8,097	7,770	327	4 %

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 related to our receivables were immaterial during the second quarter of 2022.

Unbilled receivables represent expenditures on contracts, plus applicable profit margin, not yet billed. Unbilled receivables are generally 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. The Company recognized approximately \$5.6 million of the December 31, 2021 unearned amounts as revenue during the first six months of 2022.

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 E — Other-net

Other-net for the second quarter and first six months of 2022 and 2021 is summarized as follows:

(Thousands)	Second Quarter Ended		Six Months Ended	
	July 1, 2022	July 2, 2021	July 1, 2022	July 2, 2021
Amortization of intangible assets	\$ 3,099	\$ 1,005	\$ 6,230	\$ 2,178
Metal consignment fees	2,871	2,464	5,882	4,614
Foreign currency (gain) loss	28	(33)	(305)	1,216
Net loss (gain) on disposal of fixed assets	29	24	18	(364)
Other items	(99)	734	(24)	1,024
Total	\$ 5,928	\$ 4,194	\$ 11,801	\$ 8,668

Note F — Income Taxes

The Company's effective tax rate for the second quarter of 2022 and 2021 was 17.9% and 15.5%, respectively, and 17.8% and 16.3% in the first six months of 2022 and 2021, respectively. The effective tax rate for each period in 2022 and 2021 was lower than the statutory tax rate primarily due to the impact of percentage depletion, research and development credits and the foreign derived intangible income deduction. The effective tax rate for the first six months of 2022 included a net discrete income tax benefit of \$0.4 million, primarily related to excess tax benefits from stock-based compensation awards. The effective tax rate for the first six months of 2021 included a net discrete income tax benefit of \$0.5 million, primarily related to excess tax benefits from stock-based compensation awards.

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Note G — Earnings Per Share (EPS)

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

(Thousands, except per share amounts)	Second Quarter Ended		Six Months Ended	
	July 1, 2022	July 2, 2021	July 1, 2022	July 2, 2021
Numerator for basic and diluted EPS:				
Net income	\$ 23,255	\$ 17,868	\$ 37,274	\$ 34,635
Denominator:				
Denominator for basic EPS:				
Weighted-average shares outstanding	20,517	20,429	20,491	20,402
Effect of dilutive securities:				
Stock appreciation rights	81	79	86	75
Restricted stock units	82	93	116	108
Performance-based restricted stock units	43	50	50	62
Diluted potential common shares	206	222	252	245
Denominator for diluted EPS:				
Adjusted weighted-average shares outstanding	20,723	20,651	20,743	20,647
Basic EPS	\$ 1.13	\$ 0.87	\$ 1.82	\$ 1.70
Diluted EPS	\$ 1.12	\$ 0.87	\$ 1.80	\$ 1.68

Adjusted weighted-average shares outstanding - diluted exclude securities totaling 119,744 and 52,709 for the quarters ended July 1, 2022 and July 2, 2021, respectively, and 79,949 and 64,478 for the six months ended July 1, 2022 and July 2, 2021, respectively. These securities are primarily related to restricted stock units and stock appreciation rights with fair market values and exercise prices greater than the average market price of the Company's common shares and were excluded from the dilution calculation as the effect would have been anti-dilutive.

Note H — Inventories

Inventories on the Consolidated Balance Sheets are summarized as follows:

(Thousands)	July 1, 2022	December 31, 2021
Raw materials and supplies	\$ 115,970	\$ 93,518
Work in process	253,012	221,638
Finished goods	53,394	45,959
Inventories, net	<u>\$ 422,376</u>	<u>\$ 361,115</u>

The Company maintains the majority of the precious metals and copper used in production on a consignment basis in order to reduce its exposure to metal market price movements and to reduce its working capital investment. The notional value of off-balance sheet precious metals and copper was \$415.0 million and \$480.2 million as of July 1, 2022 and December 31, 2021, respectively.

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Note I — Customer Prepayments

In 2020, the Company entered into an investment agreement and a master supply agreement with a customer to procure equipment to manufacture product for the customer. The customer provided prepayments to the Company to fund the necessary infrastructure improvements and procure the equipment necessary to supply the customer with the desired product. The Company owns, operates and maintains the equipment that is being used to manufacture product for the customer.

Revenue will be recognized as the Company fulfills purchase orders and ships the commercial product to the customer, as product delivery is considered the satisfaction of the performance obligation.

Additionally, during the second quarter of 2022, the Company entered into an amendment to the investment agreement with the same customer to procure additional equipment to manufacture product for the customer. As of July 1, 2022, the Company has received approximately \$13.1 million in prepayments under the terms of this agreement.

As of July 1, 2022 and December 31, 2021, \$84.6 million and \$72.6 million, respectively, of prepayments are classified as Unearned income on the Consolidated Balance Sheets. The prepayments will remain in Unearned income until commercial purchase orders are received for product serviced out of the equipment, at which time a portion of the purchase order value related to prepayments will be reclassified to Unearned revenue. As of July 1, 2022 \$1.0 million of the prepayments are classified as Unearned revenue.

Note J — 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 ended July 1, 2022 and July 2, 2021, respectively, for the pension plans as shown below. The Pension Benefits column aggregates defined benefit pension plans in the U.S., Germany, Liechtenstein, England, and the U.S. supplemental retirement plans. The Other Benefits column includes the domestic retiree medical and life insurance plan.

(Thousands)	Pension Benefits		Other Benefits	
	Second Quarter Ended		Second Quarter Ended	
	July 1, 2022	July 2, 2021	July 1, 2022	July 2, 2021
Components of net periodic benefit (credit) cost				
Service cost	\$ 292	\$ 436	\$ 20	\$ 20
Interest cost	1,213	1,048	39	29
Expected return on plan assets	(2,378)	(2,474)	—	—
Amortization of prior service (benefit) cost	(18)	(21)	(374)	(374)
Amortization of net loss (gain)	420	577	(68)	(69)
Net periodic benefit (credit) cost	\$ (471)	\$ (434)	\$ (383)	\$ (394)
Settlements	—	—	—	—
Total net benefit (credit) cost	\$ (471)	\$ (434)	\$ (383)	\$ (394)

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(Thousands)	Pension Benefits		Other Benefits	
	Six Months Ended		Six Months Ended	
	July 1, 2022	July 2, 2021	July 1, 2022	July 2, 2021
Components of net periodic benefit (credit) cost				
Service cost	\$ 610	\$ 874	\$ 42	\$ 40
Interest cost	2,436	2,096	78	58
Expected return on plan assets	(4,778)	(4,948)	—	—
Amortization of prior service (benefit) cost	(38)	(42)	(748)	(748)
Amortization of net loss (gain)	850	1,154	(136)	(138)
Net periodic benefit (credit) cost	\$ (920)	\$ (866)	\$ (764)	\$ (788)
Settlements	—	—	—	—
Total net benefit (credit) cost	\$ (920)	\$ (866)	\$ (764)	\$ (788)

The Company did not make any contributions to its domestic defined benefit plan in the second quarter or first six months of 2022 or 2021.

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 (income) expense.

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Note K — 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 2022 and 2021 are as follows:

(Thousands)	Gains and Losses on Cash Flow Hedges					Pension and Post-Employment Benefits	Foreign Currency Translation	Total
	Foreign Currency	Interest Rate	Precious Metals	Copper	Total			
Balance at April 1, 2022	\$ 2,451	\$ 2,485	\$ (246)	\$ —	\$ 4,690	\$ (39,942)	\$ (4,934)	\$ (40,186)
Other comprehensive income (loss) before reclassifications	1,117	756	467	—	2,340	—	(6,343)	(4,003)
Amounts reclassified from accumulated other comprehensive income (loss)	(110)	238	(8)	—	120	(10)	—	110
Net current period other comprehensive (loss) income before tax	1,007	994	459	—	2,460	(10)	(6,343)	(3,893)
Deferred taxes	232	229	105	—	566	(26)	—	540
Net current period other comprehensive (loss) income after tax	775	765	354	—	1,894	16	(6,343)	(4,433)
Balance at July 1, 2022	<u>\$ 3,226</u>	<u>\$ 3,250</u>	<u>\$ 108</u>	<u>\$ —</u>	<u>\$ 6,584</u>	<u>\$ (39,926)</u>	<u>\$ (11,277)</u>	<u>\$ (44,619)</u>
Balance at April 2, 2021	\$ 1,462	\$ —	\$ 320	\$ 280	\$ 2,062	\$ (43,309)	\$ (4,840)	\$ (46,087)
Other comprehensive (loss) income before reclassifications	183	—	(239)	1,145	1,089	—	3,193	4,282
Amounts reclassified from accumulated other comprehensive income (loss)	—	—	65	(1,507)	(1,442)	77	—	(1,365)
Net current period other comprehensive (loss) income before tax	183	—	(174)	(362)	(353)	77	3,193	2,917
Deferred taxes	42	—	(40)	(82)	(80)	(6)	—	(86)
Net current period other comprehensive (loss) income after tax	141	—	(134)	(280)	(273)	83	3,193	3,003
Balance at July 2, 2021	<u>\$ 1,603</u>	<u>\$ —</u>	<u>\$ 186</u>	<u>\$ —</u>	<u>\$ 1,789</u>	<u>\$ (43,226)</u>	<u>\$ (1,647)</u>	<u>\$ (43,084)</u>

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(Thousands)	Gains and Losses on Cash Flow Hedges					Pension and Post-Employment Benefits	Foreign Currency Translation	Total
	Foreign Currency	Interest Rate	Precious Metals	Copper	Total			
Balance at December 31, 2021	\$ 2,348	\$ —	\$ 72	\$ —	\$ 2,420	\$ (39,702)	\$ (2,887)	\$ (40,169)
Other comprehensive income (loss) before reclassifications	1,270	3,868	(53)	—	5,085	—	(8,390)	(3,305)
Amounts reclassified from accumulated other comprehensive income (loss)	(130)	353	99	—	322	(1,011)	—	(689)
Net current period other comprehensive (loss) income before tax	1,140	4,221	46	—	5,407	(1,011)	(8,390)	(3,994)
Deferred taxes	262	971	10	—	1,243	(787)	—	456
Net current period other comprehensive (loss) income after tax	878	3,250	36	—	4,164	(224)	(8,390)	(4,450)
Balance at July 1, 2022	\$ 3,226	\$ 3,250	\$ 108	\$ —	\$ 6,584	\$ (39,926)	\$ (11,277)	\$ (44,619)
Balance at December 31, 2020	\$ 519	\$ —	\$ (170)	\$ 468	\$ 817	\$ (43,473)	\$ 4,017	\$ (38,639)
Other comprehensive (loss) income before reclassifications	1,268	—	502	2,436	4,206	—	(5,664)	(1,458)
Amounts reclassified from accumulated other comprehensive income (loss)	140	—	(39)	(3,041)	(2,940)	234	—	(2,706)
Net current period other comprehensive (loss) income before tax	1,408	—	463	(605)	1,266	234	(5,664)	(4,164)
Deferred taxes	324	—	107	(137)	294	(13)	—	281
Net current period other comprehensive (loss) income after tax	1,084	—	356	(468)	972	247	(5,664)	(4,445)
Balance at July 2, 2021	\$ 1,603	\$ —	\$ 186	\$ —	\$ 1,789	\$ (43,226)	\$ (1,647)	\$ (43,084)

Reclassifications from accumulated other comprehensive income (loss) of gains and losses on foreign currency cash flow hedges are recorded in Net sales in the Consolidated Statements of Income. Reclassifications from accumulated other comprehensive income (loss) of gains and losses on precious metal and copper cash flow hedges are recorded in Cost of sales in the Consolidated Statements of Income. Reclassifications from accumulated other comprehensive income (loss) of gains and losses on the interest rate cash flow hedge is recorded in Interest expense in the Consolidated Statements of Income. Refer to Note N for additional details on cash flow hedges.

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

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Note L — Stock-based Compensation Expense

Stock-based compensation expense, which includes awards settled in shares and in cash, was \$2.0 million and \$3.8 million in the second quarter and first six months of 2022, respectively, compared to \$2.2 million and \$3.8 million, respectively, in the same periods of 2021.

The Company granted 45,016 stock appreciation rights (SARs) to certain employees during the first six months of 2022. The weighted-average exercise price per share and weighted-average fair value per share of the SARs granted during the six months ended July 1, 2022 were \$80.85 and \$25.87, 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	1.56 %
Dividend yield	0.59 %
Volatility	38.5 %
Expected term (in years)	4.4

The Company granted 59,599 stock-settled restricted stock units (RSUs) to certain employees during the first six months of 2022. 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 \$80.87 for stock-settled RSUs granted to employees during the six months ended July 1, 2022. RSUs are generally expensed over the vesting period of three years for employees.

The Company granted stock-settled performance-based restricted stock units (PRSUs) to certain employees in the first six months of 2022. The weighted-average fair value of the stock-settled PRSUs was \$97.79 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 its total return to shareholders over the vesting period relative to a peer group's performance over the same period.

At July 1, 2022, unrecognized compensation cost related to the unvested portion of all stock-based awards was approximately \$15.2 million, and is expected to be recognized over the remaining vesting period of the respective grants.

Note M — Fair Value of Financial Instruments

The Company measures and records financial instruments at fair value. A hierarchy is used for those instruments measured at fair value that distinguishes between assumptions based 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 July 1, 2022 and December 31, 2021:

(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)	
	2022	2021	2022	2021	2022	2021	2022	2021
Financial Assets								
Deferred compensation investments	\$ 2,899	\$ 4,426	\$ 2,899	\$ 4,426	\$ —	\$ —	\$ —	\$ —
Foreign currency forward contracts	2,942	3,368	—	—	2,942	3,368	—	—
Interest rate swap	4,221	—	—	—	4,221	—	—	—
Precious metal swaps	214	116	—	—	214	116	—	—
Total	\$ 10,276	\$ 7,910	\$ 2,899	\$ 4,426	\$ 7,377	\$ 3,484	\$ —	\$ —
Financial Liabilities								
Deferred compensation liability	\$ 2,899	\$ 4,426	\$ 2,899	\$ 4,426	\$ —	\$ —	\$ —	\$ —
Foreign currency forward contracts	627	136	—	—	627	136	—	—
Precious metal swaps	76	24	—	—	76	24	—	—
Total	\$ 3,602	\$ 4,586	\$ 2,899	\$ 4,426	\$ 703	\$ 160	\$ —	\$ —

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, metals, and interest rates. The carrying values of the other working capital items and debt in the Consolidated Balance Sheets approximate fair values as of July 1, 2022 and December 31, 2021. The Company's deferred compensation investments and liabilities are based on the fair value of the investments corresponding to the employees' investment selections, primarily in mutual funds, based on quoted prices in active markets for identical assets. Deferred compensation investments are primarily presented in Other assets. Deferred compensation liabilities are primarily presented in Other long-term liabilities.

Note N — Derivative Instruments and Hedging Activity

The Company uses derivative contracts to hedge exposure to movements in interest rates associated with borrowings, foreign currency exposures, and precious metal and copper exposures. The objectives and strategies for using derivatives in these areas are as follows:

Interest Rate. On March 4, 2022, the Company entered into a \$100.0 million interest rate swap to hedge the interest rate risk on the Credit Agreement described in Note P. The swap hedges the change in 1-month LIBOR from March 4, 2022 to November 2, 2026. The purpose of this hedge is to manage the risk of changes in the monthly interest payments attributable to changes in the benchmark interest rate.

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

The use of forward contracts locks in a firm rate and eliminates any downside from an adverse rate movement as well as any benefit from a favorable rate movement. The Company may from time to time choose to hedge with options or

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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 nature of instruments to use to hedge exposures. Management analyzes the effective hedged rates and the actual and projected gains and losses on the hedging transactions against the program objectives, targeted rates, and levels of risk assumed. Foreign currency contracts are typically layered in at different times for a specified exposure period in order to minimize the impact of market rate movements.

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 product containing precious metal is fabricated and delivered to the customer, the metal content is purchased out of consignment based on the current market price. The price paid by the Company for the precious metal forms the basis for the price charged to the customer for the metal content in the product. 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 consignment fees based upon the value of the metal as it fluctuates while on consignment. Each financial institution retains title to its consigned precious metal until it is purchased by the Company, and it is the Company's typical practice to purchase metal out of consignment only after a product containing that metal has been purchased by one of our customers.

In certain instances, a customer may want to fix 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 out of consignment 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 refined and purchased, thereby reducing the exposure to adverse movements in the price of the metal. The Company may also enter into hedges to mitigate the risk relating to the prices of the metals that we process or refine.

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 in these instances.

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 infrequent and, when made 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 paid when the metal is transferred back to the consignment line, thereby limiting any price exposure during the time when the metal was owned by the Company.

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

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All derivatives are recorded on the balance sheet at fair value. If a 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) and reclassified into income in the same period or periods during which the hedged transaction affects 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 derivative assets and liabilities are classified as short-term or long-term depending upon the contract maturity date.

The following table summarizes the notional amount and the fair value of the Company's outstanding derivatives not designated as hedging instruments (on a gross basis) and the balance sheet classification as of July 1, 2022 and December 31, 2021:

(Thousands)	July 1, 2022		December 31, 2021	
	Notional Amount	Fair Value	Notional Amount	Fair Value
Foreign currency forward contracts				
Prepaid and other current assets	\$ 14,020	\$ 533	\$ 55,063	\$ 2,132
Other liabilities and accrued items	13,466	587	9,425	128

These outstanding foreign currency derivatives were related to balance sheet hedges and intercompany loans. Other-net included less than \$0.1 million of foreign currency losses in the second quarter of 2022 and \$0.7 million of foreign currency gains related to derivatives in the first six months of 2022, compared to \$0.4 million of foreign currency losses and \$1.2 million of foreign currency gains in the second quarter and first six months of 2021, respectively.

The following table summarizes the notional amount and the fair value of the Company's outstanding derivatives designated as cash flow hedges (on a gross basis) and balance sheet classification as of July 1, 2022 and December 31, 2021:

(Thousands)	July 1, 2022				
	Notional Amount	Fair Value			
		Prepaid and other current assets	Other assets	Other liabilities and accrued items	Other long-term liabilities
Foreign currency forward contracts - yen	\$ 4,091	\$ 453	\$ 34	\$ 40	\$ —
Foreign currency forward contracts - euro	31,827	1,827	95	—	—
Precious metal swaps	6,802	199	15	76	—
Interest rate swap	100,000	1,329	2,892	—	—
Total	\$ 142,720	\$ 3,808	\$ 3,036	\$ 116	\$ —
(Thousands)	December 31, 2021				
	Notional Amount	Fair Value			
		Prepaid and other current assets	Other assets	Other liabilities and accrued items	Other long-term liabilities
Foreign currency forward contracts - yen	\$ 3,907	\$ 131	\$ 2	\$ —	\$ —
Foreign currency forward contracts - euro	28,412	1,102	—	—	8
Precious metal swaps	6,256	116	—	24	—
Total	\$ 38,575	\$ 1,349	\$ 2	\$ 24	\$ 8

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

All of the contracts summarized above were designated and effective as cash flow hedges. We expect to reclassify \$3.7 million of net gains into earnings in the next 12 months contemporaneously with the earnings effects of the related forecasted transactions. At July 1, 2022, the maximum term of derivative instruments that hedge forecasted transactions was approximately four years. Refer to Note K for further details related to OCI.

The following table summarizes the amounts reclassified from accumulated other comprehensive income relating to the Company's outstanding derivatives designated as cash flow hedges and associated income statement classification as of the second quarter and first six months of 2022 and 2021:

(Thousands)		Second Quarter Ended	
		July 1, 2022	July 2, 2021
Hedging relationship	Line item		
Foreign currency forward contracts	Net sales	\$ (110)	\$ —
Precious metal swaps	Cost of sales	(8)	65
Interest rate swap	Interest expense - net	238	—
Copper swaps	Cost of sales	—	(1,507)
Total		\$ 120	\$ (1,442)

(Thousands)		Six Months Ended	
		July 1, 2022	July 2, 2021
Hedging relationship	Line item		
Foreign currency forward contracts	Net sales	\$ (130)	\$ 140
Precious metal swaps	Cost of sales	99	(39)
Interest rate swap	Interest expense - net	353	—
Copper swaps	Cost of sales	—	(3,041)
Total		\$ 322	\$ (2,940)

Note O — Contingencies

Legal Proceedings. For general information regarding legal proceedings relating to Chronic Beryllium Disease Claims, refer to Note T "Contingencies and Commitments" in the Company's 2021 Annual Report on Form 10-K.

One beryllium case was outstanding as of July 1, 2022. The Company does not expect the resolution of this open matter to have a material impact on the consolidated financial statements. As previously reported, a settlement agreement had been reached in one case, and the case was dismissed during the second quarter.

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.

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

On October 14, 2020, Garett Lucyk, et al. v. Materion Brush Inc., et al., case number 20CV0234, a wage and hour purported collective and class action, was filed in the Northern District of Ohio against the Company and its subsidiary, Materion Brush Inc. (collectively, the Company). Plaintiff, a former hourly production employee at the Company's Elmore, Ohio facility, alleges, among other things, that he and other similarly situated employees nationwide are not paid for all time they spend donning and doffing personal protective equipment in violation of the Fair Labor Standards Act and Ohio law. Plaintiff filed a motion for conditional certification, which the Company opposed. The motion has been fully briefed, and the parties are awaiting a decision from the court. The Company believes that it has substantive defenses and intends to vigorously defend this suit, absent a negotiated resolution.

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 \$4.3 million and \$4.8 million at July 1, 2022 and December 31, 2021, respectively, and is included in Other liabilities and accrued items and Other long-term liabilities on the Consolidated Balance Sheet. Environmental projects tend to be long-term, and the final actual remediation costs may differ from the amounts currently recorded.

Note P — Debt

(Thousands)	July 1, 2022	December 31, 2021
Borrowings under Credit Agreement	\$ 205,091	\$ 152,296
Borrowings under the Term Loan Facility	292,500	300,000
Foreign debt	4,012	2,252
Total debt outstanding	501,603	454,548
Current portion of long-term debt	(15,333)	(15,359)
Gross long-term debt	486,270	439,189
Unamortized deferred financing fees	(4,305)	(4,801)
Long-term debt	\$ 481,965	\$ 434,388

As of July 1, 2022 and December 31, 2021, the Company had \$205.1 million outstanding at an average interest rate of 3.56% and \$152.3 million outstanding at an average interest rate of 2.12%, respectively, under its revolving credit facility. The available borrowing capacity under the revolving credit facility as of July 1, 2022 was \$124.0 million. The Company has the option to repay or borrow additional funds under the revolving credit facility until the maturity date in 2026. The amended and restated credit agreement governing the revolving credit facility (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 July 1, 2022.

The balance outstanding on the term loan facility as of July 1, 2022 and December 31, 2021 was \$292.5 million and \$300.0 million, respectively.

At July 1, 2022 and December 31, 2021, there was \$46.4 million and \$46.3 million, respectively, outstanding against the letters of credit sub-facility.

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 electronic, thermal, and structural applications. Our products are sold into numerous end markets, including semiconductor, industrial, aerospace and defense, automotive, consumer electronics, energy, and telecom and data center.

Coronavirus (COVID-19) Second Quarter 2022 Update

In March 2020, the World Health Organization characterized a novel strain of the coronavirus, known as COVID-19, as a pandemic. The duration of the COVID-19 pandemic and the long-term impacts on the economy are uncertain and could impact the Company's estimates. Management continues to manage global macroeconomic impacts on supply chains, inflationary costs, and temporary plant shutdowns, labor availability and costs, all of which impacted the Company during the six months of 2022.

RESULTS OF OPERATIONS

Second Quarter

(Thousands, except per share data)	Second Quarter Ended			
	July 1, 2022	July 2, 2021	\$ Change	% Change
Net sales	\$ 445,295	\$ 370,999	\$ 74,296	20 %
Value-added sales	277,226	207,887	69,339	33 %
Gross margin	87,427	69,581	17,846	26 %
Gross margin as a % of value-added sales	32 %	33 %		
Selling, general, and administrative (SG&A) expense	42,047	38,060	3,987	10 %
SG&A expense as a % of value-added sales	15 %	18 %		
Research and development (R&D) expense	7,592	6,604	988	15 %
R&D expense as a % of value-added sales	3 %	3 %		
Restructuring expense	—	—	—	— %
Other—net	5,928	4,194	1,734	41 %
Operating profit	31,860	20,723	11,137	54 %
Other non-operating (income)—net	(1,168)	(1,277)	109	(9)%
Interest expense—net	4,701	858	3,843	448 %
Income before income taxes	28,327	21,142	7,185	34 %
Income tax expense	5,072	3,274	1,798	55 %
Net income	\$ 23,255	\$ 17,868	\$ 5,387	30 %
Diluted earnings per share	\$ 1.12	\$ 0.87	\$ 0.25	29 %

Net sales of \$445.3 million in the second quarter of 2022 increased \$74.3 million from \$371.0 million in the second quarter of 2021. Increased net sales in the Performance Materials and Electronic Materials segments were partially offset by a net sales decrease in the Precision Optics segment. Volume and price increases drove growth in our semiconductor (29%), industrial (26%), telecom (24%), consumer electronic (24%), energy (24%) and defense (23%) end markets when compared to the same period last year. The acquisition of HCS-Electronic Materials, which was completed in the fourth quarter of 2021, accounted for \$43.6 million of the net sales increase, most of which are sales into the semiconductor end market. See Note C to the Consolidated Financial Statements for additional details on the year over year changes in our net sales by segment and market.

The change in precious metal and copper prices favorably impacted net sales during the second quarter of 2022 by \$1.3 million compared to prior year.

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 precious metal market prices and changes in mix due to customer-supplied material. 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 \$277.2 million in the second quarter of 2022 increased \$69.3 million, or 33%, compared to the second quarter of 2021. The acquisition of HCS-Electronic Materials, which was completed in the fourth quarter of 2021, accounted for \$43.6 million of the increase. The remaining value-added sales increase was driven by increased value-added sales into the energy (43%), semiconductor (23%) and industrial (13%) end markets.

Gross margin in the second quarter of 2022 was \$87.4 million, which was up 26% compared to the second quarter of 2021. Gross margin expressed as a percentage of value-added sales decreased to 32% in the second quarter of 2022 from 33% in the second quarter of 2021. The decrease was driven by higher pre-production costs associated with the production ramp of the new wide area clad facility and higher costs due to supply chain pressures.

SG&A expense was \$42.0 million in the second quarter of 2022, compared to \$38.1 million in the second quarter of 2021. The increase in SG&A expense is due to higher HCS-Electronic Materials and Optics Balzers integration cost of \$1.0 million, ongoing HCS-Electronic Materials cost of \$2.4 million and increased business support investment and increased travel. Despite the higher cost, SG&A expense as a percentage of value-added sales decreased from 18% to 15% year over year.

R&D expense consists primarily of direct personnel costs for product innovation including pre-production development, evaluation, and testing of new products, prototypes, and applications to deliver new high performing advanced materials to our customers. R&D expense accounted for 3% of value-added sales in the second quarter of both 2022 and 2021.

Other-net was \$5.9 million of expense in the second quarter of 2022, or a \$1.7 million increase from the second quarter of 2021, primarily driven \$2.1 million of increased intangible asset amortization expense, related to the acquisition of HCS-Electronic Materials. Refer to Note E to the Consolidated Financial Statements for details of the major components within Other-net.

Other non-operating (income)-net includes components of pension and post-retirement expense other than service costs. Refer to Note J to the Consolidated Financial Statements for details of the components.

Interest expense-net was \$4.7 million and \$0.9 million in the second quarter of 2022 and 2021, respectively. The increase in interest expense is primarily due to increased borrowings under our revolving credit facility and interest owed on our new term loan, the proceeds of which were used to fund the purchase price for the acquisition of HCS-Electronic Materials.

Income tax expense for the second quarter of 2022 was \$5.1 million, compared to \$3.3 million in the second quarter of 2021. The effective tax rate for the second quarter of 2022 and 2021 was 17.9% and 15.5%, respectively. The effective tax rate for the second quarter of both 2022 and 2021 was lower than the statutory tax rate primarily due to the impact of percentage depletion, research and development credits and the foreign derived intangible income deduction. See Note F to the Consolidated Financial Statements for additional discussion.

Six Months

(Thousands, except per share data)	Six Months Ended			
	July 1, 2022	July 2, 2021	\$ Change	% Change
Net sales	\$ 894,340	\$ 725,385	\$ 168,955	23 %
Value-added sales	543,994	406,469	137,525	34 %
Gross margin	162,718	136,377	26,341	19 %
Gross margin as a % of value-added sales	30 %	34 %		
SG&A expense	83,708	74,836	8,872	12 %
SG&A expense as a % of value-added sales	15 %	18 %		
R&D expense	14,666	12,810	1,856	14 %
R&D expense as a % of value-added sales	3 %	3 %		
Restructuring (income) expense	1,076	(378)	1,454	(385)%
Other—net	11,801	8,668	3,133	36 %
Operating profit	51,467	40,441	11,026	27 %
Other non-operating (income)—net	(2,337)	(2,553)	216	(8)%
Interest expense—net	8,437	1,619	6,818	421 %
Income before income taxes	45,367	41,375	3,992	10 %
Income tax expense	8,093	6,740	1,353	20 %
Net income	\$ 37,274	\$ 34,635	\$ 2,639	8 %
Diluted earnings per share	\$ 1.80	\$ 1.68	\$ 0.12	7 %

Net sales of \$894.3 million in the first six months of 2022 increased \$169.0 million from \$725.4 million in the first six months of 2021. Increased net sales in the Performance Materials and Electronic Materials segments were partially offset by net sales decrease in the Precision Optics segment. Volume and price increases drove growth in our semiconductor (34%), industrial (37%), telecom (32%) and energy (25%) end markets when compared to the same period last year. The acquisition of HCS-Electronic Materials, which was completed in the fourth quarter of 2021, accounted for \$86.9 million of the net sales increase, most of which are sales into the semiconductor end market. See Note C to the Consolidated Financial Statements for additional details on the year over year changes in our net sales by segment and market.

The change in precious metal and copper market prices favorably impacted net sales during the first six months of 2022 by \$6.5 million compared to prior year.

Value-added sales of \$544.0 million in the first six months of 2022 increased \$137.5 million, or 34%, compared to the first six months of 2021. The acquisition of HCS-Electronic Materials, which was completed in the fourth quarter of 2021, accounted for \$86.9 million of the increase. The remaining value-added sales increase was driven by increased value-added sales into the energy (52%), industrial (24%), telecom (24%) and semiconductor (22%) end markets.

Gross margin in the first half of 2022 was \$162.7 million, which was up 19% compared to the first half of 2021. Gross margin expressed as a percentage of value-added sales decreased to 30% in the first six months of 2022 from 34% in the first six months of 2021. The decrease was primarily driven by \$7.5 million of amortization of the inventory step up from the HCS-Electronic Material acquisition made in the fourth quarter of 2021, and pre-production costs associated with the set-up of the new wide area clad facility.

SG&A expense was \$83.7 million in the first six months of 2022, compared to \$74.8 million in the first six months of 2021. The increase in SG&A expense for the first six months of 2022 was driven by \$2.8 million of integration costs, \$4.9 million of HCS-Electronic Materials ongoing spend and the remainder due to increased business support investment and increased travel. Expressed as a percentage of value-added sales, SG&A expense was 15% and 18% in the first half of 2022 and 2021, respectively.

R&D expense consists primarily of direct personnel costs for product innovation including pre-production development, evaluation, and testing of new products, prototypes, and applications to deliver new high performing advanced materials to our customers. R&D expense accounted for 3% of value-added sales in the first half of both 2022 and 2021.

Restructuring (income) expense consists primarily of cost reduction actions taken in order to reduce our fixed cost structure. In the first six months of 2022, we recorded a combined total of \$1.1 million of restructuring charges in our Precision Optics, Electronic Materials and Other segments.

During the first six months of 2021, we substantially completed the closure of our Large Area Coatings business and recorded \$0.4 million of income related to lower than expected facility closure costs that were recorded in 2020.

Other-net was \$11.8 million of expense in the first six months of 2022, or a \$3.1 million increase from the first six months of 2021, primarily driven \$4.1 million of increased intangible asset amortization expense, related to the acquisition of HCS-Electronic Materials. Refer to Note E to the Consolidated Financial Statements for details of the major components within Other-net.

Other non-operating (income)-net includes components of pension and post-retirement expense other than service costs. Refer to Note J to the Consolidated Financial Statements for details of the components.

Interest expense-net was \$8.4 million and \$1.6 million in the first six months of 2022 and 2021, respectively. The increase in interest expense is primarily due to increased borrowings under our revolving credit facility and interest owed on our new term loan, the proceeds of which were used to fund the purchase price for the acquisition of HCS-Electronic Materials.

Income tax expense for the first half of 2022 was \$8.1 million, compared to \$6.7 million in the first half of 2021. The Company's effective tax rate for the first six months of 2022 and 2021 was 17.8% and 16.3%, respectively. The effective tax rate for each period in 2022 and 2021 was lower than the statutory tax rate primarily due to the impact of percentage depletion, research and development credits and the foreign derived intangible income deduction. The effective tax rate for the first six months of 2022 included a net discrete income tax benefit of \$0.4 million, primarily related to excess tax benefits from stock-based compensation awards. The effective tax rate for the first six months of 2021 included a net discrete income tax expense of \$0.5 million, primarily related to excess tax benefits from stock-based compensation awards.

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 2022 and 2021 is as follows:

(Thousands)	Second Quarter Ended		Six Months Ended	
	July 1, 2022	July 2, 2021	July 1, 2022	July 2, 2021
Net sales				
Performance Materials	\$ 154,889	\$ 125,294	\$ 304,520	\$ 239,437
Electronic Materials	260,971	213,114	531,807	417,758
Precision Optics	29,435	32,591	58,013	68,190
Other	—	—	—	—
Total	\$ 445,295	\$ 370,999	\$ 894,340	\$ 725,385
Less: pass-through metal costs				
Performance Materials	\$ 20,923	\$ 16,696	\$ 41,436	\$ 30,007
Electronic Materials	146,779	146,214	307,738	287,909
Precision Optics	18	9	67	43
Other	349	193	1,105	957
Total	\$ 168,069	\$ 163,112	\$ 350,346	\$ 318,916
Value-added sales				
Performance Materials	\$ 133,966	\$ 108,598	\$ 263,084	\$ 209,430
Electronic Materials	114,192	66,900	224,069	129,849
Precision Optics	29,417	32,582	57,946	68,147
Other	(349)	(193)	(1,105)	(957)
Total	\$ 277,226	\$ 207,887	\$ 543,994	\$ 406,469

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 precious metal market 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 market 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.

The cost of gold, silver, platinum, palladium, copper, ruthenium, iridium, rhodium, rhenium, and osmium can be quite volatile. Our pricing policy is to directly pass the market 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.

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 Materials, Electronic Materials, Precision Optics, and Other. The Other reportable segment includes unallocated corporate costs.

Performance Materials

Second Quarter

(Thousands)	Second Quarter Ended			
	July 1, 2022	July 2, 2021	\$ Change	% Change
Net sales	\$ 154,889	\$ 125,294	\$ 29,595	24 %
Value-added sales	133,966	108,598	25,368	23 %
EBITDA	27,229	22,318	4,911	22 %

Net sales from the Performance Materials segment of \$154.9 million in the second quarter of 2022 increased 24% compared to net sales of \$125.3 million in the second quarter of 2021. The increase in sales was primarily due to higher volume in energy, industrial and aerospace markets. In addition, sales attributable to the HCS-Electronic Materials acquisition increased sales in this segment by \$7.9 million.

Value-added sales of \$134.0 million in the second quarter of 2022 were 23% higher than value-added sales of \$108.6 million in the second quarter of 2021. The increase in value-added sales was due to the same factors driving the increase in net sales.

EBITDA for the Performance Materials segment was \$27.2 million in the second quarter of 2022 compared to \$22.3 million in the second quarter of 2021. The increase in EBITDA was primarily due to the same factors driving the increase in net sales, partially offset by \$4.6 million of incremental start up costs for the new facility and manufacturing inefficiencies.

Six Months

(Thousands)	Six Months Ended			
	July 1, 2022	July 2, 2021	\$ Change	% Change
Net sales	\$ 304,520	\$ 239,437	\$ 65,083	27 %
Value-added sales	263,084	209,430	53,654	26 %
EBITDA	52,021	39,110	12,911	33 %

Net sales from the Performance Materials segment of \$304.5 million in the first six months of 2022 increased 27% compared to net sales of \$239.4 million in the first six months of 2021. The increase in sales was due to higher volume in industrial, defense and energy end markets. In addition, sales from HCS-Electronic Materials increased sales in this segment by \$14.6 million. These impacts were slightly offset by a sale to a defense customer in 2021 that did not repeat in 2022 and a slight decrease in automotive market sales as a result of the global chip shortage impacting the timing of demand.

Value-added sales of \$263.1 million in the first six months of 2022 were 26% higher than value-added sales of \$209.4 million in the first six months of 2021. The increase in value-added sales was due to the same factors driving the increase in net sales.

EBITDA for the Performance Materials segment was \$52.0 million in the first six months of 2022 compared to \$39.1 million in the first six months of 2021. The increase in EBITDA was primarily due to the same factors driving the increase in net sales, partially offset by acquisition costs of \$2.7 million, primarily related to purchase accounting inventory step up charges, as well as \$8.2 million of incremental start up costs for the new facility and manufacturing inefficiencies.

Electronic Materials

Second Quarter

(Thousands)	Second Quarter Ended			
	July 1, 2022	July 2, 2021	\$ Change	% Change
Net sales	\$ 260,971	\$ 213,114	47,857	22 %
Value-added sales	114,192	66,900	47,292	71 %
EBITDA	22,337	10,412	11,925	115 %

Net sales from the Electronic Materials segment of \$261.0 million in the second quarter of 2022 were 22% higher than net sales of \$213.1 million in the second quarter of 2021. The increase in net sales was primarily due to \$35.7 million in net sales from the HCS-Electronic Materials acquisition and higher organic sales volumes in the semiconductor, energy and industrial markets. Increase in sales were partially offset by \$0.7 million due to lower pass-through metal market prices.

Value-added sales of \$114.2 million in the second quarter of 2022 increased 71% compared to value-added sales of \$66.9 million in the second quarter of 2021. The increase was primarily driven by \$35.7 million in value-added sales from the HCS-Electronic Materials acquisition as well as higher organic sales volumes into the semiconductor, industrial, energy and other markets.

EBITDA for the Performance Materials segment was \$22.3 million in the second quarter of 2022 compared to \$10.4 million in the second quarter of 2021. The increase in EBITDA is due to increased sales volumes, partially offset by increases in SG&A expense, mainly driven by R&D expense as the business continues to invest in developing future customer solutions.

Six Months

(Thousands)	Six Months Ended			
	July 1, 2022	July 2, 2021	\$ Change	% Change
Net sales	\$ 531,807	\$ 417,758	114,049	27 %
Value-added sales	224,069	129,849	94,220	73 %
EBITDA	34,484	21,342	13,142	62 %

Net sales from the Electronic Materials segment of \$531.8 million in the first six months of 2022 were 27% higher than net sales of \$417.8 million in the first six months of 2021. The increase in net sales was primarily due to \$72.3 million from the HCS-Electronic Materials acquisition and higher organic sales volumes in the semiconductor, industrial, energy and other markets, as well as the sales impact of higher pass-through metal prices of \$1.4 million.

Value-added sales of \$224.1 million in the first half of 2022 increased 73% compared to value-added sales of \$129.8 million in the first half of 2021. The increase was primarily driven by \$72.3 million in value-added sales from the HCS-Electronic Materials acquisition as well as higher organic sales volumes into the semiconductor, industrial, energy and other markets.

EBITDA for the Electronic Materials segment was \$34.5 million in the first six months of 2022 compared to \$21.3 million in the first six months of 2021. The increase in EBITDA is due to increased sales volumes, partially offset by the amortization of the HCS-Electronic Material inventory step up of \$5.0 million.

Precision Optics**Second Quarter**

(Thousands)	Second Quarter Ended			
	July 1, 2022	July 2, 2021	\$ Change	% Change
Net sales	\$ 29,435	\$ 32,591	(3,156)	(10)%
Value-added sales	29,417	32,582	(3,165)	(10)%
EBITDA	3,544	5,547	(2,003)	(36)%

Net sales from the Precision Optics segment of \$29.4 million in the second quarter of 2022 decreased 10% compared to net sales of \$32.6 million in the second quarter of 2021. The change was primarily driven by a reduction in sales related to COVID-19 PCR testing programs, the discontinuation of a consumer electronic application, foreign currency headwinds and the temporary government-mandated shut down of our Shanghai facility due to COVID-19.

Value-added sales of \$29.4 million in the second quarter of 2022 decreased 10% compared to value-added sales of \$32.6 million in the second quarter of 2021. The decrease in value-added sales was due to the same factors driving the decrease in net sales.

EBITDA for the Precision Optics segment was \$3.5 million in the second quarter of 2022 compared to \$5.5 million in the second quarter of 2021. The decrease in EBITDA was driven by decreased volumes, the temporary shut down of the Shanghai facility, and related unabsorbed costs.

Six Months

(Thousands)	Six Months Ended			
	July 1, 2022	July 2, 2021	\$ Change	% Change
Net sales	\$ 58,013	\$ 68,190	(10,177)	(15)%
Value-added sales	57,946	68,147	(10,201)	(15)%
EBITDA	5,735	13,018	(7,283)	(56)%

Net sales from the Precision Optics segment of \$58.0 million in the first half of 2022 decreased 15% compared to net sales of \$68.2 million in the first half of 2021. The change was primarily driven by a reduction in sales related to COVID-19 PCR testing programs, the discontinuation of a consumer electronic application, foreign currency headwinds and the temporary government-mandated shut down of our Shanghai facility due to COVID-19.

Value-added sales of \$57.9 million in the first half of 2022 decreased 15% compared to value-added sales of \$68.1 million in the first half of 2021. The decrease in value-added sales was due to the same factors driving the decrease in net sales.

EBITDA for the Precision Optics segment was \$5.7 million in the first six months of 2022 compared to \$13.0 million in the first six months of 2021. The decrease in EBITDA was driven by decreased volumes, the temporary shut down of the Shanghai facility, related unabsorbed costs and restructuring charges incurred during the first six months of 2022.

Other**Second Quarter**

(Thousands)	Second Quarter Ended			
	July 1, 2022	July 2, 2021	\$ Change	% Change
Net sales	\$ —	\$ —	—	— %
Value-added sales	(349)	(193)	(156)	81 %
EBITDA	(7,191)	(5,813)	(1,378)	24 %

The Other reportable segment in total includes unallocated corporate costs.

Corporate costs were \$7.2 million in the second quarter of 2022 compared to \$5.8 million in the second quarter of 2021. Corporate costs accounted for 3% of Company-wide value-added sales in the second quarter of both 2022 and 2021. The

increase in corporate costs in the second quarter of 2022 compared to the second quarter of 2021 is primarily related to increased employee related costs due to business support investments and HCS-Electronic Materials integration costs.

Six Months

(Thousands)	Six Months Ended			
	July 1, 2022	July 2, 2021	\$ Change	% Change
Net sales	\$ —	\$ —	—	— %
Value-added sales	(1,105)	(957)	(148)	15 %
EBITDA	(12,366)	(11,413)	(953)	8 %

Corporate costs were \$12.4 million in the first half of 2022 compared to \$11.4 million in the first half of 2021. Corporate costs accounted for 2% and 3% of Company-wide value-added sales in the first half of 2022 and 2021, respectively. The increase in corporate costs in the first half of 2022 compared to the first half of 2021 is primarily related to HCS-Electronic Material integration costs and increased business support investments.

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		
	July 1, 2022	July 2, 2021	\$ Change
Net cash provided by operating activities	\$ 21,415	\$ 44,065	\$ (22,650)
Net cash used in investing activities	(40,596)	(57,109)	16,513
Net cash provided by financing activities	38,418	11,522	26,896
Effects of exchange rate changes	(1,524)	(11)	(1,513)
Net change in cash and cash equivalents	\$ 17,713	\$ (1,533)	\$ 19,246

Net cash provided by operating activities totaled \$21.4 million in the first six months of 2022 versus \$44.1 million in the prior-year period. The decrease in operating cash flow was primarily due to cash used to fund higher working capital due to higher inventory to support increasing demand and sales and higher incentive compensation paid out in the first quarter, partially offset by a higher net income and an increase in unearned income due to customer prepayments of \$13.1 million received in the second quarter.

Net cash used in investing activities was \$40.6 million in the first six months of 2022 compared to \$57.1 million in the prior-year period due to decrease in capital expenditures primarily related to investments in new equipment funded by customer prepayments in 2021. See Note I to the Consolidated Financial Statements for additional discussion. Additionally, the Company paid a working capital true-up of approximately \$3.0 million during the second quarter of 2022 related to the HCS-Electronic Materials acquisition. See Note B to the Consolidated Financial Statements for additional discussion.

Capital expenditures are primarily driven by customer partnerships like the precision clad strip project and investments within our HCS-Electronic Materials acquisition as well as infrastructure for new product development, replacing and upgrading equipment, infrastructure investments, and implementing information technology initiatives. For the full year 2022, the Company expects payments for property, plant, and equipment to be approximately \$100 million.

Net cash provided by financing activities totaled \$38.4 million in the first six months of 2022 and \$11.5 million in the comparable prior-year period. The increase is primarily due to increased net borrowings of \$52.8 million under our revolving credit facility in the first half of 2022, compared to an increase in borrowings of \$22.5 million in the same period in the prior year.

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 program, environmental remediation projects, and strategic acquisitions for at least the next twelve months and for the foreseeable future thereafter. At July 1, 2022, cash and cash equivalents held by our foreign operations totaled \$29.7 million. We do not expect restrictions on repatriation of cash held outside of the United States to have a material effect on our overall liquidity, financial condition, or 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 July 1, 2022 and December 31, 2021 is as follows:

(Thousands)	July 1, 2022	December 31, 2021
Cash and cash equivalents	\$ 32,175	\$ 14,462
Total outstanding debt	497,298	449,747
Net debt	\$ (465,123)	\$ (435,285)
Available borrowing capacity	\$ 124,034	\$ 176,419

Net debt is a non-GAAP financial measure. We are providing this information because we believe it is more indicative of our overall financial position. It is also a measure our management uses to assess financing and other decisions. We believe that based on our typical cash flow generated from operations, we can support a higher leverage ratio in future periods.

The available borrowing capacity in the table above represents the additional amounts that could be borrowed under our revolving credit facility and other secured lines existing as of the end of each 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, depletion and amortization, and other adjustments.

In 2021, we amended and restated the agreement governing our \$375.0 million revolving credit facility (Credit Agreement) in connection with the HCS-Electronic Materials acquisition. A \$300.0 million delayed draw term loan facility was added to the Credit Agreement and the maturity date of the Credit Agreement was extended from 2024 to 2026. Moreover, the Credit Agreement also provides for an uncommitted incremental facility whereby, under certain conditions, the Company may be able to borrow additional term loans in an aggregate amount not to exceed \$150.0 million. The Credit Agreement 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. Borrowings under the Credit Agreement are secured by substantially all of the assets of the Company and its direct subsidiaries, with the exception of non-mining real property, precious metal, copper and certain other assets.

The Credit Agreement allows the Company to borrow money at a premium over LIBOR or prime rate and at varying maturities. The premium resets quarterly according to the terms and conditions stipulated in the agreement. The Credit Agreement includes restrictive covenants relating to restrictions on additional indebtedness, acquisitions, dividends, and stock repurchases. In addition, the Credit Agreement includes covenants that limit the Company to a maximum leverage ratio and a maximum interest coverage ratio. We were in compliance with all of our debt covenants as of July 1, 2022 and December 31, 2021. Cash on hand up to \$25.0 million can benefit the covenants and may benefit the borrowing capacity under the Credit Agreement.

In November 2021, we completed the acquisition of HCS-Electronic Materials. The Company financed the purchase price for the HCS-Electronic Materials acquisition with a new \$300.0 million five-year term loan pursuant to its delayed draw term loan facility under the Credit Agreement and \$103.0 million of borrowings under its amended revolving credit facility. The interest rate for the term loan is based on LIBOR plus a tiered rate determined by the Company's quarterly leverage ratio.

Portions of our business utilize off-balance sheet consignment arrangements allowing us to use bank owned metal as we manufacture product for customers. Metal is purchased from the consignee and sold to our customer at the time of product shipment. Expansion of business volumes and/or higher metal prices can put pressure on the consignment line limitations from time to time. The precious metal consignment agreements, including our largest such agreement entered into in 2019 and maturing on August 27, 2022, were amended in 2021 to be more consistent with the Credit Agreement. The available and unused capacity under the metal consignment lines totaled approximately \$200.0 million as of July 1, 2022, compared to \$69.8 million as of December 31, 2021. 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. We did not repurchase any shares under this program in the second quarter or first six months of 2022. Since the approval of the repurchase plan, we have purchased 1,254,264 shares at a total cost of \$41.7 million.

We paid cash dividends of \$2.6 million and \$5.1 million on our common stock in the second quarter and first six months of 2022. 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 CASH OBLIGATIONS

We maintain the majority of the precious metals and portions of the 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 \$415.0 million and \$480.2 million as of July 1, 2022 and December 31, 2021, respectively. We were in compliance with all of the covenants contained in the consignment agreements as of July 1, 2022. For additional information on our material cash obligations, refer to our 2021 Annual Report on Form 10-K.

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 2021 Annual Report on Form 10-K.

Forward-looking Statements: *Portions of the narrative set forth in this document that are not statements of historical or current facts are forward-looking statements. Our actual future performance may materially differ from that contemplated by the forward-looking statements as a result of a variety of factors. These factors include, in addition to those mentioned elsewhere herein: the ultimate impact of the COVID-19 pandemic on our business, results of operations, financial condition, and liquidity, including shut downs of our facilities; our ability to achieve the strategic and other objectives related to the HCS-Electronic Materials (defined herein) acquisition, including any expected synergies; the global economy, including inflationary pressures, potential future recessionary conditions and the impact of tariffs and trade agreements; the impact of any U.S. Federal Government shutdowns or sequestrations; the condition of the markets which we serve, whether defined geographically or by segment; 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 the integration of the HCS-Electronic Materials business; 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 start-up and completion 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 consignment fees, tax rates, exchange rates, interest 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, including the conflict between Russia and Ukraine, terrorist activities, and acts of God; changes in government regulatory requirements and the enactment of new legislation that impacts our obligations and operations; the conclusion of pending litigation matters in accordance with our expectation that there will be no material adverse effects; the disruptions in operations from, and other effects of, catastrophic and other extraordinary events including the COVID-19 pandemic; and the risk factors set forth in Part 1, Item 1A of the Company's 2021 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 2021 Annual Report on Form 10-K. There have been no material changes in our market risks since the inclusion of this discussion in our 2021 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 July 1, 2022 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 July 1, 2022.

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 July 1, 2022 that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

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.

Beryllium Claims

As of July 1, 2022, our subsidiary, Materion Brush Inc., was a defendant in one beryllium case. As previously reported, a settlement agreement had been reached in one case, and the case was dismissed during the second quarter. In *Richard Miller v. Dolphin, Inc. et al.*, case number CV2020-005163, filed in the Superior Court of Arizona, Maricopa County, the Company is one of six named defendants and 100 Doe defendants. The plaintiff alleges that he contracted beryllium disease from exposures to beryllium-containing products supplied to his employer, Karsten Manufacturing Corporation, where he was a production worker, and asserts claims for negligence, strict liability – failure to warn, strict liability – design defect, and fraudulent concealment. The plaintiff seeks general damages, medical expenses, loss of earnings, consequential damages, and punitive damages, and his wife claims loss of consortium. A co-defendant, Dolphin, Inc., filed a cross-claim against the Company for indemnification. On August 12, 2020, the Company moved to dismiss the cross-claim for failure to state a claim upon which relief can be granted. The court denied the motion on October 23, 2020. On December 7, 2020, the Company filed a Petition for Special Action in the Court of Appeals seeking to appeal the denial of the motion to dismiss the cross-claim. The Court of Appeals declined to accept jurisdiction on December 30, 2020. The court entered a scheduling order on September 14, 2021 that did not set a date for trial. An amended scheduling order was entered on April 8, 2022, but a date for trial was not set. The Company believes that it has substantive defenses and intends to vigorously defend this suit.

In *Ronald Dwayne Manning v. Arconic Inc. et al.*, case number 19CI000219, filed in the Superior Court of the State of California, Tehama County, and later removed to the United States District Court, Eastern District of California (Sacramento Division), case number 2:19-CV-02202-MCE-DMC, the Company was one of three named defendants and 120 Doe defendants. The plaintiff alleged that he contracted beryllium disease from exposures to beryllium-containing products during his employment as an auto mechanic, welder, sprinkler installer, and movie projector operator, and asserted claims for negligence, strict liability, fraudulent concealment, and breach of implied warranties. The plaintiff sought economic damages, non-economic damages, consequential damages, and punitive damages. A settlement agreement was reached in this case, and a Stipulation of Dismissal was entered by the court on June 1, 2022.

No beryllium cases were filed in the second quarter of 2022.

The Company has insurance coverage, which may respond, subject to an annual deductible.

Other Claims

On October 14, 2020, *Garett Lucyk, et al. v. Materion Brush Inc., et. al.*, case number 20CV0234, a wage and hour purported collective and class action, was filed in the Northern District of Ohio against the Company and its subsidiary, Materion Brush Inc. (collectively, the Company). Plaintiff, a former hourly production employee at the Company's Elmore, Ohio facility, alleges, among other things, that he and other similarly situated employees nationwide are not paid for all time they spend donning and doffing personal protective equipment in violation of the Fair Labor Standards Act and Ohio law. Plaintiff filed a motion for conditional certification, which the Company opposed. The motion has been fully briefed, and the parties are awaiting a decision from the court. The Company believes that it has substantive defenses and intends to vigorously defend this suit absent a negotiated resolution.

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 the Company during the three months ended July 1, 2022.

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)
April 2 through May 6, 2022	—	\$ —	—	\$ 8,316,239
May 7 through June 3, 2022	1,181	80.24	—	8,316,239
June 4 through July 1, 2022	—	—	—	8,316,239
Total	1,181	\$ 80.24	—	\$ 8,316,239

- (1) Represents shares surrendered to the Company by employees to satisfy tax withholding obligations on equity awards issued under the Company's stock incentive plan.
- (2) On January 14, 2014, the Company announced that its Board of Directors had authorized the repurchase of up to \$50.0 million of its common stock. During the three months ended July 1, 2022, the Company did not repurchase any shares under this program. As of July 1, 2022, \$8.3 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

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

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 July 1, 2022 *
101.INS	XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document*
101.SCH	Inline XBRL Taxonomy Extension Schema Document*
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document*
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document*
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document*
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document*
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in the Exhibit 101 attachments)

*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: August 3, 2022

/s/ Shelly M. Chadwick

Shelly M. Chadwick

Vice President, Finance and Chief Financial Officer

(Principal Financial Officer)

CERTIFICATIONS

I, Jugal K. Vijayvargiya, certify that:

- 1) I have reviewed this quarterly report on Form 10-Q of Materion Corporation (the “registrant”);
- 2) Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
- 3) Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
- 4) The registrant’s other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) evaluated the effectiveness of the registrant’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) disclosed in this report any change in the registrant’s internal control over financial reporting that occurred during the registrant’s most recent fiscal quarter (the registrant’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant’s internal control over financial reporting; and
- 5) The registrant’s other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant’s auditors and the audit committee of the registrant’s board of directors (or persons performing the equivalent functions):
 - a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant’s ability to record, process, summarize and report financial information; and
 - b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant’s internal control over financial reporting.

Dated: August 3, 2022

/s/ Jugal K. Vijayvargiya

Jugal K. Vijayvargiya

President and Chief Executive Officer

CERTIFICATIONS

I, Shelly M. Chadwick, certify that:

- 1) I have reviewed this quarterly report on Form 10-Q of Materion Corporation (the “registrant”);
- 2) Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
- 3) Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
- 4) The registrant’s other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) evaluated the effectiveness of the registrant’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) disclosed in this report any change in the registrant’s internal control over financial reporting that occurred during the registrant’s most recent fiscal quarter (the registrant’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant’s internal control over financial reporting; and
- 5) The registrant’s other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant’s auditors and the audit committee of the registrant’s board of directors (or persons performing the equivalent functions):
 - a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant’s ability to record, process, summarize and report financial information; and
 - b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant’s internal control over financial reporting.

Dated: August 3, 2022

/s/ Shelly M. Chadwick

Shelly M. Chadwick

Vice President, Finance and Chief Financial Officer

**Certification Pursuant to
18 U.S.C. Section 1350,
As Adopted Pursuant to
Section 906 of the Sarbanes-Oxley Act of 2002**

Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, in connection with the filing of the Quarterly Report on Form 10-Q of Materion Corporation (the “Company”) for the quarter ended July 1, 2022 as filed with the Securities and Exchange Commission on the date hereof (the “Report”), each of the undersigned officers of the Company certifies that, to such officer’s knowledge:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m or 78o(d)), and
2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company as of the dates and for the periods expressed in the Report.

Dated: August 3, 2022

/s/ Jugal K. Vijayvargiya

Jugal K. Vijayvargiya
President and Chief Executive Officer

/s/ Shelly M. Chadwick

Shelly M. Chadwick
Vice President, Finance and Chief Financial Officer

Materion Corporation

**Mine Safety Disclosure Pursuant to Section 1503(a) of the Dodd-Frank Wall Street Reform and
Consumer Protection Act for the Fiscal Quarter Ended July 1, 2022**

Materion Natural Resources Inc., a wholly owned subsidiary, operates a beryllium mining complex in the State of Utah which is regulated by both the U.S. Mine Safety and Health Administration (“MSHA”) and state regulatory agencies. We endeavor to conduct our mining and other operations in compliance with all applicable federal, state and local laws and regulations. We present information below regarding certain mining safety and health citations which MSHA has levied with respect to our mining operations.

Section 1503(a) of the Dodd-Frank Wall Street Reform and Consumer Protection Act (“Section 1503(a)”) requires the Company to present certain information regarding mining safety in its periodic reports filed with the Securities and Exchange Commission.

The following table reflects citations, orders and notices issued to Materion Natural Resources Inc. by MSHA during the fiscal quarter ended July 1, 2022 (the “Reporting Period”) and contains certain additional information as required by Section 1503(a) and Item 104 of Regulation S-K, including information regarding mining-related fatalities, proposed assessments from MSHA and legal actions (“Legal Actions”) before the Federal Mine Safety and Health Review Commission, an independent adjudicative agency that provides administrative trial and appellate review of legal disputes arising under the Mine Act.

Included below is the information required by Section 1503(a) with respect to the beryllium mining complex (MSHA Identification Number 4200706) for the Reporting Period:

(A) Total number of alleged violations of mandatory health or safety standards that could significantly and substantially contribute to the cause and effect of a mine safety or health hazard under Section 104 of the Mine Act for which Materion Natural Resources Inc. received a citation from MSHA	0
(B) Total number of orders issued under Section 104(b) of the Mine Act	0
(C) Total number of citations and orders for alleged unwarrantable failure by Materion Natural Resources Inc. to comply with mandatory health or safety standards under Section 104(d) of the Mine Act	0
(D) Total number of alleged flagrant violations under Section 110(b)(2) of the Mine Act	0
(E) Total number of imminent danger orders issued under Section 107(a) of the Mine Act	0
(F) Total dollar value of proposed assessments from MSHA under the Mine Act	\$0
(G) Total number of mining-related fatalities	0
(H) Received notice from MSHA of a pattern of violations under Section 104(e) of the Mine Act	No
(I) Received notice from MSHA of the potential to have a pattern of violations under Section 104(e) of the Mine Act	No
(J) Total number of Legal Actions pending as of the last day of the Reporting Period	0
(K) Total number of Legal Actions instituted during the Reporting Period	0
(L) Total number of Legal Actions resolved during the Reporting Period	0